



Frontiers in Education 2026 CONFERENCE PROGRAM

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Welcome Message from the General Chair



Dear Esteemed Colleagues and Friends of the FIE Community,

It is with great enthusiasm that I welcome you to the 56th IEEE Annual Frontiers in Education Conference, taking place October 11 to 14, 2026, in the historic city of Paphos, Cyprus. Over the past few years we have all witness the rapid progress in the area of A.I. and how this has affected our lives. Fittingly, we gather under the theme **“Engineering and Computing Education in the Large Language Model Era.”** This year’s theme invites us to think of the considerable challenges that the use of A.I. in Education poses for all of us involved this discipline, either as educators or trainees.

Since its founding in 1971, FIE has served as the premier international venue for the exchange of research, the discussion of pedagogy, and the building of community among educators, researchers, and practitioners in engineering and computing education. Supported by our co-sponsoring societies, the **ASEE Educational Research and Methods (ERM) Division**, the **IEEE Computer Society**, and the **IEEE Education Society**, FIE continues to shape the future of how we teach, learn, and create knowledge in technologically rich and globally connected contexts.

This year’s theme invites us to think of our work as part of a larger composition. Each discipline contributes its own riff, whether hardware or software, theory or practice, pedagogy or technology. Through collaboration and innovation, we create a performance much greater than the sum of its parts.

We are especially proud to feature two keynote speakers whose work exemplifies this spirit of transformation and harmony:

- On **Monday, October 12**, we welcome **Mufti Mahmud**, a distinguished professor in, among other areas, cognitive computing, AI in healthcare, neuroengineering, brain informatics and responsible AI. Mufti’s keynote will address one of the most challenging problems educators face these days which is the constructive and meaningful involvement of LLMs in engineering and computing education.
- On **Tuesday, October 13**, we welcome **Karen Colbert**, a leading educator and DATA scientist and author of *The Algorithm Wasn’t Built for Us*. Introducing a novel educational framework for the age of artificial intelligence, Karen’s keynote (based on the aforementioned book) offers a new scientific lens for evaluating intelligence, learning, and educational design.
- On **Wednesday, October 14**, we welcome **Michael K. J. Milligan**, the Chief Executive Officer of ABET. Michael will deliver a talk about Engineering Education for Lifelong Learning, and in particular how collaboration among higher education institutions, industry and professional societies can help create more flexible, responsive and learner-centered educational ecosystems.

Our program this year spans innovative workshops, panels, paper sessions, poster presentations, and special sessions. Each is designed to advance engineering, engineering technology, computer engineering, and computer science education. Whether you are exploring curriculum redesign, educational technologies, artificial intelligence in the classroom, or inclusive and global learning practices, you will find both depth and breadth in the offerings.

Beyond the formal sessions, FIE 2026 provides rich opportunities for connection: networking with peers, forging collaborations, mentoring students, and exchanging ideas in informal settings. We encourage you to engage fully, share generously, and challenge convention in the spirit of inquiry and continuous improvement.

I would like to extend my heartfelt thanks to the **FIE Steering Committee**, the **Technical Program Committee**, and the many volunteers whose dedication and behind-the-scenes efforts have made this conference possible. We are especially grateful to the **reviewers**, whose thoughtful and rigorous evaluations are vital to maintaining the scholarly excellence of the FIE program.

Welcome to **FIE 2026 in Paphos, Cyprus!** Together, let us riff, harmonize, and innovate as we shape the future of engineering and computing education in a world full of possibility.

Warm regards,



George A. Papadopoulos
On behalf of the FIE 2026 Organizing Committee
Department of Computer Science, University of Cyprus

General Planning Committee

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- Jean Mohammadi-Aragh, *Mississippi State University, ASEE Educational Research & Methods Division*

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The FIE 2026 Research Advancement Committee plays a key role in enhancing the impact of early-stage research and helping the authors convert their papers into journal manuscripts. This committee rigorously evaluates submissions to the FIE conference and selects those with strong potential for extension into full journal publication. Selection criteria include:

- Quality of the paper judged based on topic, methods (or intended outcomes)
- Potential to develop into a journal-worthy manuscript
- Relevance to the conference theme
- Relevance to Journal objectives

The committee reviews all accepted work-in-progress papers and full papers that indicate the possibility of extension against these additional criteria, identifying the highest-quality papers. The selected papers are invited to submit an extended manuscript for consideration in a special issue of our partner journal. The committee will send guidelines for the submission in their invitation emails.

COMMITTEE MEMBERS

- Saira Anwar, *Texas A&M University*
- Campbell Bego, *University of Louisville*
- Jean Mohammadi-Aragh, *Mississippi State University*

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Monday, October 12, 2026 | 12:30 - 1:30

Room: AKAMAS AB

Beyond the Prompt: Human-Centered AI Literacy for Engineering and Computing Education in the LLM Era

Mufti Mahmud

King Fahd University of Petroleum and Minerals

Abstract: Large language models are rapidly reshaping how universities teach, assess, conduct research, and operate. Yet meaningful adoption requires more than access to powerful tools or clever prompting; it demands human-centered AI literacy. Drawing on responsible AI research and institutional practice in higher education, this keynote presents a practical pathway from experimentation to trustworthy educational use. It connects purposeful prompting—goal, context, sources, and expectations—with critical evaluation, academic integrity, privacy, intellectual property, fairness, transparency, and accountability.

Through scenarios spanning teaching, research, and professional services, the talk shows how hallucinations, unreliable outputs, and over-reliance can become institutional risks when human judgement is displaced. The keynote argues that engineering and computing education in the LLM era must develop not only technical fluency, but also the capacity to question, verify, disclose, and govern AI use. Its central proposition is that AI should strengthen creativity, productivity, inclusion, and learning while keeping educators and learners firmly in control.

Biography: Professor Mufti Mahmud is a Distinguished Professor in the Department of Information and Computer Science at King Fahd University of Petroleum and Minerals, Saudi Arabia. His work focuses on explainable, multimodal and privacy-preserving AI for healthcare, ageing, education for low-resource settings. He has authored over 400 peer-reviewed articles and edited more than 60 volumes. His funding portfolio consists of over USD 5 million in competitive grants. He received the Marie-Curie Fellowship, the Vice-Chancellor's Outstanding Researcher Award at NTU, and the Distinguished Professorship Award at KFUPM. He regularly serves as a grant evaluator for major funding agencies such as the European Union, national funding programmes of the UK, Germany, Italy, France, Switzerland, Norway, the Netherlands, Slovakia, Kuwait, Singapore and Brazil, and also serves as an elected governor of the Asia Pacific Neural Network Society.



Tuesday, October 13, 2026 | 12:00 - 1:00

Room: AKAMAS AB

The Algorithm Wasn't Built for Us AI is Learning...but are we?

Karen Colbert

Abstract: It's that education was ever neutral.

For decades, we've mistaken compliance for learning, efficiency for excellence, standardization for rigor, and data for understanding. Artificial intelligence didn't invent those assumptions.

It inherited them.

Now it's teaching them back to us as if they were objective truth.

But what if the limitations of AI reveal less about technology than they do about us?

Large language models were built on assumptions rooted in Western languages and Western knowledge systems. Around the world, many languages encode relationships, context, and meaning in ways that those systems were never designed to represent.

Research in Indigenous language revitalization reveals that this is not simply a translation problem. It is evidence that language itself carries fundamentally different ways of organizing knowledge.

Drawing from her book, research, and teaching at the intersection of AI, statistics, and Indigenous knowledge systems, Karen Colbert reveals the invisible architecture beneath modern education and the assumptions artificial intelligence is now scaling at unprecedented speed.

Introducing a novel educational framework for the age of artificial intelligence, this keynote offers a new scientific lens for evaluating intelligence, learning, and educational design.

Biography: Karen Colbert is an educator, data scientist, TEDx speaker, and award-winning author whose work explores the intersection of artificial intelligence, education, and culture. Through research, storytelling, and systems thinking, she challenges audiences to examine the invisible assumptions embedded within technology and the institutions that shape how we learn, lead, and belong.

She is the author of *The Algorithm Wasn't Built for Us*, which explores how AI reflects and amplifies the assumptions already embedded in our educational systems. Her work offers a new lens for understanding intelligence, learning, and innovation by bringing together artificial intelligence, statistics, Indigenous knowledge systems, and human-centered systems design.

Karen's work has been recognized internationally, including receiving the 2025 Legendary Women of Impact Award in Paris. She has delivered keynote presentations for leading educational and AI organizations, including the Association for the Advancement of Artificial Intelligence (AAAI) Spring Symposium at Stanford University, and has been an invited speaker for the Center for Teaching Excellence and Innovation at Johns Hopkins University. She has also been featured as a guest expert on the University of Pittsburgh's Explainable AI Podcast.

She is a Research Fellow with the DRUM Circle at the American Indian College Fund, where her research explores how Indigenous knowledge systems can inform the future of teaching, learning, mathematics, and artificial intelligence. She was a founding member of the American Indian College Fund Faculty Advisory Committee and the first Data Carpentry Instructor Trainer among Tribal Colleges.

Known for making invisible systems visible, Karen helps audiences uncover the hidden assumptions shaping technology before those assumptions become tomorrow's infrastructure. Her work challenges one of the defining questions of the AI era: not what AI can do, but what AI is learning from us. She invites educators, researchers, and leaders to rethink the systems we inherit before we automate them.



Wednesday, October 14 2026 | 11:00 – 12:00

Room: AKAMAS AB

Engineering Education for Lifelong Learning: The Power of Collaboration and Innovation

Dr. Michael K. J. Milligan, Ph.D., P.E., CAE

ABET, Chief Executive Officer

Abstract: The pace of technological and societal change is reshaping expectations for engineering education and professional development. This presentation explores how collaboration among higher education institutions, industry and professional societies can help create more flexible, responsive and learner-centered educational ecosystems – and what quality assurance organizations can do to support them. Drawing on global trends and emerging approaches to credentialing, workforce development and continuous learning, the session highlights opportunities to strengthen connections between education and professional practice. Participants will have an opportunity to consider how innovation and partnership can help prepare learners to adapt, grow and contribute throughout their careers.

Biography: Michael K. J. Milligan, PhD, P.E., CAE, currently serves as the Chief Executive Officer of ABET, an ISO 9001 certified, global, nonprofit quality assurance organization of 34 technical and professional societies. Through the accreditation of academic programs, recognition of professional credentials and assessment of student learning, ABET supports excellence in higher education worldwide.

Prior to joining ABET in 2009, Milligan was a systems director at the Aerospace Corporation, leading a team at the NASA Goddard Space Flight Center developing the next generation environmental satellites for NOAA. Milligan served over 24 years as a career U.S. Air Force officer working in operations, engineering education, international research & development, technology acquisition.

Milligan earned his PhD from the University of Texas at Austin, his M.S.E. from the University of Massachusetts at Lowell, and his B.S. from Michigan State University — all in electrical engineering. He also earned an M.B.A. in Business Administration from Western New England College, is a registered Professional Engineer (PE) in Colorado and Maryland, and a Certified Association Executive (CAE). He is also a certified Master Naturalist for the state of Maryland.

Developmental Team Formation Using Personality-Based Clustering in Computing and Engineering Education

Room: Aphrodite A

9:00 – 12:00

Organizers

Greg Anderson, Laura Cutler, Spencer Hilton, and Mark Keith (Brigham Young University)

Description

This workshop presents a research-based, scalable framework for forming and sequencing student teams in engineering and computing education using personality-based clustering. While team-based learning is central to these disciplines, most programs rely on ad hoc or convenience-based approaches to team formation, often overlooking decades of research demonstrating that team composition significantly impacts cohesion, learning, and performance. Drawing on the Big Five personality model and longitudinal research in organizational behavior and information systems, this workshop introduces a developmental approach to team formation that strategically varies team composition across multiple semesters to optimize student outcomes.

Participants will learn how to measure student personality traits using validated Big Five instruments and apply data-driven clustering techniques to group students into personality types. The workshop then demonstrates how to use these clusters to construct homogeneous teams in early stages of student development, where reduced interpersonal conflict and increased cohesion support foundational learning. In later stages, participants will explore how to transition to heterogeneous teams that introduce cognitive and interpersonal diversity, fostering higher levels of creativity, performance, and professional skill development. This developmental sequencing model is supported by more than a decade of implementation in a large Information Systems program serving over 200 students annually and is validated through longitudinal studies examining team learning, cohesion, and performance outcomes.

Unleashing Quantitative and Qualitative Data Analysis Through Generative AI

Room: Aphrodite B

9:00 – 12:00

Organizers

Namig Abbasov, Jason Bronowitz, Abimelec Mercado Rivera, Eric Prosser (Arizona State University)

Description

This pre-conference workshop prepares engineering educators and engineering education researchers to integrate generative AI into instructional and research contexts through structured, evidence-informed practices. Rather than positioning AI as a peripheral enhancement, the workshop situates generative AI within established pedagogical and methodological frameworks familiar to the engineering education community. The session emphasizes responsible, human-centered use that strengthens disciplinary reasoning, transparency, and reflective judgment.

The workshop focuses on two complementary domains: undergraduate instruction in statistics and data analysis, and qualitative research in engineering education. In the instructional segment, participants examine how generative AI can support introductory programming and statistical reasoning through carefully designed prompting strategies and scaffolded Python activities. Using modular notebook environments, facilitators demonstrate how AI-generated code can be evaluated, refined, and contextualized to promote conceptual understanding and computational fluency. Attention is given to instructional design decisions, ethical framing, and assessment considerations that help ensure AI functions as a learning support rather than a replacement for student engagement.

The research segment addresses qualitative coding workflows. While qualitative inquiry provides contextual depth that complements statistical generalization, it is labor-intensive when performed exclusively by humans and raises ongoing concerns related to bias, reliability, and reproducibility when generative AI assistants are incorporated into the workflow. The workshop demonstrates a balanced approach, showing how generative AI can assist with open coding, thematic analysis, and validation procedures while preserving researcher reflexivity and accountability. Participants will analyze a sample dataset and explore strategies for prompt construction, iterative review, and documentation of analytic decisions.

Across both domains, the workshop integrates demonstrations, small-group activities, and structured discussion. Participants leave with adaptable prompts, reusable instructional templates, and practical implementation strategies suitable for immediate application in classrooms and research projects. The session supports faculty across career stages and roles who seek to engage generative AI in ways that advance learning, methodological rigor, and ethical practice in engineering education.

From Unit Diagnosis to Action-Using OLEET, DANCE, and TRIPLE-CaTED, to Improve Engineering Teaching

Room: Christiaan Barnard

9:00 – 12:00

Organizers

Lance White, Karan Watson, Kristi Shryock, and Natali Huggins (Texas A&M University)

Description

This three-hour pre-conference workshop equips engineering and computing educators with a practical, context-sensitive pathway for improving teaching in the LLM era, where shifting tools, norms, and constraints can quickly destabilize established instructional practices. Rather than treating "what works" as universal, the workshop begins by helping participants diagnose the local culture and dominant teaching epistemology of a chosen instructional unit (course, lab, sequence, or program component), drawing on change and diffusion scholarship that emphasizes the centrality of context in adoption and sustainability.

Participants will use the TRIPLE-CaTED diagnostic protocol informed by a modified TRIPLE lens (Svihla et al., 2023) to surface how intersectional power, learning norms, and evolutionary change dynamics shape what "counts" in the unit. CaTED supports a structured analysis of unit culture (supplemented by insights from Tribal Leadership regarding language and relationship patterns) and teaching epistemology (e.g., what counts as knowing, evidence, and legitimate participation). Participants then translate this diagnostic into action through OLEET (Optimizing Learning Environments for Engineering Teaching), aligning strategies across student composition, topic demands, and instructor skills. Through this process attendees will better understand their context and see direct modifications available to them given their own institutional resources and constraints. Through DANCE (Designing Adaptations for the Next Changes in Education) attendees will build an implementation plan that anticipates resistance, leverages supports, and includes short-cycle indicators for iterative improvement. This planning process will challenge the attendees to expand their conceptualization of change beyond that of their own classroom and enable them to understand how grander change within their organization is within reach, not just over the horizon.

Attendees leave with a complete set of reusable artifacts: a TRIPLE-CaTED unit profile and leverage points, an OLEET alignment map, and a DANCE-based 30-90 day action plan, along with editable templates and peer feedback to support follow-through after the conference.

Pedagogies of Care: From Policing to Amplifying Student Voices to Develop Academic Integrity

Room: Leda

9:00 – 12:00

Organizers

Homero Murzi (Texas A&M University)

Description

Academic integrity thrives when classrooms move from surveillance to care. In engineering and computer science education—where performance pressure, high-stakes assessment, and AI-enabled shortcuts increasingly shape student behavior—integrity cannot be sustained through policing alone. This pre-conference workshop proposes Pedagogies of Care as a proactive, evidence-informed framework for cultivating ethical learning cultures that reduce misconduct while strengthening deep engagement and persistence. Drawing on research on psychological safety, student motivation, and transparent teaching practices, the session reframes integrity as an instructional design outcome produced by aligned course structures, humanizing relationships, and assessment systems that reward learning processes rather than only final products.

Participants will examine how fear, ambiguity, and perceived unfairness can drive integrity violations, and how care-centered practices instead promote productive struggle, responsible help-seeking, and ownership of learning. Through a sequence of guided design activities, attendees will identify an "integrity hot spot" in one of their courses (e.g., an exam, project, lab report, or AI-use policy) and redesign it using integrity-supportive strategies such as transparent criteria, iterative drafts, authentic task constraints, and brief metacognitive attribution prompts. The workshop also introduces high-impact, low-stakes techniques that scale across small and large-enrollment contexts, including empathy check-ins with feed-forward adjustment routines, care-centered classroom norm-setting for discourse and collaboration, and a "co-created syllabus segment" that provides structured choice while maintaining rigor and accountability.

By the end of the three-hour session, participants will leave with a practical "Care-Integrity Toolkit" containing editable templates (assignment transparency checklist, prompt bank, feedback loop scripts, co-creation framework, and ethical AI-use language), a peer-informed redesign of one learning activity, and a two-week implementation plan for immediate classroom integration. Aligned with FIE's commitment to advancing rigorous and impactful educational innovation, this workshop equips educators, graduate teaching assistants, instructional designers, and faculty leaders with research-based, adaptable approaches for transforming compliance-driven environments into cultures of mutual respect, intellectual honesty, and authentic inquiry across disciplines.

Designing Projects That Enhance Learning and Engagement in Your Quantitative Analysis Courses

Room: Aphrodite A

13:00 – 16:00

Organizers

Siddharthan Govindasamy (Boston College), Christopher Lee (Franklin W. Olin College of Engineering), Jeff Dusek (Baldwin Wallace University), and Orion Taylor (Olin College of Engineering)

Description

Quantitative analysis courses are the foundation of most engineering curricula and focus heavily on specific technical content. Despite their importance, students don't often get substantial opportunities to apply the analysis tools they're learning to meaningful applications, leaving it unclear how the content connects to real-world applications. At our institutions, we have incorporated a series of scaffolded projects into traditionally content-heavy quantitative analysis courses that contextualize the technical material and give students practice applying analysis to solve engineering problems so that they build an appreciation for and intuition into how quantitative analysis enables engineering design. The workshop will begin with a discussion of the intent and motivation for using guided projects in quantitative analysis courses. A framework with design principles for creating projects will follow. Then, using specific project examples (e.g., inverted pendulum robot, helmholtz resonator, oscillating mass, accelerometer step-counter), we will conduct interactive sessions that go into the details of what instructors and students do in the projects. Participants will experience how the early phases of the project create motivating context for the upcoming technical content that give students a clear picture of why the content they're learning is necessary and how it will be applied. They will then go through related in-class activities and assignments that require an understanding of theory, application of computational tools, and making experimental measurements all which lead up to the project. Participants will then see the expected deliverables, student reflection, and assessment guidelines including the handling of LLM use. The workshop closes with an facilitator-coached activity, where participants, having seen specific examples, use the project design framework to begin to ideate and create projects for their own courses individually and then in small groups. This workshop will appeal to and impact both instructors of first year math, physics, and engineering courses who would like to incorporate projects in a realistic way or to integrate topics in their curricular experiences, and to instructors of mid-level major-required courses in or with overlap with mechanical engineering, and electrical and computer engineering.

Designing Opportunity: Using Capability Cards to Reframe Engineering Education for Students and Faculty

Room: Aphrodite B

13:00 – 16:00

Organizers

R. Alan (Bucknell University), Sarah Applehans (Lafayette College), Lynne Slivovsky (California Polytechnic State University), and Stewart Thomas (Bucknell University)

Description

This hands-on workshop uses a card-based design method grounded in the capability approach to help engineering educators reframe improvement work from measured outcomes to the real opportunities students have to thrive. The capability approach is widely used in the developing world as a framework to support both human thriving and economic development. Participants begin by working with a deck of capability cards to identify the capabilities they needed as students—such as agency, belonging, practical reasoning, voice, and pathways to professional identity—and to surface where engineering programs often constrain or unevenly distribute those opportunities. In small groups, attendees sort, cluster, and prioritize capabilities, then translate them into observable program conditions: curriculum structures, advising and mentoring practices, assessment regimes, learning environments, and informal cultural norms that enable (or inhibit) student flourishing.

The workshop then shifts from diagnosis to co-design. Participants collaboratively create a second, parallel deck of "faculty capability" cards that captures what educators need to cultivate and sustain those student opportunities under real constraints. These cards make explicit the enabling conditions that are often implicit in reform rhetoric—time and workload flexibility, autonomy and professional judgment, access to resources and data, supportive departmental governance, communities of practice, and recognition structures that reward educational change. This "dual-deck" approach addresses a common implementation gap: programs can articulate what students should experience without naming what faculty require to deliver those experiences reliably and equitably.

Throughout, the session emphasizes active learning—jigsaw sorting, gallery walks, rapid prototyping, and structured reflection—so participants leave with concrete artifacts rather than only discussion. Attendees will receive printable templates and facilitation guides, a curated set of student capability clusters, a prototype faculty capability deck with definitions and prompts, and a short implementation plan tailored to their local context (course, program, or department). The method is designed to be reusable for faculty retreats, curriculum review, accreditation conversations, and strategic planning focused on opportunity and flourishing.

From Principles to Practice: Training Faculty for Ethical AI Use in Higher Education

Room: Athena

13:00 – 16:00

Organizers

Vadislav Slavov (Technical University of Sofia), Yanjun Yan (Western Carolina University)

Description

The rapid integration of Artificial Intelligence (AI) into higher education is transforming teaching, assessment, and student support, while simultaneously raising complex ethical challenges for educators. Faculty members increasingly face questions related to academic integrity, transparency, bias, accountability, and fair assessment in AI-enhanced learning environments. Although ethical principles and institutional policies are emerging, many educators struggle with a practical question: how to apply these principles in everyday teaching and assessment decisions. This pre-conference workshop offers a hands-on, case-based faculty development experience focused on the ethical use of AI in higher education. Rather than providing technical training on specific AI tools, the workshop emphasizes ethical reasoning, pedagogical judgment, and professional responsibility. It is designed for academic staff, instructional designers, and educational leaders across disciplines who are involved in teaching and assessment where AI tools are present. The workshop follows a "from principles to practice" approach. Participants are briefly introduced to core ethical principles relevant to AI use in academia, such as fairness, transparency, academic integrity, human oversight, and accountability. These principles are then explored through realistic, discipline-agnostic case studies reflecting common dilemmas faced by educators today, including student use of generative AI, AI-assisted grading and feedback, fabricated AI-generated sources, accessibility tools, and AI-driven personalization. Working in small groups, participants analyze cases, identify ethical risks and competing values, and develop practical response strategies that can be adapted to their own institutional and disciplinary contexts. The case-based methodology encourages reflective practice, peer learning, and cross-disciplinary exchange, enabling participants to move beyond abstract discussion toward actionable solutions. The workshop design builds on prior experience in developing ethical AI guidelines and structured faculty training curricula for higher education, ensuring that the session is grounded in an already developed and coherent pedagogical framework rather than an exploratory approach. Selected publicly available resources illustrating this background can be found at <https://empower-ai.eu/results/>. By the end of the workshop, participants will have practiced ethical decision-making in AI-related teaching scenarios, developed concrete strategies for responsible AI use in their courses, and drafted example statements or guidance that can be incorporated into syllabi or assignments. Participants who successfully complete the workshop will be awarded a certificate acknowledging their competence in ethical AI use in higher education—an area where formal certification opportunities are currently limited.

Designing Agentic Student Success Systems for Context-Aware Performance Prediction

Room: Christiaan Barnard

13:00 – 16:00

Organizers

Esha Barlasakar, David Cutting, and Andrew McDowell (Queen's University Belfast)

Description

This pre-conference workshop examines how agentic student academic performance prediction systems can automatically pull, aggregate, and process data from dispersed university platforms (for example, LMS, attendance, assessment, and advising tools). By enriching raw feeds with student, module, tutor, programme, and institution-level context, these systems generate more accurate predictions of performance and produce meaningful, personalised action plans for students who are low-performing or at risk based on early signals. Using an existing AI based tool "Student Academic Performance Predictor" (SAPP) as a working case, participants will interrogate end-to-end, context-aware pipelines, from data acquisition and feature engineering to model interpretation and intervention design, and evaluate how automated, explainable insights can augment rather than replace academic judgement and student agency. Participants will explore decision support at four levels: (1) individual students, with timely feedback, early alerts, and co-created action plans; (2) modules and teaching teams, with tools to identify struggling learners, adapt pedagogy, review assessment timing, and target support; (3) programme leadership, with visibility into cross-module patterns, bottlenecks, and equity gaps that guide curriculum refinement and resource allocation; and (4) schools and institutions, with aggregated analytics that inform retention, inclusion, and student success strategies at scale. Hands-on activities will include mapping institutional data sources, designing context features, interpreting risk dashboards, and drafting intervention playbooks that respect data governance and privacy constraints. The session aligns with FIE's mission by promoting innovation in engineering and computing education, advancing evidence-based pedagogy, and applying data science ethically to improve equity, retention, and learning outcomes. Expected outcomes include a reference architecture for agentic learning analytics workflows, practical heuristics for balancing automation with human expertise, and evaluation criteria for responsible deployment, including explainability, bias auditing, actionability, and impact monitoring. By the end, attendees will leave with transferable templates and prompts to pilot context-rich, agentic analytics that empower educators and students while upholding institutional responsibility. The discussion will foreground transparency, consent, and fairness, and will share lessons learned from SAPP pilots, including boundary conditions, failure modes, and strategies for adoption.

Embedding Sociotechnical Thinking in Core ECE Courses

Room: Leda

13:00 – 16:00

Organizers

Cynthia Finelli (University of Michigan), Susan Lord (University of San Diego), and John Oliver (California Polytechnic State University)

Description

This three-hour interactive pre-conference workshop is designed to help engineering faculty integrate sociotechnical (ST) thinking into core electrical and computer engineering (ECE) courses traditionally framed as value-neutral, such as circuits, embedded systems, digital signal processing (DSP), and assembly language programming. Drawing on classroom-tested modules, the workshop demonstrates how issues of power, equity, labor, environment, ethics, and justice can be meaningfully embedded within technical instruction rather than treated as add-ons. Participants will experience selected ST activities as learners, explore a curated menu of adaptable modules, and review instructor support materials. Facilitators will also share insights from implementing these modules across three universities.

Grounded in established ST scholarship and design justice principles, the workshop emphasizes examining trade-offs, power inequities, unintended consequences, and distributive impacts embedded in technological systems. It responds to longstanding calls in engineering education to situate technical systems within broader social, political, and economic contexts while addressing faculty challenges such as limited curricular time and lack of preparation in ST content. The featured modules align with ABET and comparable EU accreditation ethics requirements and focus on systemic analyses rather than isolated ethics lessons. Topics include conflict minerals and electronics manufacturing, surveillance and user interface design, right-to-repair movements, and bias in signal processing applications. These modules leverage familiar technical artifacts-signals, sensors, processors, and programming languages-to reinforce technical learning goals while broadening students' understanding of societal impacts.

Led by experienced educators and NSF-funded curriculum reform leaders, the workshop is structured around short presentations and small-group discussions. Participants engage in a sample ST activity, rotate through module-focused discussion booths, and collaborate in brainstorming adaptations for their own courses. Intended for ECE faculty and graduate instructors, the session equips attendees with practical facilitation skills, reusable analytical frameworks, and classroom-tested materials. Participants leave with a concrete ST module idea tailored to their course and access to follow-up support to further develop lesson plans, activities, and assessment strategies.

Registration

Sat Oct 10, 17:00 – 19:00 · Akamas Foyer

Registration

Sun Oct 11, 8:00 – 17:00 · Akamas Foyer

Pre-Conference Workshop: Developmental Team Formation Using Personality-Based Clustering in Computing and Engineering Education

Sun Oct 11, 9:00 – 12:00 · Aphrodite A

Author(s): Greg Anderson (Brigham Young University); Laura Cutler (Brigham Young University); Spencer Hilton (Brigham Young University); Mark Keith (Brigham Young University)

Speaker(s): Laura Cutler (Brigham Young University)

Pre-Conference Workshop: From Unit Diagnosis to Action-Using OLEET, DANCE, and TRIPLE-CaTED, to Improve Engineering Teaching

Sun Oct 11, 9:00 – 12:00 · Adonis

Author(s): Lance White (Texas A&M University); Karan Watson (Texas A&M University); Kristi Shryock (Texas A&M University); Natali Huggins (Texas A&M University)

Speaker(s): Lance White (Texas A&M University)

Pre-Conference Workshop: Pedagogies of Care: From Policing to Amplifying Student Voices to Develop Academic Integrity

Sun Oct 11, 9:00 – 12:00 · Leda

Author(s): Homero Murzi (Texas A&M University, USA)

Pre-Conference Workshop: Unleashing Quantitative and Qualitative Data Analysis Through Generative AI

Sun Oct 11, 9:00 – 12:00 · Aphrodite B

Author(s): Namig Abbasov (Arizona State University); Jason Bronowitz (Arizona State University); Abimelec Mercado Rivera (Arizona State University); Eric Prosser (Arizona State University)

Speaker(s): Eric Prosser (Arizona State University)

Coffee Break

Sun Oct 11, 10:45 – 11:00

FIE Steering Committee Open Meeting

Sun Oct 11, 12:00 – 13:00 · Hermes

Sunday Lunch

Sun Oct 11, 12:00 – 13:00

Pre Conference Workshop: Designing Opportunity: Using Capability Cards to Reframe Engineering Education for Students and Faculty

Sun Oct 11, 13:00 – 16:00 · Aphrodite B

Author(s): R. Alan (Bucknell University); Sarah Appelhans (Lafayette College, United States of America); Lynne Slivovsky (California Polytechnic State University); Stewart Thomas (Bucknell University)

Speaker(s): R. Alan (Bucknell University)

Pre Conference Workshop: From Principles to Practice: Training Faculty for Ethical AI Use in Higher Education

Sun Oct 11, 13:00 – 16:00 · Athena

Author(s): Vladislav Slavov (Technical University of Sofia); Yanjun Yan (Western Carolina University)

Speaker(s): Vladislav Slavov (Technical University of Sofia)

Pre-Conference Workshop: Designing Agentic Student Success Systems for Context-Aware Performance Prediction

Sun Oct 11, 13:00 – 16:00 · Adonis

Designing Agentic Student Success Systems for Context-Aware Performance Prediction

Author(s): Esha Barlaskar (Queen's University Belfast); David Cutting (Queens University Belfast Belfast); Andrew McDowell (Queen's University Belfast)

Speaker(s): Esha Barlaskar (Queen's University Belfast)

Pre-Conference Workshop: Designing Projects That Enhance Learning and Engagement in Your Quantitative Analysis Courses

Sun Oct 11, 13:00 – 16:00 · Aphrodite A

Author(s): Siddhartan Govindasamy (Boston College); Christopher Lee (Franklin W. Olin College of Engineering); Jeff Dusek (Baldwin Wallace University); Orion Taylor (Olin College of Engineering)

Pre-Conference Workshop: Embedding Sociotechnical Thinking in Core ECE Courses

Sun Oct 11, 13:00 – 16:00 · Leda

Author(s): Cynthia Finelli (University of Michigan); Susan Lord (University of San Diego); John Oliver (Cal Poly)

Speaker(s): Susan Lord (University of San Diego)

Coffee Break

Sun Oct 11, 14:30 – 14:45 · Akamas Foyer

Reviewer Appreciation Reception

Sun Oct 11, 17:00 – 18:30 · Terrace - Coral Beach Hotel & Resort

Breakfast on Own - Partner Hotels

Mon Oct 12, 6:00 – 8:00

Registration

Mon Oct 12, 7:00 – 17:30 · Akamas Foyer

Opening Ceremony & New Faculty Fellows Recognition

Mon Oct 12, 8:00 – 8:30 · Akamas A/B

Assessment Design, Oral Exams & Academic Integrity (I)

Mon Oct 12, 8:30 – 10:00 · Akamas A/B

Chair(s): Filip Strömbäck (Linköping University); Jeffrey Yackley (University of Michigan - Flint)

Beyond Automation: Understanding Faculty Engagement in Program-Level Assessment

Author(s): Suleyman Uludag (The University of Michigan - Flint); Stephen Turner (University of Michigan-Flint); Tyler Judd (University of Michigan - Flint); Grace LaBelle (University of Michigan - Flint)

Speaker(s): Tyler Judd (University of Michigan - Flint)

A Comprehensive Assessment Framework for App Development Coding Camps

Author(s): Ilenia Fronza (Free University of Bolzano); Sami Viitanen (University of Jyväskylä); Luis Corral (ITESM Campus Queretaro); Tommi Mikkonen (University of Jyväskylä); Shiva Parida (Free University of Bolzano); Madalina Ciobanu (Free University of Bolzano)

Speaker(s): Ilenia Fronza (Free University of Bolzano)

Self- and Peer-Grading with Partial Reworkability in the Age of LLMs to Enhance Student Learning in Electrical and Computer Engineering Courses

Author(s): Yanjun Yan (Western Carolina University)

Speaker(s): Yanjun Yan (Western Carolina University)

Student Feedback on Experiences with Oral Exams

Author(s): Mihaela Sabin (University of New Hampshire); Tammy VanDeGrift (University of Portland); Renée McCauley (College of Charleston); Bonnie MacKellar (St. John's University); Priscilla Jimenez Pazmino (University of St. Thomas); Richard Blumenthal (Regis University); Amruth Kumar (Ramapo College of New Jersey)

Speaker(s): Priscilla Jimenez Pazmino (University of St. Thomas)

When Grades Spark Debate: A Study on Exam Review Tensions

Author(s): Nikolaos Korkakakis (Volvo Cars); Davide Tateo (Lund University); Karim Khalil (Lund University); Nadim Hagatulah (Lund University); Yingyi Zhang (Lund University); Emelie Engström (Lund University); Emma Söderberg (Lund University)

Speaker(s): Karim Khalil (Lund University)

What is an Instructional Framework in Computer Science Education? A Systematic Mapping Study

Author(s): Júlia Veiga (Federal University of Pelotas); Julio Santos de Almeida (Federal University of Pelotas); Lui Aquini (Universidade Federal de Pelotas); Simone Cavalheiro (Federal University of Pelotas); Luciana Foss (Federal University of Pelotas)

Speaker(s): Moniely Silva Barboza (University of São Paulo (ICMC-USP))

Curriculum Design & Workforce Preparation (I)

Mon Oct 12, 8:30 – 10:00 · Akamas C

Chair(s): Divya Nalla (Nalla Malla Reddy Engineering College); Weiying Zhu (Metropolitan State University of Denver)

WIP - Embedding Career Readiness as Ethics-Infused Engineering Practice: An Innovative Undergraduate Course Model

Author(s): Hortense Gerardo (University of California, San Diego)

Speaker(s): Hortense Gerardo (University of California, San Diego)

Preparing the Next-Generation Workforce for the AI Era: Evidence from Job Postings-Based Skills Demand Analysis

Author(s): Eugene Park (Massachusetts Institute of Technology); Aikaterini Bagiati (Massachusetts Institute of Technology); Alice Cai (Massachusetts Institute of Technology); Grace Lin (Massachusetts Institute of Technology); Thomas Malone (Massachusetts Institute of Technology); Cynthia Breazeal (MIT Media Lab)

Speaker(s): Grace Lin (Massachusetts Institute of Technology)

Implementing an Outcome-Based Education Ecosystem in the Global South: Practical Insights from a Cambodian Technological Institute

Author(s): Masamu Kamaga (Maranatha Christian University); Chihaya Toda (Maranatha Christian University)

Speaker(s): Masamu Kamaga (Maranatha Christian University)

From AI Hype to Everyday Necessity: A Longitudinal Study of Professional Role Transformation in Master's-Level Computing Education

Author(s): Minna Asplund (LAB University of Applied Sciences); Arto Hellas (Aalto University); Petri Ihantola (University of Jyväskylä); Lauri Malmi (Aalto University)

Speaker(s): Minna Asplund (LAB University of Applied Sciences)

WIP: Secure AI Systems Engineering - a Conscientious AI Learning Curriculum

Author(s): Devika Kataria (JK Lakshmipat University); Amit Sethi (JK Lakshmipat University); Riddhi Khandelwal (JK Lakshmipat University); Menanki Shekhawat (JK Lakshmipat University)

Speaker(s): Devika Kataria (JK Lakshmipat University)

The Transitional Computer Science Major in the Era of Artificial Intelligence: A Systems View of Required Course Redesign

Author(s): Asad Azemi (University of Maryland Eastern Shore)

Emerging Topics & Innovations in Engineering and Computing Education (I)

Mon Oct 12, 8:30 – 10:00 · Aphrodite A

Chair(s): Rajesh Panicker (National University of Singapore); Bryan Ranger (Boston College)

Analyzing Curricular Pattern Complexity Using AI to Improve on-Time Graduation Rates

Author(s): Lynn Vonderhaar (Embry-Riddle Aeronautical University); Juan Ortiz Couder (Embry-Riddle Aeronautical University); Siri Siqveland (Embry-Riddle Aeronautical University); Omar Ochoa (Embry-Riddle Aeronautical University); James Pembroke (Embry-Riddle Aeronautical University)

Speaker(s): Siri Siqveland (Embry-Riddle Aeronautical University)

Engineering's "Big Picture": Disaggregated EDMS Infographics over Time

Author(s): Kristin Schaefer (Texas A&M University)

Speaker(s): Kristin Schaefer (Texas A&M University)

Mapping Pathways to Computing and Engineering in Higher Education: A Correspondence Analysis of Upper Secondary Transitions

Author(s): Thom Kunkeler (Uppsala University); Aletta Nylén (Uppsala University)

Speaker(s): Thom Kunkeler (Uppsala University)

Computing as the New Lingua Franca: A Competence-Based Curriculum for the AI and Sustainability Era

Author(s): ANA SERRA (Instituto Mauá de Tecnologia); Sandro Martini (Instituto Mauá de Tecnologia)

Speaker(s): ANA SERRA (Instituto Mauá de Tecnologia)

Preliminary Evidence from Brazil on the Challenges of Authoring Immersive Educational Experiences in 3D Virtual Worlds

Author(s): César Pacheco (Pontifícia Universidade Católica do Paraná); Rodrigo Münch (Pontifícia Universidade Católica do Paraná); Otávio Nogueira (Pontifícia Universidade Católica do Paraná); Renan Aranha (USP); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná)

Speaker(s): Estéfany Castillo Ventura (Universidade de São Paulo); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná)

Engineering Professionals' Perspectives on Workplace Disruption

Author(s): Gibin Raju (Louisiana State University); Trinidad Balart (Texas A&M University); George Ligler (Texas A&M University); Kristi Shryock (Texas A&M University); Kelly Brumbelow (Texas A&M University)

Speaker(s): Kristi Shryock (Texas A&M University)

Game-Based & Gamified Learning (I)

Mon Oct 12, 8:30 – 10:00 • Athena

Chair(s): Denis Gillet (EPFL); Mark Holliday (Western Carolina University)

WIP: Evaluating Usability and Gamification Elements in a Gamified Educational Application - Towards a Technological-Pedagogical Framework

Author(s): Ana Vrcelj Božić (University of Applied Sciences of Rijeka (VAT: 29573709870)); Natasa Hoic-Bozic (University of Rijeka); Toni Ivanković (University of Zagreb); Tomislav Jagušć (University of Zagreb)

Speaker(s): Ana Vrcelj Božić (University of Applied Sciences of Rijeka (VAT: 29573709870))

WIP: Confidence Calibration in Early Clinical Decision-Making: A Mixed-Methods Study to Inform Serious Game Design

Author(s): Vladislav Ilin (VUW); Craig Watterson (Victoria University of Wellington, New Zealand); Karsten Lundqvist (VUW)

Speaker(s): Vladislav Ilin (VUW)

"WIP:" a Gamified Activity in Statics

Author(s): Seyed Mohammad Seyed Ardakani (Ohio Northern University)

Speaker(s): Seyed Mohammad Seyed Ardakani (Ohio Northern University)

WIP: Empowering Educators to Incorporate Learner Engagement Analytics into Curriculum Design Through Gamification

Author(s): Usman Naeem (Queen Mary University London); Vindya Wijeratne (Queen Mary University of London); Jo Elliott (Queen Mary University of London); Habiba Akter (Queen Mary University of London); Farha Lakhani (Queen Mary University of London); Mahesha Samaratunga (Queen Mary University of London); Na Yao (Queen Mary University of London)

Speaker(s): Usman Naeem (Queen Mary University London)

Engagement is Not Enough: Identifying a Conceptual Abstraction Gap in AI Learning Through a Game-Based Hackathon

Author(s): Seshadri Paravastu (San Jose State University); Ferdinand Rivera (San Jose State University); RajanSelvarajan Thattai (California State University - East Bay); Melody Moh (San Jose State University)

Speaker(s): Seshadri Paravastu (San Jose State University)

Generative AI in Programming Education (I)

Mon Oct 12, 8:30 – 10:00 • Adonis

Chair(s): Homero Murzi (Texas A&M University, USA); Sonia Sahli (SIM Lab Tunisia)

From Code Generator to Learning Partner: Using Generative AI as a Tutor for Algorithm Learning in Introductory Programming

Author(s): Anabela Gomes (Polytechnic University of Coimbra & CISUC); Cristina Costa (Polytechnic University of Coimbra); Jose Marinho (Polytechnic University of Coimbra); Álvaro Santos (Polytechnic University of Coimbra)

Speaker(s): Jose Marinho (Polytechnic University of Coimbra)

Secondary CS Teachers' Perspectives on Introducing an LLM-Coding Assistant to Programming Lessons: A Sociocultural Interpretation

Author(s): Veronica Cucuiat (Raspberry Pi Foundation); Katharine Childs (Raspberry Pi Foundation); Jane Waite (Raspberry Pi Foundation); Sue Sentance (University of Cambridge)

Speaker(s): Veronica Cucuiat (Raspberry Pi Foundation)

Qualifying Qualitative Research Quality with LLM-Assisted Deductive Coding of Large Datasets

Author(s): David Reeping (University of Cincinnati); Madeline Martin (University of Cincinnati); Fatemeh Mirzahassemi Zarandi (University of Cincinnati)

BoilerSketch: A TA-Supervised, Diagram-First GenAI Practice for Structured Diagrams in CS1/Early CS2

Author(s): Ethan Dickey (Purdue University); Vivan Tiwari (Purdue University); Anvit Sinha (Purdue University); Andres Bejarano (Purdue University)

Speaker(s): Ethan Dickey (Purdue University)

Educational Impacts of Generative AI Coding Assistants for Novice Programmers: A Systematic Literature Review

Author(s): Duc Manh Bui (Aalto University); Juho Leinonen (Aalto University); Arto Hellas (Aalto University)

Speaker(s): Arto Hellas (Aalto University)

What Future Computer Science Teachers Think About the Use of GenAI in Programming Lessons? A Case Study

Author(s): Guilherme Rek Castanha (Federal University of Paraná); Venilton Falvo Jr (University of São Paulo (USP)); Catherine Martins Falvo (University of Araraquara); Julio Cezar da Silva Ferreira (Universidade Federal do Paraná); Ellen Barbosa (University of São Paulo); Anderson Marcolino (Federal University of Paraná)

Speaker(s): Maria Eduarda Bernardes Lopes (Universidade de São Paulo)

K-12 & Pre-College STEM Outreach (I)

Mon Oct 12, 8:30 – 10:00 • Aphrodite B

Chair(s): Inna Shvartsman (Estonian Entrepreneurship University of Applied Sciences); Anurag Srivastava (Texas A&M University)

Teaching and Learning Computational Thinking in Middle School: A Systematic Mapping Study Supported by Large Language Models

Author(s): Moniely Silva Barboza (University of São Paulo (ICMC-USP)); Maria Lydia Fioravanti (University of São Paulo); Anderson Deizepe (UTFPR); Katia Felizardo (Universidade Tecnológica Federal Do Paraná (UTFPR)); Ellen Barbosa (University of São Paulo)

Speaker(s): Moniely Silva Barboza (University of São Paulo (ICMC-USP))

Analysis of Programming Learning Support Tools and Materials in Secondary Education: A Systematic Literature Review

Author(s): Iek Chong Choi (Macao Polytechnic University); Wan-Chong Choi (Macao Polytechnic University); Chan-Tong Lam (Macao-Polytechnic-University); António Mendes (University of Coimbra)

Speaker(s): Iek Chong Choi (Macao Polytechnic University)

Integrated STEM Summer Program for Middle School and High School Students

Author(s): Sujing Wang (Lamar University); Raymond Doe (Lamar University)

Speaker(s): Sujing Wang (Lamar University)

Teachers' Experiences Implementing AI in K-12 Classrooms: A Global Perspective

Author(s): Aikaterini Bagiati (Massachusetts Institute of Technology); Claudia Urrea (MIT); Sharifa Alghowinem (MIT Media Lab); Joe Diaz (Massachusetts Institute of Technology); Maimoona Junjuna (World Innovation Summit for Education (WISE)); Selma Talha Jebril (Qatar Computing Research Institute)

Speaker(s): Aikaterini Bagiati (Massachusetts Institute of Technology)

Pathways Towards a National K-12 AI Literacy Program in Colombia

Author(s): Andrés Felipe Salazar-Gómez (Massachusetts Institute of Technology); Randi Williams (MIT); Jorge Gallardo (Day of AI); Oscar Gustavo Sanchez Jaramillo (Colombian Government); Cynthia Breazeal (MIT Media Lab)

Speaker(s): Andrés Felipe Salazar-Gómez (Massachusetts Institute of Technology)

Uno-Ity: A Novel Educational Game for Introducing Decision Trees in K-12 AI Education

Author(s): Jermaine Kyle Morehead (University of Texas at San Antonio); Emily Steinmetz (University of Texas at San Antonio); Ismaila Sanusi (University of Texas at San Antonio); Fred Martin (University of Texas at San Antonio)

Speaker(s): Jermaine Kyle Morehead (University of Texas at San Antonio)

Mentoring, Advising & Peer Support

Mon Oct 12, 8:30 – 10:00 • Leda

Chair(s): Vanessa Tudor (University of Vienna); Igor Verner (Technion - Israel Institute of Technology)

From Digital Natives to Digital Mentors: A Peer Education Approach to Media Literacy

Author(s): Marina Unterweger (Johannes Kepler University Linz); Corinna Hörmann (University Salzburg); Sara Hinterplattner (University of Education Upper Austria); Eva Schmidthaler (Johannes Kepler University Linz); Barbara Sabitzer (Johannes Kepler University)

Speaker(s): Marina Unterweger (Johannes Kepler University Linz)

MENTOR: Machine-Enhanced Tutor for Orientation in Programming

Author(s): Liana Duenha (Federal University of Mato Grosso do Sul); Gabriel Rafols (Federal University of Mato Grosso do Sul); Guilherme Brandão (Federal University of Mato Grosso do Sul)

Speaker(s): Gabriel Rafols (Federal University of Mato Grosso do Sul)

Mentoring the Process: How Graduate Students and Faculty Train the Next Generation of STEM Researchers

Author(s): Gibin Raju (Louisiana State University); Saira Anwar (Texas A&M University)

Speaker(s): Saira Anwar (Texas A&M University)

Lost in Translation? Advisors as a Bridge to Navigating Academic Policies and Terminology in Undergraduate Engineering

Author(s): Saira Anwar (Texas A&M University); Gibin Raju (Louisiana State University); Kareena Menezes (Texas A&M University); Anurag Srivastava (Texas A&M University)

Speaker(s): Saira Anwar (Texas A&M University)

WIP: Blockchain-Based Micro-Credentials Enabling Industry Co-Mentored Training in STEM Graduate Education

Author(s): Yahia Tawfik (Virginia Tech); Christiana Chamon (Virginia Tech); Leyla Nazhandali (Virginia Tech); Vinod Lohani (Virginia Tech); Dayoung Kim (Virginia Tech)

Speaker(s): Yahia Tawfik (Virginia Tech)

Motivating Meaningful Engagement and Ownership of Learning in the Age of AI: Dual Submission Homework, Flexible Deadlines, Peer Support, and Learning Strategy Intervention

Author(s): Marko Lubarda (University of California San Diego); Sheridan Nove (University of California San Diego); Almontaha Sonbul (University of California San Diego); Curt Schurgers (UC San Diego); Alex Phan (University of California, San Diego); Saharnaz Baghdadchi (UC San Diego); Celeste Pilegard (UC San Diego); Huihui Qi (UC San Diego)

Robotics Education

Mon Oct 12, 8:30 – 10:00 • Sophia

Chair(s): John Mitchell (UCL); Suman Saha (Pennsylvania State University)

WIP: Integrating an LLM-Powered Assistant into High School Robotics Education

Author(s): Medha Dalal (Arizona State University); Nikhil Gangaram (Worcester Polytechnic Institute); Bradley Miller (Worcester Polytechnic Institute)

Speaker(s): Medha Dalal (Arizona State University)

WIP: Stress Monitoring During Robotics Workshop Using Smartwatches

Author(s): Jana Alajbeg (University of Zagreb, Faculty of Electrical Engineering and Computing); Ivan Brcic (university of zagreb faculty of electrical engineering and computing); Ana Kržić (University of Zagreb, Faculty of Electrical Engineering and Computing)

Speaker(s): Jana Alajbeg (University of Zagreb, Faculty of Electrical Engineering and Computing)

Learning Through Synchronization: A Digital Twin Framework for Reality-Simulation Alignment Using the MT4 Robot Arm

Author(s): Hyunwoo Kim (Hanbat National University); Byeonghyeon Cho (Hanbat National University); Daegy Lee (Hanbat National University); Nayoung Jin (Hanbat National University); Jaehyeong Kim (Daeseong High School); Seungho Yang (Hanbat National University); SooYoung Jang (Hanbat National University); Changbeom Choi (Hanbat National University)

Speaker(s): Hyunwoo Kim (Hanbat National University)

Curio: Enabling Accessible AI and Robotics Education Through a Low-Cost Mobile Robot

Author(s): Talha Enes Ayranci (University of Glasgow); Florent Audonnet (University of Glasgow); Jonathan Grizou (University of Glasgow); Mireilla Bikanga Ada (University of Glasgow); Gerardo Aragon Camarasa (The-University-of-Glasgow)

Speaker(s): Talha Enes Ayranci (University of Glasgow)

Reflective Judgement Model (RJM) as a Method to Assess Student Ethical Reasoning in an Introductory Robotics Course

Author(s): Erin Henslee (Wake Forest University)

Special Session: Digital Privacy Education in the Large Language Models (LLM) Era

Mon Oct 12, 8:30 – 10:00 · Corallino

Author(s): Rajendra Raj (Rochester Institute of Technology)

Speaker(s): Rajendra Raj (Rochester Institute of Technology)

Poster Session (I) & Coffee Break

Mon Oct 12, 10:00 – 11:00 · Christiaan Barnard Foyer

WIP: Enhancing Conceptual Understanding in Data Science Through Peer Instruction: An Empirical Pilot Study Using Poll Everywhere

Author(s): Divya Mohan (SRM Institute of Science and Technology, Kattankulathur Campus); Bhuvana Gopal (University of Nebraska-Lincoln); ALICE K (SRM INSTITUTE OF SCIENCE AND TECHNOLOGY)

Designing and Evaluating Immersive Virtual Reality Laboratories Through Requirements Engineering - Poster

Author(s): Soma Datta (University of Houston-Clear Lake); Lory Santiago-Vázquez (University of Houston-Clear Lake); Thanh-Nhat Pham (1UCLy (Lyon Catholic University)); Fanny Odet-Radvay (1UCLy (Lyon Catholic University)); Abigale Chavez (University of Houston-Clear Lake); Michelle Alanis (University of Houston-Clear Lake); Annabelle Lozano (University of Houston-Clear Lake)

Speaker(s): Soma Datta (University of Houston-Clear Lake)

Teaching CS1 in the GenAI Era: AI Literacy as a Core Component

Author(s): Junrui Kang (University of Sydney); Mary Lou Maher (University of Sydney)

Llamas for All: Local LLMs for Education

Author(s): David Cutting (Queens University Belfast Belfast); Esha Barlaskar (Queen's University Belfast); Neil Anderson (Queen's University Belfast); Andrew McDowell (Queen's University Belfast); Jack Clydesdale (Queen's University Belfast)

Speaker(s): Esha Barlaskar (Queen's University Belfast)

A Methodology for Teaching Systems Programming Through FUSE Userspace Filesystem Implementation

Author(s): Gunnar Wolf (Universidad Nacional Autónoma de México); Alejandro Miranda (Universidad Nacional Autónoma de México)

Speaker(s): Gunnar Wolf (Universidad Nacional Autónoma de México)

An MCP-Enabled Agentic AI Pipeline for Automated Assessment of Hybrid Paper Exams

Author(s): Mirna Elbestar (American University in Cairo); Soumaia Al Ayyat (The American University in Cairo); Sherif Aly (American University in cairo)

Speaker(s): Soumaia Al Ayyat (The American University in Cairo)

A Study of Professional Communication Students' Perceptions in a Multidisciplinary Design Capstone Course

Author(s): Bob Rhoads (The Ohio State University); Tyler Stump (The Ohio State University); Lynn Hall (Ohio State University)

Speaker(s): Bob Rhoads (The Ohio State University)

Student Perspectives on University AI Policy and Acknowledgement of Use

Author(s): Mary Lou Maher (University of Sydney); Emrie Loh (University of Sydney); Jose Meza (University of Sydney)

Speaker(s): Mary Lou Maher (University of Sydney)

Smart Linux Terminal: AI-Powered Command Visualization System

Author(s): Lamiaa Elrefaei (Benha University)

AI-Powered Deadlock Visualizer and Detection System

Author(s): Lamiaa Elrefaei (Benha University)

Engineering Career Readiness Through Digital Badges and AI-Assisted Project Development

Author(s): Pelin Kurtay (George Mason University)

AI Ethics & Responsible Use

Mon Oct 12, 11:00 – 12:30 · Akamas A/B

Chair(s): Edward Berger (Virginia Tech); Ritu Sharma (Indian Institute of Technology Indore, India)

Lower Secondary Level (Students Aged 11-14 Years) AI Ethics Education: A Scoping Literature Review - Analysis of AI Ethics Concepts Using the UNESCO Framework

Author(s): Claire Johnson (University of Cambridge); Diana Kirby (Raspberry Pi Computing Education Research Centre); Jane Waite (Raspberry Pi Foundation); Sue Sentance (University of Cambridge)

Speaker(s): Diana Kirby (Raspberry Pi Computing Education Research Centre)

AI Ethics Education: A Scoping Review of Pedagogy at Lower Secondary Level

Author(s): Claire Johnson (University of Cambridge); Diana Kirby (Raspberry Pi Computing Education Research Centre); Jane Waite (Raspberry Pi Foundation); Sue Sentance (University of Cambridge)

Speaker(s): Diana Kirby (Raspberry Pi Computing Education Research Centre)

Building Better Builders: Embedding AI Ethics Across the Computer Science Curriculum

Author(s): James Anderson (University of South Florida); Karni Feferkorn (University of South Florida)

Speaker(s): Karni Feferkorn (University of South Florida)

First-Year Engineering Students' Ethical Opinions of Using AI

Author(s): Campbell Bego (University of Louisville); Angela Thompson (University of Louisville); Udit Kumar Das (University of Louisville); Alwin Rajkumar (University of Louisville); Nicolás Blanco (University of Louisville); Parker Routt (University of Louisville); Elisabeth Thomas (University of Louisville); Kristina Bloch (University of Louisville)

Virtue Ethics and Student Use of Large Language Models in Engineering Education

Author(s): Zachary Deutsch (Duke University); Rich Eva (Duke University); Siobhan Rigby Oca (Duke University)

Speaker(s): Zachary Deutsch (Duke University)

Cultivating Friendships of Mutual Accountability: Applying Virtue Ethics Theory to Design Reflection Groups in Computing Education

Author(s): Cyril Agbewali-Koku (University of Maine); Caitlin Moeykens (University of Maine System); Steve Frezza (Franciscan University of Steubenville); Gregory Nelson (University of Maine System)

Speaker(s): Cyril Agbewali-Koku (University of Maine)

Emerging Tools and Frameworks for AI-Era Learning

Mon Oct 12, 11:00 – 12:30 · Akamas C

Chair(s): Vetrica Byrd (James Madison University); Denis Gillet (EPFL)

DevQuest: A 3D Game-Based Learning Environment for Bridging Programming and Software Engineering Practice

Author(s): Thiago Oliveira da Silva (Pontifical Catholic University of Paraná); Victor Gabriel Nascimento (Pontifical Catholic University of Paraná); Douglas da Silva Ribeiro (Pontifical Catholic University of Paraná); Tiago Adelino Navarro (Pontifical Catholic University of Paraná); Carlos Silla (Halmstad University)

Speaker(s): Carlos Silla (Halmstad University)

From Peer-Reviewed Papers to Public Posts: Ethical Concerns About AI in Higher Education

Author(s): Heidi Schuhbauer (Technische Hochschule Nürnberg Georg Simon Ohm); Patricia Brockmann (Technische Hochschule Nuernberg); Latife Bagci (Technische Hochschule Nürnberg); Furat Alrubayee (Technische Hochschule Nürnberg); Abdullah Omar Kassim (Technische Hochschule Nürnberg); Furkan Kalaslioglu (Technische Hochschule Nürnberg); Malik Yildirim (Technische Hochschule Nürnberg)

Speaker(s): Heidi Schuhbauer (Technische Hochschule Nürnberg Georg Simon Ohm)

WIP: Bridging the Gap Between Instructional Design and Pedagogical Use: A Framework for Mathematics Educators

Author(s): Estéfany Castillo Ventura (Universidade de São Paulo); Javier Solis (Universidade de São Paulo); Anarosa Brandão (Universidade de São Paulo)

Speaker(s): Estéfany Castillo Ventura (Universidade de São Paulo)

Rock-Paper-Scissors with a Learning AI: A K-12 Activity for Reasoning About Patterns and Prediction

Author(s): John Weaver (University of Texas at San Antonio); Adam Ali (University of Texas at San Antonio); Ismaila Sanusi (University of Texas at San Antonio); Fred Martin (University of Texas at San Antonio)

Speaker(s): Jermaine Kyle Morehead (University of Texas at San Antonio)

Introducing Secondary Students to AI/ML: Transitioning from Utilization to Fundamental Understanding

Author(s): Wesley Brashear (Texas A&M University); Sandra Nite (Texas A and M University); Zhenhua He (Texas A&M University); Richard Lawrence (Texas A&M University); Dhruva Chakravorty (Texas A and M University)

Speaker(s): Wesley Brashear (Texas A&M University)

When Dropout Predictions Add No Value: The Slow-Progressor Effect

Author(s): Matti Vaarma (Tampere University); Hongxiu Li (Tampere University)

Speaker(s): Matti Vaarma (Tampere University)

Emerging Topics & Innovations in Engineering and Computing Education (II)

Mon Oct 12, 11:00 – 12:30 · Adonis

Chair(s): Carina González González (Universidad de La Laguna); María Sanchez (University of Maryland Baltimore County)

Background and Performance of Computer Science Students with Prior Programming Experience: A Measurement-Based Approach

Author(s): Marili Rõõm (University of Tartu); Piret Luik (University of Tartu); Marina Lepp (University of Tartu)

Speaker(s): Marili Rõõm (University of Tartu)

Tech-Priests, Chaos, and the Warp: Warhammer 40K as a Setting for Philosophical Issues in Technology Use

Author(s): Roger McDermott (University of Eastern Finland); Mats Daniels (Uppsala University); John N A Brown (Robert Gordon University)

Speaker(s): Roger McDermott (University of Eastern Finland)

How AI Use and Learning Outcomes Evolve in Computing Education: A Two-Year Study

Author(s): Piret Luik (University of Tartu); Marina Lepp (University of Tartu)

Speaker(s): Piret Luik (University of Tartu)

From Idea to Classroom in Days: Using "Vibe Coding" to Create a Programming Process Visualizer from IDE Activity Logs

Author(s): Heidi Taveter (University of Tartu); Marina Lepp (University of Tartu)

Speaker(s): Heidi Taveter (University of Tartu)

Virtual First vs. Virtual Last: Student-Reported Learning Experiences in Hybrid Undergraduate Fluid Mechanics Lab Course

Author(s): Jun Chen (Purdue University); Sally Bane (Purdue University); Sean Brophy (Purdue University)

The Computer Science Literacy Atlas: Activities for Teaching and Learning

Author(s): Sumi Hagiwara (Montclair State University); Minsun Shin (Montclair State University); Katherine Herbert (1 Normal Ave)

Speaker(s): Sumi Hagiwara (Montclair State University)

Emerging Topics & Innovations in Engineering and Computing Education (III)

Mon Oct 12, 11:00 – 12:30 · Aphrodite A

Chair(s): Soma Datta (University of Houston-Clear Lake); Mark Holliday (Western Carolina University)

WIP: Exploring the Use of an AI Coding Tool in an Introduction to Engineering Course

Author(s): Chao Wang (Arizona State University)

A Multi-Agent System for Holistic Student Comprehension in Higher Education

Author(s): Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo); Davidson Cury (UFES- Universidade Federal do Espírito Santo)

Speaker(s): Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo)

CodeStylist: Supporting Early Undergraduate Programmers with Course-Aware Code Style Feedback

Author(s): Ethan Dickey (Purdue University); Libra Vento (Purdue University); Peter Kurto (Purdue University); Andres Bejarano (Purdue University)

Speaker(s): Ethan Dickey (Purdue University)

Supporting Engineering Transfer Students' Transition Through a Pre-Semester Immersion Program

Author(s): Lorena Benavides-Riano (Mississippi State University); Mahnas Jean Mohammadi-Aragh (Mississippi State University)

Speaker(s): Mahnas Jean Mohammadi-Aragh (Mississippi State University)

Epistemological Pluralism and Ways of Knowing in Engineering and Computing Education

Author(s): Matti Tedre (University of Eastern Finland); John Pajunen (University of Jyväskylä); Roger McDermott (University of Eastern Finland); Elisa Silvennoinen (University of Eastern Finland)

Speaker(s): Roger McDermott (University of Eastern Finland)

Generative AI in Programming Education (II)

Mon Oct 12, 11:00 – 12:30 · Aphrodite B

Chair(s): Margaret Blackie (Virginia Tech); Gabriel Rafols (Federal University of Mato Grosso do Sul)

WIP: Intentional Integration of Generative AI in Programming-Intensive Mechanical Engineering Courses: A Reflection-Based Framework and Lessons Learned

Author(s): Yen-Lin Han (Seattle University)

Speaker(s): Yen-Lin Han (Seattle University)

WIP: Exploring LLM-Mediated Misconception Analytics in Live CS1 Instruction

Author(s): Harshith Lanka (Georgia Institute of Technology); Zhixian Christopher Liding (Georgia Institute of Technology); Nimisha Roy (Georgia Institute of Technology); Rodrigo Borela (Georgia Institute of Technology)

WIP: Integrating Generative AI Interventions into Programming Courses to Strengthen Students' Logic, Reasoning, and Code Comprehension

Author(s): Thitima Srivatanakul (York College); Fatma Najjar (John Jay College, CUNY); Edy Garfinkel (York College, CUNY); Yunhua Zhao (John Jay College, CUNY)

Speaker(s): Thitima Srivatanakul (York College)

Evaluating the Ability of LLMs to Detect and Explain Code Quality Issues to Novice Programmers

Author(s): Cruz Izu (Adelaide University); David Cantú Delgado (Instituto Tecnológico y de Estudios Superiores de Monterrey)

WIP Designing a Take-Home Programming Assignment Encouraging Large Language Model Use

Author(s): Anne Bosch (UiT The Arctic University of Norway); Edvard Pedersen (UiT - The Arctic University of Tromsø)

WIP: Measuring the Shift: Empirical Insights into Student Programming Problem-Solving Performance in the Age of Generative AI

Author(s): hui yang (San Francisco State University)

Speaker(s): hui yang (San Francisco State University)

K-12 & Pre-College STEM Outreach (II)

Mon Oct 12, 11:00 – 12:30 · Athena

Chair(s): Johannes Moolman (MTU); Efi Nisiforou (University of Nicosia)

WIP - Ethical Decision-Making in the Practice of Software Engineering

Author(s): Steve Chenoweth (Rose-Hulman Institute of Technology); Panagiotis (Panos) Linos (Butler University)

Speaker(s): Christos Mettouris (University of Cyprus)

Supporting Programming Learning in Middle School with [ai] Explore! Game

Author(s): Vedrana Mikulic Crnkovic (University of Rijeka); Martina Holenko Dlab (University of Rijeka); Bojan Crnkovic (University of Rijeka); Ivona Traunkar (University of Rijeka)

POMAP: A Framework for Developing Research Competencies in High School Students as Part of Pre-College Preparation

Author(s): Siddhant Kumar (Plaksha University); Brainerd Prince (Plaksha University); Mhonbeni E Humtsoe (Plaksha University Punjab); Niyati Apoorva Vinjamuri (Plaksha University); Yashvi Jalan (Plaksha University); Trinav Prasad Talukdar (Plaksha University); Pranav Bhaven Savla (Plaksha University)

A Modular Non-Formal Training on Computational Thinking and Coding for Youth Workers

Author(s): Evangelia Vanezi (University of Cyprus); Constantinos Loizou (University of Cyprus); Christos Mettouris (University of Cyprus); Hristijan Pusoski (Youth Association Info Front Prilep); Marjan Naumoski (Youth Association Info Front - Prilep); Hristijan Jordanoski (Youth Association Info Front - Prilep); George Papadopoulos (University of Cyprus)

Integrating Robotics Education and Agentic AI for High School Learners

Author(s): Byeonghyeon Cho (Hanbat National University); Daegyu Lee (Hanbat National University); Nayoung Jin (Hanbat National University); Hyunwoo Kim (Hanbat National University); Jaehyeong Kim (Daeseong High School); Seungho Yang (Hanbat National University); SooYoung Jang (Hanbat National University); Changbeom Choi (Hanbat National University)

Special Session: Preparing Students to Verify AI-Generated Code: A Collaborative Exploration for Introduction to Programming Educators

Mon Oct 12, 11:00 – 12:30 · Corallino

Author(s): Cheryl Beauchamp (Regent University); Alfa Nyandoro (Regent University)

Student Motivation, Identity, Belonging & Wellbeing (I)

Mon Oct 12, 11:00 – 12:30 · Leda

Chair(s): Kwansun Cho (University of Florida); John Mitchell (UCL)

Reflecting Toward Civic Professionalism in Undergraduate Engineering

Author(s): Erhardt Graeff (Olin College of Engineering)

Speaker(s): Erhardt Graeff (Olin College of Engineering)

A Lifecycle-Based Framework for Student Belonging in Engineering Education: A Longitudinal, Cross-Campus Study

Author(s): Yue Chen (Queen Mary University of London); Michael Chai (Queen Mary University of London)

Exploring Student Motivation in Engineering Education Through ARCS-Integrated Pedagogies

Author(s): King Sum CHEUNG (The Hong Kong University of Science and Technology); Kam Tim Woo (HKUST)

Semiotic Competencies and Epistemic Dispositions for Computing Education

Author(s): Roger McDermott (University of Eastern Finland); Mats Daniels (Uppsala University); John N A Brown (Robert Gordon University)

Speaker(s): John N A Brown (Robert Gordon University)

Understanding Students' Emotional Experiences in Engineering Education

Author(s): Rebecca Thomas (Bucknell University); Sarah Appelhans (Lafayette College, United States of America)

Speaker(s): Sarah Appelhans (Lafayette College, United States of America)

Extension Requests in Computer Science: Their Correlation with Academic Performance and Impact on Stress, Learning Outcomes, and Overall Course Satisfaction

Author(s): Tyler Brown (Franciscan University of Steubenville); Joshua Fouch (Franciscan University of Steubenville); Noah Kelly (Franciscan University of Steubenville); Ian McCurdy (Franciscan University of Steubenville); Seamus Sommers (Franciscan University of Steubenville)

Speaker(s): Joshua Fouch (Franciscan University of Steubenville)

Teamwork, Collaboration & Communication Skills (I)

Mon Oct 12, 11:00 – 12:30 · Sophia

Chair(s): Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey); Antonia Christou (Cyprus University of Technology)

How Much Do You Trust an Imperfect AI? A Case Study in Group Formation Technology

Author(s): Bowen Hui (University of British Columbia); Charles-Olivier Dufresne-Camaro (University of British Columbia); Novia Fan (University of British Columbia); Jayati Gupta (University of British Columbia)

Speaker(s): Bowen Hui (University of British Columbia)

Assessment in Team Problem-Solving Exercises in Computing Education

Author(s): Valdemar Švábenský (University of Pennsylvania); Jan Vykopal (Masaryk University); Sukrit Leelaluk (Yamaguchi University); Pavel Celeda (Masaryk University); Fumiya Okubo (Kyushu University); Atsushi Shimada (Kyushu University)

Speaker(s): Pavel Celeda (Masaryk University)

WIP: Uncovering Students' Mental Models of Generative Artificial Intelligence

Author(s): Amrita Ganguly (George Mason University); Sai Sharanya Garika (George Mason University); Aditya Johri (George Mason University)

Speaker(s): Aditya Johri (George Mason University)

Empirical Social Network Analysis of Collaboration Patterns and Performance in Small Samples of iGEM Synthetic Biology Competition Teams

Author(s): Cynthia Lizeth González-Trevizo (Tecnológico de Monterrey); Nidia Lopez Flores (Reykjavik University); Bowen Hui (University of British Columbia); Patricia Vazquez-Villegas (Tecnológico de Monterrey)

Speaker(s): Nidia Lopez Flores (Reykjavik University)

Don't You (Forget About Me): Pre-Formation Trust Design in Team-Based Engineering Courses

Author(s): Tracy Hammond (Texas A and M University); Jobin Varughese (Texas A&M University)

Digital Competences in Teacher Education: Student-Centered Collaborative Development of Open Educational Resources

Author(s): Roland Ambros (University of Vienna); Dominik Dolezal (University of Vienna)

Speaker(s): Roland Ambros (University of Vienna)

Keynote - Mufti Mahmud

Mon Oct 12, 12:30 – 13:30 · Akamas A/B

Chair(s): Michelle Jarvie-Eggart (Michigan Technological University)

Keynote - Mufti Muhammad

Monday Lunch

Mon Oct 12, 13:30 – 14:30

AI-Supported Assessment, Grading & Feedback (I)

Mon Oct 12, 14:30 – 16:00 · Akamas A/B

Chair(s): Kevin Kornegay (Morgan State University); Rajendra Raj (Rochester Institute of Technology)

Efficacy of Viva Voce as an Assessment Tool for Undergraduate Engineering Courses in the World of AI

Author(s): Anil Roy (Plaksha University); Brainerd Prince (Plaksha University); Akshat Goel (Plaksha University); Saanvi Singh (Plaksha University); Manshika Jain (Plaksha University); Samreen Mohd Hanif Tole (Plaksha University); Aryan Chopra (Plaksha University); Ayushmaan Arya (Plaksha University); Prashuchi Pandey (Plaksha University)

Multi-Agent AI System for Generating Computational Thinking Assessment Tasks: A Bebras Challenge Approach

Author(s): Mohsen Asgari (Linköping University); Leonard Busuttil (The University of Malta); Filip Strömbäck (Linköping University); Linda Mannila (Linköping University)

Speaker(s): Mohsen Asgari (Linköping University)

Designing AI-Resilient Assessments Using Interconnected Problems: A Theoretically Grounded and Empirically Validated Framework

Author(s): Kaihua Ding (University of Pennsylvania)

Speaker(s): Kaihua Ding (University of Pennsylvania)

Trusting the Label: How Perceived Feedback Provider Influences Students' Evaluation of AI-Generated Feedback in Reflective Writing

Author(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology); Chris Snijders (Eindhoven University of Technology)

Speaker(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology)

WIP: Sustainable Semiconductor Workforce Development Through a Rapid Certification Program

Author(s): Dibya Barman (Miami University); Kumar Singh (Miami University)

Speaker(s): Kumar Singh (Miami University)

Cognition, Metacognition & Self-Regulated Learning

Mon Oct 12, 14:30 – 16:00 · Akamas C

Chair(s): Campbell Bego (University of Louisville); Lucas Buccafusca (Johns Hopkins University)

Enhancing Engineering Education Through Active Learning: A Curriculum Based Approach Using Packaging Materials and Technologies

Author(s): Carlos Diaz-Acosta (Rochester Institute of Technology); Ana Luna (Universidad del Pacifico); Jennifer Wong (UNIVERSIDAD DEL PACIFICO); Mario Chong (Universidad del Pacifico)

Speaker(s): Jennifer Wong (UNIVERSIDAD DEL PACIFICO)

Leveraging Pseudocode for Behaviour in Object-Oriented Design: A Phenomenographic Investigation

Author(s): Carol Zander (University of Washington); Lynda Thomas (Aberystwyth University); Jan Moström (Umeå University); Anna Eckerdal (Uppsala University)

Speaker(s): Anna Eckerdal (Uppsala University)

Cognitive Load and Design Fixation in Cross-Cultural Engineering Education

Author(s): Andrea Goncher (University of Florida); Gloria Kim (University of Florida); Seongim Moon (University of Florida)

Speaker(s): Gloria Kim (University of Florida)

Predicting Student Performance Based on Source Code Metrics and Self-Regulated Features

Author(s): Hugo Castellanos (Purdue University); Felipe Restrepo-Calle (Universidad Nacional de Colombia); Fabio A. Gonzalez (Universidad-Nacional-de-Colombia-Colombia); Alejandra Magana (Purdue University)

Speaker(s): Hugo Castellanos (Purdue University)

Analyzing Prompt Literacy for AI-Augmented Cognition in Engineering Education: Evidence from Student-AI Interaction Logs

Author(s): Saul Garcia-Huertes (Universitat Politecnica de Catalunya); Ramon Bragos (Universitat Politecnica de Catalunya)

WIP: The Effect of Metacognitive Interventions on Study Time

Author(s): Christopher Cischke (Michigan Technological University)

Speaker(s): Christopher Cischke (Michigan Technological University)

Curriculum Design & Workforce Preparation (II)

Mon Oct 12, 14:30 – 16:00 · Aphrodite A

Chair(s): Edward Berger (Virginia Tech); Yen-Lin Han (Seattle University)

Teaching Learning as a Skill: Embedding Learning Strategies into the Core of a Large Engineering Course

Author(s): Curt Schurgers (UC San Diego); Saharnaz Baghdadchi (UC San Diego); Marko Lubarda (University of California San Diego); Celeste Pilegard (UC San Diego); Alex Phan (University of California, San Diego); Huihui Qi (UC San Diego)

Speaker(s): Curt Schurgers (UC San Diego)

Demographic Variations in Student Views of Engineering Competencies

Author(s): David Lowe (The University of Sydney); Keith Willey (University of Sydney); Emanuela Tilley (University College London)

Speaker(s): David Lowe (The University of Sydney)

Digital Risks Under Control: Empowering Educators Through Coaching

Author(s): Marina Unterweger (Johannes Kepler University Linz); Corinna Hörmann (University Salzburg); Sara Hinterplattner (University of Education Upper Austria); Eva Schmidthaler (Johannes Kepler University Linz); Barbara Sabitzer (Johannes Kepler University)

Speaker(s): Marina Unterweger (Johannes Kepler University Linz)

A Theatrical Intervention: Using Improv and Theatre Exercises with Engineering-Student Presenters

Author(s): John Brocato (University of Georgia); James Huff (University of Georgia)

Speaker(s): John Brocato (University of Georgia)

Advancing Computational Thinking Through Cross-Age Peer Tutoring: Instructional Design and Implementation in Educational Robotics

Author(s): Vaso Anastasiou (University of Cyprus); Charoula Angeli (University of Cyprus)

Speaker(s): Vaso Anastasiou (University of Cyprus)

Embedded Systems, Circuits & Hardware Labs (I)

Mon Oct 12, 14:30 – 16:00 · Aphrodite B

Chair(s): Esha Barlaskar (Queen's University Belfast); Joe Finney (Lancaster University)

Bridging Gaps in AI-Based Engineering Education Through Virtual Labs and Practical Work in Circular Electronics

Author(s): GORAN STOJANOVIC (Faculty of Technical Sciences, University of Novi Sad); Jelena Petrović (University of Novi Sad); Filip Mrkić (University of Novi Sad); Lazar Milić (University of Novi Sad); Mitar Simić (University of Novi Sad)

Supporting Abstraction in RTOS Education Through System Diagramming

Author(s): Rafael Ferrao (Insper); Mariana Silva (University of Illinois at Urbana-Champaign)

Speaker(s): Rafael Ferrao (Insper)

Evaluating AI Chatbots in RL and RLC Circuit Problems: Benefits, Pitfalls, and Student Perceptions

Author(s): Christopher Horne (North Carolina A&T State University); Víctor Robledo-Rella (Tecnologico de Monterrey)

Project Based Electronics Laboratories and Results

Author(s): Joerg Vollrath (University of Applied Science Kempten)

Speaker(s): Joerg Vollrath (University of Applied Science Kempten)

The Music of Electronics: An Innovative Teaching Methodology Using Electric Guitars

Author(s): Chadi Jabbour (Télécom Paris); Dang Pham (Telecom Paris); Reda Mohellebi (Télécom Paris); Karim Kalaia (Telecom Paris)

Speaker(s): Chadi Jabbour (Télécom Paris)

When Polished Code Isn't Proof: A 2020-2025 Code Corpus Study of First-Year Embedded Projects

Author(s): Priit Ruberg (Tallinn University of Technology); Risto Heinsar (Tallinn University of Technology); Peeter Ellervee (Tallinn University of Technology)

Engineering Education Research: Methods & Frameworks (I)

Mon Oct 12, 14:30 – 16:00 · Adonis

Chair(s): John Mitchell (UCL); Alfandika Nyandoro (Regent University)

Peer Instruction After Three Decades: A Critical Review and Research Agenda for AI Augmented Engineering Education

Author(s): David Etor (University of Bristol); Funmilayo Offiong (Glasgow Caledonian University)

Speaker(s): David Etor (University of Bristol)

Reframing Engineering Education Research Through Integrative Frameworks

Author(s): R. Alan (Bucknell University); Jenny Tilsen (Plaksha University); Annie Patrick (Bucknell University); Michael Beach (Bucknell University)

Speaker(s): R. Alan (Bucknell University)

Characterizing the Experiential Learning Environment: A Student-Informed Framework of Prioritized Design Features Across STEM

Author(s): Tela Favaloro (University of California, Santa Cruz)

The Samvāda Framework: A Dialogical Model for Communication Training of Engineering Students

Author(s): Brainerd Prince (Plaksha University); Mhonbeni E Humtsoe (Plaksha University Punjab); Suryaansh S (Plaksha University); Simran Singh (Plaksha University); Niharika Patel (Plaksha University)

Foundations of Programming and Software Testing Education

Mon Oct 12, 14:30 – 16:00 · Athena

Chair(s): Margaret Blackie (Virginia Tech); CK Choi (Michigan Technological University)

Evidence and Trends on Practices, Approaches, and Methodologies for Software Testing Education

Author(s): Matheus Henrique Aristimunha Lé (Universidade Federal de Mato Grosso); Pedro Valle (University of São Paulo); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná); Renan Aranha (USP)

Speaker(s): Estéfany Castillo Ventura (Universidade de São Paulo); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná)

Guided GenAI Integration in STEMI Assessment: Effects on Student Motivation and Achievement

Author(s): Gordan Đurović (University of Rijeka, Faculty of Informatics and Digital Technologies); Martina Holenko Dlab (University of Rijeka); Ivan Tudor (University of Rijeka)

Speaker(s): Gordan Đurović (University of Rijeka, Faculty of Informatics and Digital Technologies)

A Notional Machine and Assessment Tool for Scope Rule Comprehension by Novice Python Programmers

Author(s): Mark Holliday (Western Carolina University)

Speaker(s): Mark Holliday (Western Carolina University)

The Use of Educational Software as a Support Tool in Introductory Programming Education

Author(s): Helena Gomes (Universidade Estadual de São Paulo); Rodrigo Hagstrom (University of São Paulo); Leônidas Brandão (University of São Paulo); Daniel de Carvalho Alves Filho (Universidade de Brasília); Mauricio Henning (Catholic University of Santa Catarina); Estéfany Castillo Ventura (Universidade de São Paulo); Andrei Carniel (Universidade Católica de Santa Catarina)

Speaker(s): Estéfany Castillo Ventura (Universidade de São Paulo)

Analyzing Code Quality Issues and Their Relation with Code Writing Ability in CS1

Author(s): Isabela Vieira Rodrigues (Insper); Rafael Ferrao (Insper); Igor dos Santos Montagner (Insper)

Speaker(s): Igor dos Santos Montagner (Insper)

A Systematic Mapping Study on the Use of Artificial Intelligence in Software Testing Education

Author(s): Matheus Henrique Aristimunha Lé (Universidade Federal de Mato Grosso); Pedro Valle (University of São Paulo); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná); Renan Aranha (USP)

Speaker(s): Estéfany Castillo Ventura (Universidade de São Paulo); Leo Natan Paschoal (Pontifícia Universidade Católica do Paraná)

Special Session on Defining Philosophies of Artificial Intelligence in Engineering Education

Mon Oct 12, 14:30 – 16:00 · Corallino

Author(s): Laura Bottomley (North Carolina State University); Julio Terán (NC State University)

Speaker(s): Laura Bottomley (North Carolina State University)

Student & Instructor Perceptions of Generative AI (I)

Mon Oct 12, 14:30 – 16:00 · Leda

Chair(s): Antonia Christou (Cyprus University of Technology); Maria Sanchez (University of Maryland Baltimore County)

The Fractal Systems Model: A Design Framework for Far Transfer in LLM-Mediated Engineering Education

Author(s): Doug Havard (Chapman University)

Trends and Themes in the Use of ChatGPT in Programming Education: Insights from Topic Modeling, Entity-Based Temporal, and Content Analysis

Author(s): Rex Bringula (Linköping University); Fredrik Heintz (Linköping University)

Speaker(s): Rex Bringula (Linköping University)

A Survey Instrument for Assessing Students' AI and Generative AI Knowledge

Author(s): Aditya Johri (George Mason University); Cory Brozina (Youngstown State University); Akriti Bagale (George Mason University)

Speaker(s): Aditya Johri (George Mason University)

Sociotechnical Imaginaries of ChatGPT in Higher Education: The Evolving Media Discourse

Author(s): Yinan Sun (George Mason University); Ali Unlu (University of Virginia); Aditya Johri (George Mason University)

Speaker(s): Aditya Johri (George Mason University)

Perceived Usefulness, Trust, and Ethical Concern in Student-ChatGPT Interaction in Higher Education

Author(s): Efi Nisiforou (University of Nicosia)

Assessing Critical Use of Generative AI in UI/UX Design Projects

Author(s): Sonia Sahli (Higher Institute of Technological Studies of Sousse); Denis Gillet (EPFL)

Speaker(s): Sonia Sahli (Higher Institute of Technological Studies of Sousse)

Virtual, Augmented & Mixed Reality Learning

Mon Oct 12, 14:30 – 16:00 · Sophia

Chair(s): Kerrie Kephart (University of Maryland Baltimore County); Mary Lou Maher (University of Sydney)

Embedding Extended Reality in Mechanical & Manufacturing Engineering Education: Evidence-Based Feedback for Curriculum Change

Author(s): Johannes Moolman (MTU); Fiona Boyle (Munster Technological University); Joseph Walsh (Munster Technological University)

Speaker(s): Johannes Moolman (MTU)

Virtual Production Line as a Teaching Tool: A VR-Based Laboratory Scenario in Engineering Education

Author(s): Kinga Stecula (Silesian University of Technology)

Speaker(s): Kinga Stecula (Silesian University of Technology)

Extended Reality and Gamification for the Valorization of University Cultural Heritage: The Case Study of the "Filippo Alison" Theatre

Author(s): Mario Casillo (University of Salerno); Liliana Cecere (University of Salerno); Francesco Colace (University of Salerno); Angelo Lorusso (Pegaso University); Domenico Santaniello (University of Salerno); Giusy Strollo (University of Salerno)

Designing and Evaluating Immersive Virtual Reality Laboratories Through Requirements Engineering

Author(s): Soma Datta (University of Houston-Clear Lake); Lory Santiago-Vázquez (University of Houston-Clear Lake); Fanny Odet-Radvay (1UCLy (Lyon Catholic University)); Thanh-Nhat Pham (1UCLy (Lyon Catholic University)); Michelle Alanis (University of Houston-Clear Lake); Abigale Chavez (University of Houston-Clear Lake); Annabelle Lozano (University of Houston-Clear Lake)

A Virtual Reality Approach to Public Speaking Training in Higher Education

Author(s): Elodie Etienne (INRIA Paris); Justin Cho (The Manchester Metropolitan University); Timothy Jung (Manchester Metropolitan University); Michaël Schyns (HEC Liège)

Speaker(s): Elodie Etienne (INRIA Paris)

Focus on Exhibitors & Coffee Break

Mon Oct 12, 16:00 – 16:30 · Akamas Foyer

Assessment Design, Oral Exams & Academic Integrity (II)

Mon Oct 12, 16:30 – 18:00 · Akamas A/B

Chair(s): John Mitchell (UCL); Suman Saha (Pennsylvania State University)

Engineering Education Incorporating in-Vitro Diagnostics: An Impact Assessment of a Biological Systems Engineering Program

Author(s): Siddhant Kumar (Plaksha University); Chaitanya Indira (Plaksha University); Agantuk Saha (Plaksha University); Brainerd Prince (Plaksha University); Sandeep Lekshmanan (Plaksha University); Avanie Mahajan (Plaksha University); Greeshma Tadi (Plaksha University); Trinabh Chakravarty (Plaksha University); Mansha Dixit (Plaksha University)

Measuring Inclusion: How Assessment Design Shapes Participation in Coding Camps

Author(s): Gennaro Iaccarino (Direzione Istruzione e Formazione Italiana); Ilenia Fronza (Free University of Bolzano); Tommi Mikkonen (University of Jyväskylä); Petri Ihantola (University of Jyväskylä)

Speaker(s): Ilenia Fronza (Free University of Bolzano)

Use of an Alternative Final Assessment in a Logic Design Class

Author(s): Laura Bottomley (North Carolina State University)

A Multiagent Architecture Based on LLMs for Exam-Oriented Multiple-Choice Question Generation: A POSCOMP Case Study

Author(s): Jose Robson Araujo Junior (PaqtcPB - UFCG); Kemilli Nicole dos Santos Lima (Universidade Federal de Campina Grande); Leandro Balby Marinho (Universidade Federal de Campina Grande); Livia Campos (Federal University of Campina Grande)

The Design of Oral Exams at Scale in a Data Structures Course

Author(s): Shanon Reckinger (University of Illinois Chicago)

Speaker(s): Shanon Reckinger (University of Illinois Chicago)

Code Plagiarism Detection Pipeline

Author(s): Edvard Pedersen (UiT - The Arctic University of Tromsø); Anne Bosch (UiT The Arctic University of Norway)

Speaker(s): Edvard Pedersen (UiT - The Arctic University of Tromsø)

Capstone & Project-Based Learning (I)

Mon Oct 12, 16:30 – 18:00 · Akamas C

Chair(s): Yen-Lin Han (Seattle University); Gunnar Wolf (Instituto de Investigaciones Económicas UNAM)

Is Collaboration Reciprocal? A Multi-Source Analysis of Peer Interactions in Student Capstones

Author(s): Ying Hung Chen (University of British Columbia); Bowen Hui (University of British Columbia)

Speaker(s): Bowen Hui (University of British Columbia)

Project-Based Curriculum Design for an Introductory UAV Course

Author(s): Abhishek Verma (University of Wisconsin-Stout Polytechnic); Abhimanyu Ghosh (University of Wisconsin-Stout)

Speaker(s): Abhishek Verma (University of Wisconsin-Stout Polytechnic)

Rethinking Capstone Project Supervision: A Humanised Pedagogical Roadmap for Engineering and Compute

Author(s): Mahesha Samaratunga (Queen Mary University of London); Usman Naeem (Queen Mary University of London)

Speaker(s): Mahesha Samaratunga (Queen Mary University of London)

Adoption-Ready Project-Based Learning for Computing Education: The FORAP Framework and a Multi-Scale Project Portfolio

Author(s): Ahmad Suleiman (Rochester Institute of Technology); Jan DeWaters (Clarkson University); David Shepherd (Louisiana State University); Turgay Korkmaz (University of Texas at San Antonio); Faraz Hussain (Clarkson University); Yu Liu (Clarkson University); Daqing Hou (Rochester Institute of Technology)

Speaker(s): Daqing Hou (Rochester Institute of Technology)

Combining Community-Engagement and Entrepreneurial-Mindset Experiences in a Semester-Long Project-Based Technical Computer Science Course

Author(s): Adrian Rusu (University of New Haven); Amalia Rusu (Fairfield University)

Speaker(s): Stephanie Gillespie (University of New Haven); Adrian Rusu (University of New Haven)

Curriculum Design & Workforce Preparation (III)

Mon Oct 12, 16:30 – 18:00 · Aphrodite A

Chair(s): Soma Datta (University of Houston-Clear Lake); Bryan Ranger (Boston College)

Analyzing the Difficulty of Programming Assignments with Interpretable Knowledge Component Metrics

Author(s): Tsvetomila Mihaylova (Aalto University); Jing Fan (Aalto University); Bitu Akram (North Carolina State University); Narges Norouzi (University of California, Berkeley); Peter Brusilovsky (University of Pittsburgh); Juho Leinonen (Aalto University); Arto Hellas (Aalto University)

Speaker(s): Arto Hellas (Aalto University)

Salvar+: Human-Centered Design and User Experience Evaluation of a Mobile Application for First Aid Education

Author(s): Larissa Yuki Carvalho Yamada (Federal Institute of Amazonas); Gustavo Nunes de Oliveira (Federal Institute of Amazonas); Carlos Henrique Lima do Nascimento (Federal Institute of Amazonas); Deborah Castro Vasconcelos (Federal Institute of Amazonas); Jorge Henrique Imbiriba dos Santos (Federal Institute of Amazonas); Manoel Arthur de Freitas Leão (Federal Institute of Amazonas); Arlana Braga da Silva (Federal Institute of Amazonas); Fabiann Matthaues Barbosa (Federal University of Amazonas and Federal Institute of Amazonas)

Speaker(s): Larissa Yuki Carvalho Yamada (Federal Institute of Amazonas)

AI in STEM - a Blessing in Disguise

Author(s): Eran Gur (Azrieli College of Engineering)

Speaker(s): Eran Gur (Azrieli College of Engineering)

MIT FutureMakers: An Innovative Approach to Online AI Education

Author(s): David Kim (Massachusetts Institute of Technology); Aikaterini Bagiati (Massachusetts Institute of Technology); Taniya Mishra (SureStart); Sharifa Alghowinem (MIT Media Lab); Matthew Taylor (MIT Media Lab); Tasneem Burghleh (MIT); Jeff Freilich (Massachusetts Institute of Technology); Selim Tezel (Massachusetts Institute of Technology); Robert Parks (Massachusetts Institute of Technology); Cynthia Breazeal (MIT Media Lab)

Speaker(s): Aikaterini Bagiati (Massachusetts Institute of Technology)

Execution-Evidence-Reasoning (EER): Recalibrating Applied Technical Instruction for Cognitive Rigor and Bounded Operational Viability

Author(s): Emil Salib (James Madison University)

Database & SQL Education (I)

Mon Oct 12, 16:30 – 18:00 · Aphrodite B

Chair(s): Denis Gillet (EPFL); Alfandika Nyandoro (Regent University)

WIP: Exploring Problem-Solving Approaches of Engineers Between Career Stages

Author(s): Anu Singh (The Ohio State University); Elif Miskioğlu (Bucknell University); Kaela Martin (Embry-Riddle Aeronautical University); Adam Carberry (The Ohio State University)

Speaker(s): Adam Carberry (The Ohio State University)

LLMs' Reasoning vs. Students' Reasoning: A Case Study on Learning SQL

Author(s): Laura Farinetti (Politecnico di Torino); Luca Cagliero (Politecnico di Torino); Rossella D'Onghia (Politecnico di Torino)

Speaker(s): Laura Farinetti (Politecnico di Torino)

Teaching SQL to Non-Technical Graduate Students: Lessons from an Inclusive Course Redesign

Author(s): Xiaoying Tu (Carnegie Mellon University); Allison Connell Pensky (Carnegie Mellon University); Sophie le Blanc (Carnegie Mellon University)

Speaker(s): Xiaoying Tu (Carnegie Mellon University)

AI Chatbots as Instructional Partners: Instructor-Facing Uses of an AI-Powered Chatbot in an Introductory Database and Programming Course

Author(s): Shamima Mithun (Purdue University); Rajagopal Sankaranarayanan (Texas A&M University)

Teaching SQL Query Formulation: A Three-Step Heuristics Based Approach

Author(s): Raja Sooriamurthi (Carnegie Mellon University); Xiaoying Tu (Carnegie Mellon University)

How Motivation and Help-Seeking Shape Learning Outcomes in a Database Course

Author(s): Piret Luik (University of Tartu)

Speaker(s): Piret Luik (University of Tartu)

Entrepreneurship & Innovation Education

Mon Oct 12, 16:30 – 18:00 · Adonis

Chair(s): Joe Finney (Lancaster University); Kerrie Kephart (University of Maryland Baltimore County)

GreenComp-Informed Entrepreneurship Education for Engineers: Eco-Preneurial Competences and Intentions Through a Qualitative Lens

Author(s): Antonia Christou (Cyprus University of Technology); Andri Ioannou (Cyprus University of Technology); Deirdre McQuillan (Technological University Dublin); Stylianos Yiatros (Cyprus University of Technology)

Speaker(s): Antonia Christou (Cyprus University of Technology)

The Influence of Personal Student Interest on Capstone Project Outcomes

Author(s): Rafael Ferrao (Insper); Cassia de Oliveira Fernandez (Insper); Luciano Soares (Insper)

Speaker(s): Rafael Ferrao (Insper)

Beyond the Binary: Systems Thinking as Pedagogical Innovations

Author(s): Benjamin Lynch (United States Military Academy); Georgette Mitchell (United States Military Academy)

Speaker(s): Benjamin Lynch (United States Military Academy)

Using the LSEESC Methodology with Technology for Learning Physics Concepts: An Empirical Proposal

Author(s): Erika Cervantes Juárez (Instituto Politécnico Nacional); Daniel Sánchez Guzmán (Instituto Politécnico Nacional)

Speaker(s): Erika Cervantes Juárez (Instituto Politécnico Nacional)

Developing a Qualitative Interview Protocol for Exploring Student Perceptions of Entrepreneurship and Innovation Integration in Engineering Curricula

Author(s): Ayman Naser (Qatar University); Mahmoud Abdulwahed (Qatar University)

Systematic Development of the Engineering Faculty Interview Protocol for Integration of Entrepreneurial Education in Engineering Curricula

Author(s): Ayman Naser (Qatar University); Mahmoud Abdulwahed (Qatar University)

K-12 & Pre-College STEM Outreach (III)

Mon Oct 12, 16:30 – 18:00 · Athena

Chair(s): Margaret Blackie (Virginia Tech); Mark Holliday (Western Carolina University)

Engaging Youth in Engaging Their Peers in Engineering: Findings from a Project Aimed at Promoting Belonging and Preventing Harm

Author(s): Mobina Beheshti (Boston College); Claire Mikulski (Boston College); Yi (Harry) Zhang (Boston College); Julia Wilder (Boston College); Sofia Migon (Boston College); Annick Manseau (Boston College); Asad Faqirzada (Boston College); Michael Kester (Boston College); Avneet Hira (Boston College)

Speaker(s): Sofia Migon (Boston College)

Testing a Metacognitive Activities Instrument with an Online Introductory High School Computing Course

Author(s): David Reeping (University of Cincinnati); Siqing Wei (Youngstown State University); Yunmeng Han (University of Cincinnati); Raj Rao Nadakuditi (University of Michigan)

AI as a New Subject in Upper Secondary School: A Study of Teacher Professional Development Through University Courses

Author(s): Kristina von Hausswolff (Linköping University); Per Norström (KTH Royal Institute of Technology); Gordana Dodig-Crnkovic (Mälardalen University); Christina Björkman (Mälardalen University); Tina Vrieler (Western Norway Research Institute)

Assessing Computational Thinking Development in K-12 Students Through Digital Games: A Systematic Mapping Study

Author(s): Maria Eduarda Bernardes Lopes (Universidade de São Paulo); Gustavo Martins Nunes Avellar (University of São Paulo); Maria Lydia Fioravanti (University of São Paulo); Ellen Barbosa (University of São Paulo)

Speaker(s): Maria Eduarda Bernardes Lopes (Universidade de São Paulo)

Underrepresentation in K-12 CS: A Systematic Literature Review

Author(s): Oliver Tran (Cal Poly); Sreerenjini Namboothiri (Cal Poly); Kevin Mokarapiromya (California Polytechnic State University, San Luis Obispo); Paris Kalathas (Cal Poly San Luis Obispo)

Speaker(s): Oliver Tran (Cal Poly)

Workflow-Focused Approach to K-12 AI Literacy

Author(s): Matti Tedre (University of Eastern Finland); Nicolas Pope (University of Eastern Finland); Henriikka Vartiainen (University of Eastern Finland); Teemu Roos (University of Helsinki)

Speaker(s): Nicolas Pope (University of Eastern Finland)

Measuring and Designing Engagement: VR, Mixed Reality, and AI-Based Analytics

Mon Oct 12, 16:30 – 18:00 • Leda

Chair(s): Lucas Buccafusca (Johns Hopkins University); Igor Verner (Technion - Israel Institute of Technology)

Automated Assessment of Engineering Graduate Attributes Using Large Language Models

Author(s): Antonie Smith (Tshwane University of Technology); Barend Van Wyk (Tshwane University of Technology); Helen Brown (Tshwane University of Technology)

Speaker(s): Antonie Smith (Tshwane University of Technology)

WIP: A Method Focused on Instructional Designers for Designing VR Learning Activities

Author(s): Ludovic MESSINGER (3E Innovation); Federico Tajariol (University of Franche Comte)

WIP: A Constructivist VR Evacuation Training Module for Campus Safety Education-Design Pipeline and Pilot Evaluation

Author(s): Ahmed Mujtaba (Habib University); Sher Ali (Habib University); Farhan Khan (ECE Program, Habib University, Karachi)

From Passive to Immersed: Leveraging Synchronous Virtual Reality to Recapture Student Attention

Author(s): Asad Azemi (University of Maryland Eastern Shore); Lizhou Cao (University of Maryland Eastern Shore); Hung-Fu Chang (University of Indianapolis)

Designing for Enactive Learning in Co-Located Mixed Reality Classrooms: A 4E Vocabulary

Author(s): Krishnan Chandran (Technical University of Dresden); Matthew McGinity (Technische Universität Dresden)

Speaker(s): Krishnan Chandran (Technical University of Dresden)

From Perception to Performance: A Triangulated NLP Strategy for Modeling Student Engagement in Virtual Laboratories

Author(s): Kimberly Cook-Chennault (Rutgers, the State University of New Jersey)

Special Session AI Supported Autoethnography for Research in Engineering and Computing Education

Mon Oct 12, 16:30 – 18:00 · Corallino

Author(s): Jyoti Suhag (Michigan Technological University); Laura Albrant (Michigan Technological University); Michelle Jarvie-Eggart (Michigan Technological University); Lynn Albers (SUNY Maritime College); Leo Ureel (Michigan Technological University)

Student & Instructor Perceptions of Generative AI (II)

Mon Oct 12, 16:30 – 18:00 · Sophia

Chair(s): Andrew Ash (Oklahoma State University); Kaihua Ding (University of Pennsylvania)

Impact of Using AI in Teaching the Engineering Design Cycle for Industry Preparedness

Author(s): Shana Shaw (Texas A&M University); LaTasha Starr (Texas A&M University); Noemi Mendoza (Texas A&M); Tracy Hammond (Texas A and M University)

Speaker(s): Shana Shaw (Texas A&M University)

Beyond Answer-Getting: STEM Students' Reported Uses and Perceptions of Generative AI

Author(s): Ilana Ram (Technion Israel Institute of Technology); Jessica Braudo (Technion Israel Institute of Technology); Lisa Bosman (Purdue University); Eman Ganaïem (Technion Israel Institute of Technology); Olga Chuntov (Technion Israel Institute of Technology)

Psychometric Validation of the AI-BIA Scale Integrating UTAUT and Generative AI Attitude

Author(s): Samuel Rosas-Melendez (Tecnológico de Monterrey); Yara Almanza-Arjona (Tecnológico de Monterrey); Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey); María del Pilar García-Chitiva (Institución Universitaria Politécnico Grancolombiano)

Speaker(s): Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey)

Students' Perceptions and Use of GenAI in Higher Education: Potential Pathways to Employability Skills Development

Author(s): Dejan Ravšelj (University of Ljubljana, Faculty of Public Administration); Aleksander Aristovnik (University of Ljubljana, Faculty of Public Administration)

Welcome Reception

Mon Oct 12, 18:00 – 19:30 · Terrace - Coral Beach Hotel & Resort

Breakfast on Own - Partner Hotels

Tue Oct 13, 6:00 – 8:00

Registration

Tue Oct 13, 7:30 – 17:30 · Akamas Foyer

Curriculum Design & Workforce Preparation (IV)

Tue Oct 13, 8:00 – 9:30 · Akamas C

Chair(s): Inna Shvartsman (Estonian Entrepreneurship University of Applied Sciences); Filip Strömbäck (Linköping University)

From AI-Generated Interfaces to Human-Centered Decisions: A Research-to-Practice Study with Figma Make

Author(s): Jose Marinho (Polytechnic University of Coimbra); Álvaro Santos (Polytechnic University of Coimbra); Cristina Costa (Polytechnic University of Coimbra); Anabela Gomes (Polytechnic University of Coimbra & CISUC)

Speaker(s): Jose Marinho (Polytechnic University of Coimbra)

Human-Centered AI-Enhanced Teaching and Learning - the Helikon Project

Author(s): Alexandra Posekany (TGM Wien XX); William Sprague (HTI Salzburg); Bernhard Aichinger Ganas (TGM - Vienna Institute of Technology); Alexander Hiroma Friedrichkeit (TGM - Vienna Institute of Technology); Oliwier Przewlocki (TGM - Vienna Institute of Technology); Danilo Stoilovski (TGM - Vienna Institute of Technology); Dominik Dolezal (University of Vienna)

Speaker(s): Dominik Dolezal (University of Vienna)

A Multi-Tenant RAG-Based Knowledge Management Platform for Higher Education: Design, Implementation and Evaluation

Author(s): Ma Mingxuan (Peking University); Huidong Qin (Peking University); Kezheng Su (Peking University); XUESONG FAN (Computer Center, Peking University); Jia Yang (Peking University); Hao Ma (Peking University)

Speaker(s): Ma Mingxuan (Peking University)

Beyond Parents and Teachers: How Relationships Activate Engineering Major Choice

Author(s): eugene mahmoud (Purdue University); Diane Patterson (Purdue University); Kyler Blowers (Purdue University); Tram Dang (Purdue University); Amanda Griffith (Wake Forest University); Joyce Main (Purdue University)

Examining the Efficacy of Using a Studio Lab for Integrated Communication Training of Engineering Students

Author(s): Brainerd Prince (Plaksha University); Hasrat Sandhu (Plaksha University); Tanveer Singh (Plaksha University); Ananya Kiran (Plaksha University); Raka Mukherjee (Plaksha University)

Speaker(s): Brainerd Prince (Plaksha University)

Integrating Accessible Learning Labs (ALL): An Exploration of Faculty Experiences

Author(s): Kayla Taylor (Embry-Riddle Aeronautical University); Nicholas Scarangelli (ERAU); Katelyn Merritt (Embry-Riddle Aeronautical University); Asmitha Muthukumar (Embry-Riddle Aeronautical University); Laxima Niure Kandel (Embry-Riddle Aeronautical University, Daytona Beach)

Cybersecurity Education (I)

Tue Oct 13, 8:00 – 9:30 · Akamas A/B

Chair(s): Lucas Buccafusca (Johns Hopkins University); Elodie Etienne (INRIA Paris)

From Prompt to Flag: AI Usage and Critical Thinking Insights in Cybersecurity CTFs

Author(s): Jay Snell (Brigham Young University); Dallan Christensen (Brigham Young University); Derek Hansen (Brigham Young University); Ben Schooley (Brigham Young University)

Speaker(s): Jay Snell (Brigham Young University)

PASS-GAME Lab: A Gamified, Generative AI-Based Cybersecurity Laboratory for Password Security Education

Author(s): Grace LaBelle (University of Michigan - Flint); Oguz Kagnici (Bogazici University); Tyler Judd (University of Michigan - Flint); Ali Arslan (University of Michigan - Flint); Alvin Huseinović (University of Sarajevo); Halil Bisgin (The University of Michigan - Flint); Suleyman Uludag (The University of Michigan - Flint)

Speaker(s): Suleyman Uludag (The University of Michigan - Flint)

Technology-Enhanced Tabletop Exercises for Cybersecurity Education: Lessons Learned

Author(s): Jan Vykopal (Masaryk University); Pavel Celeda (Masaryk University); Martin Horák (Masaryk University); Valdemar Švábenský (University of Pennsylvania)

Speaker(s): Pavel Celeda (Masaryk University)

The Lookalike Threat: Teaching Undergraduates to Recognize and Resist Homoglyph Attacks

Author(s): Yoonsung Cho (Purdue University); Paul Thomas (Purdue University); Devang Patel (Purdue University)

WIP: Addressing the Human Element in Maritime Cybersecurity: A MOOC Integrating Cognitive Biases, NATO Research, and AI-Driven Co-Creation (Work-in-Progress)

Author(s): Yvon Kermarrec (IMT Atlantique); Jamal El-Hachem (Université de Bretagne Sud)

When CTF-Challenges Become Challenging: Student Motivation and Learning

Author(s): Sofie K. Nielsen (IT University of Copenhagen); Louise Carlsen (IT University of Copenhagen); Alessandro Bruni (IT-University of Copenhagen)

Speaker(s): Sofie K. Nielsen (IT University of Copenhagen)

Database & SQL Education (II)

Tue Oct 13, 8:00 – 9:30 · Aphrodite A

Chair(s): Mark Holliday (Western Carolina University); Rajesh Panicker (National University of Singapore)

WIP: A Bachelor of Computing Program That Supports Rapid Evolution and Industry Relevance

Author(s): David Lowe (The University of Sydney); Anthony Kadi (Sydney Polytechnic Institute)

Speaker(s): David Lowe (The University of Sydney)

WIP: Evaluating Generative AI-Driven Automated Feedback and Assessment in SQL Education

Author(s): Pauli Lai (The Hong Kong Polytechnic University); Irene Song (The Hong Kong Polytechnic University); Chen Chen (The Hong Kong Polytechnic University)

Speaker(s): Pauli Lai (The Hong Kong Polytechnic University)

Teaching End-to-End Database Design and Development: A Startup Inspired, User-Story Driven Course Project

Author(s): Raja Sooriamurthi (Carnegie Mellon University); Xiaoying Tu (Carnegie Mellon University)

WIP: A Generative AI Tool to Foster and Assess Authentic Learning: Evidence from an "Intelligent Assessor" in SQL Pedagogy

Author(s): Raja Sooriamurthi (Carnegie Mellon University); Xiaoying Tu (Carnegie Mellon University); Allison Connell Pensky (Carnegie Mellon University)

From SQL Errors to Concept Gaps: An AI-Powered Knowledge Graph Analytics Platform for Diagnostic Feedback

Author(s): Abdulrahman Alrabah (University of Illinois at Urbana-Champaign); Weijian Zhou (University of Illinois at Urbana-Champaign); Xing Gao (University of Illinois at Urbana-Champaign); Abdussalam Alawini (University of Illinois at Urbana-Champaign)

Speaker(s): Abdussalam Alawini (University of Illinois at Urbana-Champaign)

Embedded Systems, Circuits & Hardware Labs (II)

Tue Oct 13, 8:00 – 9:30 · Aphrodite B

Chair(s): Baltasar Fernandez-Manjon (Universidad Complutense de Madrid); Anurag Srivastava (Texas A&M University)

Chat Debugging: An Exploratory Study of Human-AI Collaboration to Debug Analog Circuits

Author(s): John Hu (Oklahoma State University); Andrew Ash (Oklahoma State University)

Speaker(s): Andrew Ash (Oklahoma State University)

From Circuits to Microcontrollers: Scaffolded First-Year EE Labs for Humanitarian Projects

Author(s): Umar Iqbal (Illinois State University); Manu Chaudhary (Illinois State University); Md Shahin Alam (Illinois State University); Jing Wang (Illinois State University); Chaomin Luo (Mississippi State University); Tingjun Lei (University of North Dakota); Timothy Sellers (Mississippi State University); Shahrez Khan (Saba A. Chughtai and Associates)

Speaker(s): Umar Iqbal (Illinois State University)

Hardware-Integrated Programming Education in the AI Era: Shifting Focus from Code Generation to System Design

Author(s): Asad Azemi (University of Maryland Eastern Shore); Fatemeh Vahidnezhad (University of Maryland Eastern Shore); Pedro Valdes (University of Maryland Eastern Shore); Haydar Teymourlouei (University of Maryland Eastern Shore)

Beyond Buttons: Teaching Electronics Through Unconventional Game Controllers in an Experimental Gameplay Course

Author(s): Maicon Tibola (Pontifícia Universidade Católica Do Paraná (PUCPR)); Glaucio Moro (Pontifícia Universidade Católica do Paraná); Rafael Lagos (Pontifícia Universidade Católica do Paraná); Rafael Camargo (Pontifícia Universidade Católica do Paraná); Rodrigo Gonzatto (Pontifícia Universidade Católica do Paraná); Bruno Campagnolo de Paula (Pontifícia Universidade Católica do Paraná); Carlos Silla (Halmstad University)

Speaker(s): Carlos Silla (Halmstad University)

From Learner Signals to Design Signals: A Longitudinal Cluster Analysis of Workforce Engagement in Microelectronics Security Micro-Certifications

Author(s): Laura Cruz Castro (University of Florida); Wanju Huang (Purdue University); Shivangi Bhardwaj (Purdue University); Margaret Wu (Purdue University); Kerrie Douglas (Purdue University); Waleed Khalil (The Ohio State University); Mark Tehranipoor (University of Florida)

Effects of an Embedded Systems Lab Project on Professional Formation

Author(s): Diane Rover (Iowa State University); Mack Shelley (Iowa State University); Phillip H. Jones (Iowa State University); Nicholas D. Fila (Iowa State University); Henry Duwe (Iowa State University)

Speaker(s): Diane Rover (Iowa State University)

Flipped Classrooms & Active Learning

Tue Oct 13, 8:00 – 9:30 · Adonis

Chair(s): John Mitchell (UCL); Suman Saha (Pennsylvania State University)

Improving Student Success in Dynamics Through Coordinated Flipped Instruction

Author(s): Vimal Viswanathan (San Jose State University)

Speaker(s): Vimal Viswanathan (San Jose State University)

WIP: Data-Informed Approaches to Active Learning for Inclusive Student Engagement in Engineering Education

Author(s): Habiba Akter (Queen Mary University of London); Nickos Paltalidis (Queen Mary University of London); Farha Lakhani (Queen Mary University of London); Na Yao (Queen Mary University of London)

Transforming Calculus Education: Augmenting Active Learning with Artificial Intelligence

Author(s): Yikang Shi (Montclair State University); Michelle Zhu (Montclair State University); Liaquat Hossain (Long Island University)

Speaker(s): Yikang Shi (Montclair State University)

From Pre-Learning to in-Class Scaffolding: An Adaptive Flipped Classroom Study in Data Structures and Algorithms

Author(s): Qiong Cheng (University of North Carolina at Charlotte); Rahul Das (University of North Carolina at Charlotte)

Exploring the Influence of Course-Related Beliefs on Engineering Students' Performance in a Flipped CS1 Course

Author(s): Griffin Pitts (North Carolina State University); Ashish Aggarwal (University of Florida)

Game-Based & Gamified Learning (II)

Tue Oct 13, 8:00 – 9:30 · Athena

Chair(s): Bowen Hui (University of British Columbia); Vladislav Ilin (Victoria University of Wellington)

The Game Dynamics of Life: A Gamified Approach to Teaching 21st-Century Skills in Computing Education

Author(s): Elisabeth Øvansen (University of Agder); Tobias Scholz (University of Agder); Andreas Prinz (University of Agder)

Speaker(s): Tobias Scholz (University of Agder)

AI-Enhanced Game-Based Learning for Agile Project Management: A Student-Centered Approach to 21st Century Education

Author(s): Dominik Dolezal (University of Vienna); Lukas Spreitzer (University of Vienna); Yllka Velaj (University of Vienna)

Speaker(s): Yllka Velaj (University of Vienna)

Level Up or Reach Out: Gamification and Engagement Analytics to Support Learners with Low Engagement in a Web Programming Course

Author(s): Usman Naeem (Queen Mary University London); Jo Elliott (Queen Mary University of London); Vindya Wijeratne (Queen Mary University of London); Nora Hoffmann (Queen Mary University of London); Habiba Akter (Queen Mary University of London); Mahesha Samaratunga (Queen Mary University of London); Md Sagor (Queen Mary University of London); Sukhpal Singh Gill (Queen Mary University of London)

Speaker(s): Usman Naeem (Queen Mary University London)

Simplifying Serious Game Validation: An Integrated Tool for Experimental Design and Learning Analytics

Author(s): Tharife Al-Khuffash (Complutense University of Madrid); Julio Santillano Berthilier (Complutense University of Madrid); Cristina Alonso-Fernández (Complutense University of Madrid); Antonio Calvo-Morata (Universidad Complutense de Madrid); Baltasar Fernandez-Manjon (Universidad Complutense de Madrid)

Speaker(s): Baltasar Fernandez-Manjon (Universidad Complutense de Madrid)

Teaching Engineering with Game AI: A Longitudinal Analysis of a Video Game Project Course

Author(s): Johnathan Mell (University of Central Florida); Darryl Roman (University of Central Florida); Noah Ari (University of Central Florida); Kylee Weener (University of Central Florida)

Designing to Learn: An Educational Path for Creating Heritage-Based Serious Games

Author(s): Francesco Colace (University of Salerno); Constanza Fiorella Duarte Petti (University of Salerno); Annachiara Guerra (University of Salerno); Angelo Lorusso (Pegaso University); Michele Pellegrino (University of Salerno); Domenico Santaniello (University of Salerno)

Perspectives on Engineering Education & Research

Tue Oct 13, 8:00 – 9:30 · Leda

Chair(s): Preeti Bajaj (RKERF); Shana Shaw (Texas A&M University)

WIP: A Critical Survey of the Use of Systematic Review in Engineering Education Research (EER)

Author(s): Jennifer Case (Virginia Tech); Margaret Blackie (Virginia Tech)

Speaker(s): Margaret Blackie (Virginia Tech)

WIP: Engineering Faculty Emotions and Academic Cultures of Well-Being - Insights from a Constructivist Grounded Theory Study

Author(s): Kyle Shanachilubwa (University of Georgia); James Huff (University of Georgia); Fatima Anwar Omar (University of Georgia)

Speaker(s): Kyle Shanachilubwa (University of Georgia)

WIP: Inclusive STEAM Learning in the Era of AI: Opportunities and Challenges

Author(s): Rosa Vasconcelos (Minho University); Emilia Araujo (Minho University); Barbara Almeida (Minho University)

WIP: From Technical to Human-Centric: Engineering Identity Formation Through STEM Outreach in Underserved Communities

Author(s): Umawathy Techanamurthy (National University of Malaysia (UKM)); Bee-Yen Toh (Queen's University Belfast)

Speaker(s): Umawathy Techanamurthy (National University of Malaysia (UKM))

WIP: "Did College Change the Way I Think About Engineering?" - Epistemic Belief Shifts Among Early Engineering Students

Author(s): Jobin Varughese (Texas A&M University); LaTasha Starr (Texas A&M University); Kristi Shryock (Texas A&M University)

Special Session: Leveraging Fiber Arts for Introductory Programming Instruction

Tue Oct 13, 8:00 – 9:30 · Corallino

Author(s): Michelle Jarvie-Eggart (Michigan Technological University); Leo Ureel (Michigan Technological University); Jyoti Suhag (Michigan Technological University); Anastasia Rynearson (Campbell University); Lynn Albers (SUNY Maritime College); Anne Lucietto (Purdue University); Sheryl Sorby (University of Cincinnati); Gloria Kim (University of Florida); Sigrid Berka (University of Rhode Island)

Student & Instructor Perceptions of Generative AI (III)

Tue Oct 13, 8:00 – 9:30 · Sophia

Chair(s): Kerrie Kephart (University of Maryland Baltimore County); Yanjun Yan (Western Carolina University)

Understanding Teachers' Engagement in GenAI-Supported Learning Analytics in Higher Education: Implications for Student Learning Outcomes

Author(s): Dejan Ravšelj (University of Ljubljana, Faculty of Public Administration); Damijana Keržič (University of Ljubljana); Aleksander Aristovnik (University of Ljubljana, Faculty of Public Administration)

Detecting Design Principle Violations in Student OSS Pull Requests Using an LLM-Based Analysis

Author(s): Aarya Rajaju (North Carolina State University); Edward Gehringer (North Carolina State University); Sai Vineel Reddy Marreddy (North Carolina State University); Saisumanth Tallapragada (North Carolina State University); Chandrakant Koneti (North Carolina State University)

Speaker(s): Edward Gehringer (North Carolina State University)

Can Large Language Models Be Effective Tutors? Evaluating Pedagogical Behaviors and Student Learning Outcomes

Author(s): Eugene Park (Massachusetts Institute of Technology); Daniel Wendel (Massachusetts Institute of Technology); Grace Lin (Massachusetts Institute of Technology); Sharifa Alghowinem (MIT Media Lab); Cynthia Breazeal (MIT Media Lab)

Speaker(s): Grace Lin (Massachusetts Institute of Technology)

Prompt Engineering as a Computational Design Practice in Architectural Education

Author(s): Francesco Colace (University of Salerno); Marco Lombardi (Università degli Studi di Salerno); Angelo Lorusso (Pegaso University); Domenico Santaniello (University of Salerno); Pietro Giuseppe Strollo (University of Salerno); Carmine Valentino (University of Salerno)

Less in One Prompt, More in the Plan: LLM Lesson-Design Strategy for STEM Education

Author(s): Qixin Gao (Northeastern University); Feng Wang (Liberty University); Lixin Gao (University of Massachusetts at Amherst)

Speaker(s): Lixin Gao (University of Massachusetts at Amherst)

Poster Session (II)

Tue Oct 13, 9:30 – 10:30 • Christiaan Barnard Foyer

A Tool-Based Method to Create Immersive Virtual Reality Learning Activities

Author(s): Ludovic MESSINGER (3E Innovation)

Speaker(s): Ludovic MESSINGER (3E Innovation)

Gamification to Support Student Engagement and Self-Regulated Learning in the Large Language Model Era

Author(s): Rosemary Clyne (Queen Mary University of London)

Speaker(s): Rosemary Clyne (Queen Mary University of London)

How Engineering Students Use Large Language Models: A Mixed-Methods Study

Author(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College); Pabbathreddy Animesh Reddy (NALLA MALLA REDDY Engineering COLLEGE); Divya Nalla (Nalla Malla Reddy Engineering College)

Speaker(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College)

Designing LLM-Resilient Assessments in Engineering Education

Author(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College); Pabbathreddy Animesh Reddy (NALLA MALLA REDDY Engineering COLLEGE); Anvesh Nookala (Nalla Malla Reddy Engineering College); Divya Nalla (Nalla Malla Reddy Engineering College)

Speaker(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College)

Using GenAI Better, Not More: A Multi-Course Evaluation of a Lightweight Scaffolded AI Lab

Author(s): Ethan Dickey (Purdue University)

Speaker(s): Ethan Dickey (Purdue University)

Instructional Governance by Design: A Framework for AI in Computing Education

Author(s): Ethan Dickey (Purdue University)

Speaker(s): Ethan Dickey (Purdue University)

AI in Data Visualization Education: Teaching, Learning, Decision-Making, and Trust

Author(s): Vetria Byrd (James Madison University); Carolina Veiga (James Madison University); Brie Mingo (James Madison University); Nadia Corea (James Madison University); Trent DeRosa (James Madison University)

Speaker(s): Vetria Byrd (James Madison University)

Redesigning Authentic Assessment to Enable Critical AI Literacy in Engineering Education: From AI Prohibition to Responsible Engagement with Large Language Models

Author(s): Salma Alarefi (University of Leeds)

Navigating the IRB: A Primer for Exempt Research Projects

Author(s): Alison Polasik (Campbell University); Rebecca Reck (University of Illinois Urbana-Champaign)

Speaker(s): Rebecca Reck (University of Illinois Urbana-Champaign)

Beyond the Research Question: Managing Research Projects for Success

Author(s): Rebecca Reck (University of Illinois Urbana-Champaign); Alison Polasik (Campbell University)

Speaker(s): Rebecca Reck (University of Illinois Urbana-Champaign)

A Formal Model for Informal Peer-to-Peer Mentorship and Skill-Building Through Undergraduate Student-Designed and Student-Taught Experiential Learning

Author(s): Tela Favaloro (University of California, Santa Cruz)

STEPS: An AI-Powered Platform for Scaffolded Problem Solving in Introductory STEM Courses

Author(s): Alessandra Napoli (Stanford University); Joshua Arens (Stanford University); Kiana Fathinezhad (Stanford University)

Speaker(s): Alessandra Napoli (Stanford University)

WIP: Evaluating Student Problem-Solving Quality in an LLM-Based Tutoring System

Author(s): Joshua Arens (Stanford University); Kiana Fathinezhad (Stanford University); Alessandra Napoli (Stanford University)

Speaker(s): Alessandra Napoli (Stanford University)

SOLO-to-Visualization Competency Measurement System - First Step

Author(s): Vetrica Byrd (James Madison University); Carolina Veiga (James Madison University)

Enhancing Dental Education Through Agentic AI for Improving Student Detection of Tonsilloliths on Panoramic Radiographs

Author(s): Erika Germinario (Creighton University); Niranzena Panneer Selvam (Creighton University); Sonia Rocha-Sanchez (Creighton University); Jillian Wallen (Creighton); Macy Callahan (Creighton); Sherri Weitz-Harms (Creighton University); Waseq Rahman (Creighton University); Praveenkumar Kondikoppa (Google); Shreyas Jagadeep Shete (Cognizant); Steven Fernandes (Creighton University)

Speaker(s): Erika Germinario (Creighton University)

WIP: Designing Belonging into the STEM First-Year Experience: Translating Research into a Multicomponent Program

Author(s): Terrell Strayhorn (Virginia Union University)

Poster: A Carbon-Aware Framework for Greener Opportunistic Networks

Author(s): Sara Elsinger (American University in Cairo); Sherif Aly (American University in Cairo); Soumaia Al Ayyat (The American University in Cairo); Mirna Elbestar (American University in Cairo)

Speaker(s): Soumaia Al Ayyat (The American University in Cairo)

AI Tutors, Chatbots & Virtual Teaching Assistants (I)

Tue Oct 13, 10:30 – 12:00 • Akamas A/B

Chair(s): Abhishek Mahesh Appaji (A-Collective / IEEE Education Society); Kerrie Kephart (University of Maryland Baltimore County)

Learning with AI as a Co-Designer: Instructional Design for Human-AI Co-Construction in the Large Language Model Era

Author(s): Panayiota Diakou (University of Cyprus); Charoula Angeli (University of Cyprus)

Speaker(s): Panayiota Diakou (University of Cyprus)

Evaluation of an LLM-Based Virtual Tutor as a Sparring Learning Partner for Students in Higher Education Computer Science

Author(s): Dominik Deimel (TH Köln); Artur Seibel (University of Applied Sciences Cologne (th Köln)); Irma Lindt (TH Köln)

Speaker(s): Dominik Deimel (TH Köln)

Training Engineering Teaching Assistants to Promote Active Learning Strategies and an Entrepreneurial Mindset

Author(s): Emma Riese (KTH Royal Institute of Technology); Mariya Suleman (Arizona State University); Medha Dalal (Arizona State University)

Speaker(s): Emma Riese (KTH Royal Institute of Technology)

Comparative Analysis of Static, Adaptive, and Agentic RAG Strategies for LLM-Based Online Tutoring

Author(s): Shuo Zhang (University of Glasgow); Ubaid Ahmed (University of Glasgow); Sajjad Hussain (University of Glasgow); Ahmed Zoha (University of Glasgow); Ayush Agarwal (University of Glasgow)

Speaker(s): Shuo Zhang (University of Glasgow)

Toward More Human Virtual Learning Environments: A Systematic Review of Chatbots with Sentiment Analysis

Author(s): Isadora Santos (FURG); Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo); Roberto Achkar (Universidade Federal do Rio Grande); Regina Barwaldt (Federal University of Rio Grande (FURG)); Helida Santos (Universidade Federal do Rio Grande)

Speaker(s): Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo)

The PEER HELPER Training Chatbot for Scalable Peer Advisor Training in Engineering Programs

Author(s): Yilin Zhang (University of Florida); Bruce Carroll (University of Florida); Kent Crippen (University of Florida); Jinnie Shin (University of Florida)

Speaker(s): Yilin Zhang (University of Florida)

Curriculum, Assessment, and Student Success in Introductory Programming

Tue Oct 13, 10:30 – 12:00 • Akamas C

Chair(s): Shana Shaw (Texas A&M University); Kinga Stecula (Silesian University of Technology)

WIP: Rethinking Assessment in Introductory Programming Courses for Engineers Using a Two-Stage Approach

Author(s): Kwansun Cho (University of Florida); Saira Anwar (Texas A&M University)

Making Room for Parallel and Distributed Computing in CS1: Approaches, Tradeoffs, and Faculty Effort

Author(s): April Crockett (Tennessee Technological University); Gerald Gannod (Tennessee Technological University); Xiaoyuan Suo (Webster University); Chris Bourke (University of Nebraska-Lincoln); Mary Smith (Hawaii Pacific University); Srishti Srivastava (University of Southern Indiana); David Bunde (Knox College); Jaime Spacco (Knox College); Michelle Zhu (Montclair State University); Jiayin Wang (Montclair State University); Neena Thota (University of Massachusetts Amherst)

Beyond CS1: Longitudinal Effects of Student-Selected Experience-Based Grouping on Success and Persistence

Author(s): April Crockett (Tennessee Technological University); Gerald Gannod (Tennessee Technological University)

WIP: A Beginner's API: Revising the Java API to Support Introductory Programming Students

Author(s): Ethan Gulley (University of Oklahoma); Sean Mackay (University of Oklahoma); Deborah Trytten (University of Oklahoma)

Speaker(s): Ethan Gulley (University of Oklahoma)

Engineering Explorations: A Course Model for Building Student Agency in Engineering

Author(s): Rebecca Thomas (Bucknell University); Sarah Appelhans (Lafayette College, United States of America); Jenny Tilsen (Bucknell University); Michael Thompson (Bucknell University)

Speaker(s): Rebecca Thomas (Bucknell University)

Diversity, Equity, Accessibility & Inclusion in Engineering (I)

Tue Oct 13, 10:30 – 12:00 • Aphrodite A

Chair(s): Yen-Lin Han (Seattle University); Doug Havard (Chapman University)

Female Undergraduates in Active Learning STEM Environments: A Systematic Review

Author(s): Amanda Fontes (Inteli); Henrique Mohallem Paiva (Inteli - Institute of Technology and Leadership); Thamyras Sugahara (UNIFESP); Lilian Berton (Federal University of São Paulo (UNIFESP))

Speaker(s): Henrique Mohallem Paiva (Inteli - Institute of Technology and Leadership)

What Motivates Women in the United States and Sweden to Study Technology?

Author(s): Allison Liu (University of Michigan - Ann Arbor); Anna Eckerdal (Uppsala University)

Speaker(s): Anna Eckerdal (Uppsala University)

Women's Pathways into Computing Doctoral Programs: Motivations and Experiences Across Undergrad Contexts

Author(s): Atayliya Irving (University of Florida); Alea Atkinson (University of Florida); Jeremy Waisome (University of Florida)

Speaker(s): Atayliya Irving (University of Florida)

A Scoping Review of Women in the Engineering Workplace

Author(s): Fatima Anwar Omar (University of Georgia); Kyle Shanachilubwa (University of Georgia); James Huff (University of Georgia); Chima Umeaku (University of Georgia); Rachel Figard (University of Georgia); Nathaniel Hunsu (University of Georgia)

Speaker(s): Fatima Anwar Omar (University of Georgia)

Differences in Collaboration Patterns Across Genders

Author(s): Ying Hung Chen (University of British Columbia); Bowen Hui (University of British Columbia)

Speaker(s): Bowen Hui (University of British Columbia)

Qualitative Evaluation of Automatic Speech Recognition Integrated with Sign Language Avatars in Accessible Video Players: Interpreter Perspectives

Author(s): Venilton Falvo Jr (University of São Paulo (USP)); Thiago Valverde (University of São Paulo); Felipe Oliveira (University of São Paulo); Catherine Martins Falvo (University of Araraquara); Anderson Marcolino (Federal University of Paraná); Ellen Barbosa (University of São Paulo)

Speaker(s): Gustavo Soad (University of São Paulo (ICMC USP))

Embedded Systems, Circuits & Hardware Labs (III)

Tue Oct 13, 10:30 – 12:00 · Aphrodite B

Chair(s): Maria Sanchez (University of Maryland Baltimore County); Sonia Vieira (Alasala)

WIP: Online Experiment and Auto-Evaluation in Computer Hardware Experiment Teaching

Author(s): ShanShan Li (Tsinghua University); Ninghan Zheng (Tsinghua University); Yuchao Gao (Tsinghua University); Xiaojun Wu (Tsinghua University); Yijiang Jin (Tsinghua University)

Speaker(s): ShanShan Li (Tsinghua University)

WIP: Sociotechnical Integration in Introductory Circuits: Instructor Perspectives

Author(s): Susan Lord (University of San Diego); Cynthia Finelli (University of Michigan)

Speaker(s): Susan Lord (University of San Diego)

WIP: Use of Analog FPGA Technology for Introductory Microelectronics Circuits

Author(s): Kevin Kornegay (Morgan State University); Marc Conn (Morgan State University)

Speaker(s): Kevin Kornegay (Morgan State University)

Research-Embedded Professional Development to Sustain Computer Science Integration in Rural Schools

Author(s): Diana Piccolo (Missouri State University); Razib Iqbal (Missouri State University); Logan Ross (Joplin High School); Sandy Branstetter (Walnut Grove High School)

Speaker(s): Diana Piccolo (Missouri State University)

Reexamining Flipped Instruction in Circuits Courses Through a Learning-Theoretic Lens: A Scoping Review

Author(s): Chandra Kumar Galaju (University of Florida); Gloria Kim (University of Florida)

Open Hardware as a Catalyst for Sustainable Engineering and Lifelong Learning in Higher Education

Author(s): Hector Espinoza-Roman (Fundación Universitaria Antonio de Arévalo); Libis Valdez Cervantes (Fundación Universitaria Antonio de Arévalo (Unitecnar)); Maria Larrondo-Petrie (Florida Atlantic University & LACCEI); Juan Sánchez-Gómez (Universidad de los Andes); Johon Gutierrez (Johon Gutierrez Jaraba); Luis Alberto Cruz Salazar (Universidad Antonio Nariño)

Speaker(s): Hector Espinoza-Roman (Fundación Universitaria Antonio de Arévalo)

Emerging Topics & Innovations in Engineering and Computing Education (IV)

Tue Oct 13, 10:30 – 12:00 · Athena

Chair(s): Gabriel Rafols (Federal University of Mato Grosso do Sul); Umawathy Techanamurthy (National University of Malaysia (UKM))

WIP: A Brand-New Course Unveiling and Resource Navigation Designed for General Computer Literacy Course

Author(s): Jinghan Liu (Tsinghua University); Xiu Li (Tsinghua University)

Speaker(s): Jinghan Liu (Tsinghua University)

WIP: Plausibility Judgments in Young People's Search Strategies in AI-Supported Internet Search Processes

Author(s): Jasmin Wallner (KPH Vienna/Lower Austria); Sonja Gabriel (KPH Vienna and Lower Austria)

WIP: Addressing Student Needs in Engineering Education Through the Design of a Virtual Battery Laboratory

Author(s): Nicole Klewicz (University of Wuppertal); Heiko Fechtner (University of Wuppertal); Sophia Gavryushina (University of Wuppertal); Benedikt Schmuelling (University of Wuppertal)

WIP: MIT PATH: Exploring New Pathways for AI Training and Hiring

Author(s): Andrés Felipe Salazar-Gómez (Massachusetts Institute of Technology); Aikaterini Bagiati (Massachusetts Institute of Technology); Katherine Moore (Massachusetts Institute of Technology); Grace Lin (Massachusetts Institute of Technology); Eric Klopfer (Massachusetts Institute of Technology); Cynthia Breazeal (MIT Media Lab)

Speaker(s): Andrés Felipe Salazar-Gómez (Massachusetts Institute of Technology)

WIP: Flipping Tables: How Instructors Can Use AI to Create Classes

Author(s): James Anderson (University of South Florida)

Emerging Topics & Innovations in Engineering and Computing Education (V)

Tue Oct 13, 10:30 – 12:00 • Adonis

Chair(s): Jacqueline van Muijlwijk (Vrije Universiteit Amsterdam); Justice Walker (University of Maryland, College Park)

From Participation to Proof: Blockchain-Issued Verifiable Micro-Credentials in an Open Summer School Ecosystem

Author(s): Victor Holotescu (Politehnica University of Timisoara); Diana Andone (Politehnica University of Timisoara); Andrei Ternauciu (Politehnica University Timisoara); Radu Vasu (Politehnica University of Timisoara); Carmen Holotescu ("Ioan Slavici" University)

Speaker(s): Diana Andone (Politehnica University of Timisoara)

Beyond Correctness: Evaluating the Pedagogical Quality of LLM-Generated Circuit Explanations

Author(s): Kaustubh Harnoor (University of Maryland)

Speaker(s): Kaustubh Harnoor (University of Maryland)

WIP: Curricular Design for Human-Centered AI Algorithm Development in a Biomedical Imaging Course

Author(s): Bryan Ranger (Boston College); Avneet Hira (Boston College)

WIP: A Preliminary Evaluation of AI-Generated Explanations for Training Applications with Initial Work Toward Lifeguard Instruction

Author(s): Gabriel Borg (University of Malta); Keith Azzopardi (University of Malta); Matthew Montebello (University of Malta); Vanessa Camilleri (University of Malta)

Speaker(s): Gabriel Borg (University of Malta)

WIP: The Development of a Lab Series to Explain Concepts in Reconfigurable Computing Practices

Author(s): Alexander Burkholder (Ohio Northern University); Thomas Callis (Ohio Northern University); Kaden Wince (Ohio Northern University); Firas Hassan (Ohio Northern University)

Speaker(s): Firas Hassan (Ohio Northern University)

WIP: Student Perspectives of Asset-Based Learning in Computer Science

Author(s): Wendy Chi (ABC Evaluation & Research); Sarah Hug (Colorado Evaluation and Research Consulting); Stephanie Arnett (New Mexico State University)

Engineering Education Research: Methods & Frameworks (II)

Tue Oct 13, 10:30 – 12:00 • Leda

Chair(s): Krishnan Chandran (Technical University of Dresden); Antonia Christou (Cyprus University of Technology)

WIP: Practical Workshops for Fostering Systems Thinking in Industrial Engineering Education

Author(s): Igor Verner (Technion - Israel Institute of Technology); Moshe Greenholts (Technion - Israel Institute of Technology); Uzi Rosen (Technion - Israel Institute of Technology); Alex Polishuk (Technion Israel Institute of Technology); Alex Blekhan (Technion - Israel Institute of Technology)

How Students Use AI: A Qualitative Study of Prompt Intentions

Author(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology)

Speaker(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology)

Exploring Intercultural Communication as a System-Level Influence on Engineering Problem Solving

Author(s): Sigrid Berka (University of Rhode Island); Gloria Kim (University of Florida); Araceli Martínez-Ortiz (University of Texas at San Antonio); Yanjun Yan (Western Carolina University)

Translating Situated Learning Theory to Heterogeneous Computer Science Education: A Differentiated Pedagogy Framework

Author(s): Seetha Parameswaran (Birla Institute of Technology and Science); Ashish Narang (BITS Pilani); Nishit Narang (Birla Institute of Technology and Science)

Speaker(s): Seetha Parameswaran (Birla Institute of Technology and Science)

The AI Safari: A Narrative-Driven Meta-Pedagogical Framework for Professional Continuous Education

Author(s): Robert Hortschitz (MOGI business creation company GmbH); Birgit Pohn (University of Applied Sciences Technikum Wien); Dominik Dolezal (University of Vienna)

Speaker(s): Robert Hortschitz (MOGI business creation company GmbH)

Effects of Gen AI Usage on Problem Solving Skill Acquisition

Author(s): Michael Crocco (Monash University); Rajendran Parthiban (Monash University Sunway Campus)

Speaker(s): Michael Crocco (Monash University)

Panel Session: Transforming Engineering Education-the Engineering Mindset Report

Tue Oct 13, 10:30 – 12:00 • Corallino

Chair(s): Sheryl Sorby (University of Cincinnati)

Author(s): Euan Lindsay (Aalborg University); Mary Raber (Michigan Technological University); Sheryl Sorby (University of Cincinnati); Karan Watson (Texas A&M University); Lance Perez (University of Nebraska-Lincoln); Gary Bertoline (Purdue University)

Speaker(s): Sheryl Sorby (University of Cincinnati)

Student & Instructor Perceptions of Generative AI (IV)

Tue Oct 13, 10:30 – 12:00 • Sophia

Chair(s): Asad Azemi (University of Maryland Eastern Shore); Gunnar Wolf (Instituto de Investigaciones Económicas UNAM)

Prompting Strategies and Learning Perception in Generative AI Interactions for Teaching Numerical Methods Background

Author(s): Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey); María del Pilar García-Chitiva (Institución Universitaria Politécnico Gran Colombiano)

Speaker(s): Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey)

This is Clear, Right? Measuring Spatial Deixis Ambiguity in CS Lectures with a Validated LLM Assistant Rater

Author(s): Jason Weber (University of California, Irvine); Isabela Figueira (University of California, Irvine); Matthew Elniski (University of California, Irvine); Kyle Son (University of California, Irvine); Stacy Branham (University of California, Irvine); Jennifer Wong-Ma (University of California Irvine)

Developing Programmers' Sensemaking of Recursion with a LLM

Author(s): Jesse Eickholt (Central Michigan University); Jennifer Weible (Central Michigan University)

Speaker(s): Jesse Eickholt (Central Michigan University)

Developing and Validating Perceived Learning Outcomes Scale for Generative AI-Supported Higher Education

Author(s): Ritu Sharma (Indian Institute of Technology Indore); Sanjram Premjit Khanganba (Indian Institute of Technology Indore)

Speaker(s): Ritu Sharma (Indian Institute of Technology Indore)

Assessing the Environmental Impact of Deploying a GenAI-Powered Educational System

Author(s): Harshith Lanka (Georgia Institute of Technology); Zhixian Christopher Liding (Georgia Institute of Technology); Megha Suresh (Georgia Institute of Technology); Tracy Xie (Georgia Institute of Technology); Nimisha Roy (Georgia Institute of Technology); Rodrigo Borela (Georgia Institute of Technology)

Keynote - Karen Colbert

Tue Oct 13, 12:00 – 13:00 • Akamas A/B

Chair(s): Rosa Vasconcelos (Minho University)

Tuesday Lunch

Tue Oct 13, 13:00 – 14:00

Cybersecurity Education (II)

Tue Oct 13, 14:00 – 15:30 • Akamas C

Chair(s): Asad Azemi (University of Maryland Eastern Shore); Campbell Bego (University of Louisville)

GenAI for CV Optimization and ATS-Style Self-Assessment: A Cybersecurity Case Study

Author(s): Argyris Konstantinou (Open University of Cyprus); Eliana Stavrou (Open University of Cyprus)

Speaker(s): Eliana Stavrou (Open University of Cyprus)

WIP: Broadening Participation Through Cross-Institutional and Cross-Disciplinary Undergraduate Research Training and Mentoring in AIoT Cybersecurity

Author(s): Thitima Srivatanakul (York College); Shucheng Yu (Yeshiva University); Abu Kamruzzaman (York College CUNY); Jiarui Li (Stevens Institute of Technology); Danyang Zhang (The City University of New York); Eric Tyrer (York College, CUNY); Alvaro Restrepo (York College)

Speaker(s): Thitima Srivatanakul (York College)

Surveying the Landscape of Introductory Cybersecurity Courses in the United States of America

Author(s): Jeffrey Yackley (University of Michigan - Flint); Johns Hopkins (University of Michigan - Flint); Aidan Gitschlag (University of Michigan - Flint)

Speaker(s): Jeffrey Yackley (University of Michigan - Flint)

CyberBridge: Bridging the Gap Between Cybersecurity Education and Industry

Author(s): Arthur Nijdam (Lund University); Paul Wagner (Lund University); Sara Ramezani (Karlstad University)

Speaker(s): Arthur Nijdam (Lund University)

WIP: Educating Students on Kubernetes-Related Policy Violations: Can We Use Static Application Security Testing?

Author(s): Akond Rahman (Auburn University); Hossain Shahriar (University of West Florida); Fan Wu (Tuskegee University)

Speaker(s): Akond Rahman (Auburn University)

Embedded Systems, Circuits & Hardware Labs (IV)

Tue Oct 13, 14:00 – 15:30 · Aphrodite B

Chair(s): Panayiota Diakou (University of Cyprus); Shana Shaw (Texas A&M University)

WIP: When Things Break: Learning from System Breakdowns in IoT Project-Based Learning

Author(s): Aziz Shekh-Abed (Rupp Academic Center)

WIP: Chat-Debugging: Large Language Model as a Hardware Debugging Assistant

Author(s): Andrew Ash (Oklahoma State University); John Hu (Oklahoma State University)

Speaker(s): Andrew Ash (Oklahoma State University)

WIP: Innovative Experimental Teaching Scheme for Congestion Control Based on P4 Programmable Switches

Author(s): Ninghan Zheng (Tsinghua University); Chengbin Quan (Tsinghua University); Yuchao Gao (Tsinghua University); Feiran Qin (Tsinghua University); Guangye Zhao (Tsinghua University); Shining Zhang (Tsinghua University)

Speaker(s): Chengbin Quan (Tsinghua University)

A Dual-Track AI-Assisted Adaptive Learning Platform for Embedded Systems Education

Author(s): Heyuan Chen (National University of Singapore (Chongqing) Research Institute); Bowen Pan (NUS (Chongqing) Research Institute); Rajesh Panicker (National University of Singapore)

Speaker(s): Rajesh Panicker (National University of Singapore)

WIP: Integrating Circuits, Electromagnetics, and Differential Equations in a Second-Year Engineering Foundations Course

Author(s): Bryan Ranger (Boston College); Matthew Herkins (Boston College); Avneet Hira (Boston College); Siddharta Govindasamy (Boston College)

WIP: Engineering Students' Perceptions and Use of AI Tools in Two Junior-Level Circuits Courses

Author(s): Saharnaz Baghdadchi (UC San Diego); Marko Lubarda (University of California San Diego)

Emerging Topics & Innovations in Engineering and Computing Education (VI)

Tue Oct 13, 14:00 – 15:30 · Adonis

Chair(s): CK Choi (Michigan Technological University); David Etor (University of Bristol)

WIP: Design of an Evaluation of a Multi-Semester Course Focused on Developing Student Agency

Author(s): Michael Thompson (Bucknell University); Michael Beach (Bucknell University); Rebecca Thomas (Bucknell University); R. Alan Cheville (Bucknell University)

Speaker(s): Michael Thompson (Bucknell University)

WIP: Critical Thinking and Computational Thinking in Programming: An Exploratory Comparison Across Technological Eras

Author(s): Maryam Multani (University of Florida); Laura Cruz Castro (University of Florida)

WIP: Lessons Learned in Exploring Student Choices Between Block-Based and Text-Based Assembly Programming Interfaces

Author(s): Florian Wörster (University of Vienna); Lukas Ahrenberg (Aalto University)

WIP: Transitions in Triple Process Theory While Designing

Author(s): Sonia Vieira (Alasala); Udo Kannengiesser (University of Augsburg); John Gero (University of North Carolina at Charlotte)

Speaker(s): Sonia Vieira (Alasala)

WIP: Bootstrapping Deep Learning by Implementing Meaningful Failure Guidelines in a Mechanical Engineering Laboratory Course

Author(s): Tathiana Moratti (University of Georgia); Runu Das (University of Georgia); Han Jin (University of Georgia); Mathew Baby (University of Georgia); Beshoy Morkos (University of Georgia)

Knowing the Rules is Not Enough: Student Regulatory Awareness and Use of GenAI in Higher Education

Author(s): Lasse Bischof (University of Applied Sciences and Arts Hannover); Eva-Maria Schön (University of Applied Sciences Emden Leer); Maria Rauschenberger (University of Applied Sciences Emden Leer); Michael Neumann (Hochschule Hannover)

Speaker(s): Michael Neumann (Hochschule Hannover)

K-12 & Pre-College STEM Outreach (IV)

Tue Oct 13, 14:00 – 15:30 • Akamas A/B

Chair(s): Anna Eckerdal (Uppsala University); Elodie Etienne (INRIA Paris)

WIP: Pre-College Immersion as a Pipeline Strategy for Computing and Engineering Education in the LLM Era

Author(s): Jonathan Browning (Queen's University Belfast); TJ Cosgrove (The Queen's University Belfast); Neil Anderson (Queen's University Belfast)

Speaker(s): Jonathan Browning (Queen's University Belfast)

WIP: Examining the Alignment of App Scope and Prompt Intent in Youth Coding Environments

Author(s): Luis Corral (ITESM Campus Queretaro); Ilenia Fronza (Free University of Bolzano); Tommi Mikkonen (University of Jyväskylä); Madalina Ciobanu (Free University of Bolzano)

Speaker(s): Ilenia Fronza (Free University of Bolzano)

WIP: PromptAloud: A Collaborative Agentic System for Middle School Prompt Engineering

Author(s): Panhapiseth Lim (The University of Texas Permian Basin); Priyanka Kumar (Computer Science); Justin Poole (The University of Texas Permian Basin); Amruth Kumar (Ramapo College of New Jersey)

Speaker(s): Priyanka Kumar (Computer Science)

Little Language Machine: Bringing K-12 Engineering Education to the Language Model Era

Author(s): Nicolas Pope (University of Eastern Finland); Jukka Lehtoranta (University of Eastern Finland); Henriikka Vartiainen (University of Eastern Finland); Teemu Roos (University of Helsinki); Matti Tedre (University of Eastern Finland)

Speaker(s): Nicolas Pope (University of Eastern Finland)

Enhancing STEM Attitudes Through Tangible Computing: A Case Study in Malaysian Secondary Schools

Author(s): Lorraine Underwood (Lancaster University); Elisa Rubegni (Lancaster University); Tze Ying Sim (Sunway University); Kier Palin (Lancaster University); Lynne Blair (Lancaster University); Sian Lun Lau (Sunway University); Joe Finney (Lancaster University); Steve Hodges (Lancaster University); Tom Ball (Lancaster University)

Speaker(s): Lorraine Underwood (Lancaster University)

Reflective Practice and AI Adoption in Engineering and Computing Education

Tue Oct 13, 14:00 – 15:30 • Aphrodite A

Chair(s): Abdu Arslanyilmaz (Youngstown State University); Doug Havard (Chapman University)

Patterns of Learner-AI Interaction and Academic Performance in an Object-Oriented Programming Course

Author(s): Marina Lepp (University of Tartu)

Speaker(s): Marina Lepp (University of Tartu)

Adoption of AI Tools in an Experiential IT Course: Insights from Living Lab (LL) Projects

Author(s): Clay Hampton (Purdue University); Shamima Mithun (Purdue University)

When Does Naming Reflect Understanding? An Analysis of Function-Naming Behavior and Coding Performance

Author(s): Hannes Fant (Aalto University); Juha Sorva (Aalto University); Arto Hellas (Aalto University)

Speaker(s): Arto Hellas (Aalto University)

WIP: From AI Tools to Reflective AI Learning

Author(s): Anne Uukkivi (TTK University of Applied Sciences)

Speaker(s): Anne Uukkivi (TTK University of Applied Sciences)

Reflection Alone is Not Enough: Feedback Supported Reflection Improves Challenge Mindset

Author(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology)

Speaker(s): Peter Ruijten-Dodoiu (Eindhoven University of Technology)

WIP: A Data-Informed, Multi-Domain Framework for Reflection Among University Engineering Learners

Author(s): Kerrie Kephart (University of Maryland Baltimore County); Surely Akiri (University of Maryland, Baltimore County); Maria Sanchez (University of Maryland Baltimore County); Andrea Kleinsmith (UMBC); Cynthia Wagner (University of Maryland, Baltimore County)

Software Engineering Education (I)

Tue Oct 13, 14:00 – 15:30 · Athena

Chair(s): Luisa Fernanda Chaparro Sierra (Instituto Tecnológico y de Estudios Superiores de Monterrey); Ling Ma (Queen Mary University of London)

Teaching Engineers to Question: Expanding Strategic Thinking Using a Nine-Lens Cognitive Framework with LLM-as-a-Judge

Author(s): Joonseo Yim (YONSEI University)

Speaker(s): Joonseo Yim (YONSEI University)

Automatically Assessing Code Reviews in Student Teams: An Exploration of Linguistic Features

Author(s): Samantha Hodge (University of British Columbia); Bowen Hui (University of British Columbia)

Speaker(s): Bowen Hui (University of British Columbia)

An Agile Roleplay Simulation for Teaching Scrum in an Undergraduate Computer Science Project Management Course

Author(s): Vanessa Tudor (University of Vienna); Sakhi Aggrawal (Purdue University); Renate Motschnig (University of Vienna)

Speaker(s): Vanessa Tudor (University of Vienna)

From Real-World Projects to Research-Oriented Learning: Continuous Improvement of a Master-Level Course in Software Engineering Education

Author(s): Michael Neumann (Hochschule Hannover); Eva-Maria Schön (University of Applied Sciences Emden Leer)

Speaker(s): Michael Neumann (Hochschule Hannover)

Revisiting Game-Based Learning in Engineering Education

Author(s): Carlos Vaz de Carvalho (Instituto Superior Engenharia Porto); Hariklia Tsalapatas (Thessaly University); Olivier Heidmann (Thessaly University); Manuel Caeiro-Rodríguez (University of Vigo); Martín Llamas-Nistal (Atlantic - University of Vigo)

Speaker(s): Carlos Vaz de Carvalho (Instituto Superior Engenharia Porto)

Assessing Communication Skills in Agile Software Engineering Education Through Data-Informed Practices

Author(s): Gustavo Soad (University of São Paulo (USP)); Maria Lydia Fioravanti (University of São Paulo); Ellen Barbosa (University of São Paulo)

Speaker(s): Gustavo Soad (University of São Paulo (USP))

Special Session: Teaching and Learning Engineering Students in Times of Challenge

Tue Oct 13, 14:00 – 15:30 • Corallino

Author(s): Yevgeniya Zastavker (Olin College of Engineering); Melissa Sinclair (American University, Washington DC)

Student & Instructor Perceptions of Generative AI (V)

Tue Oct 13, 14:00 – 15:30 • Sophia

Chair(s): Yen-Lin Han (Seattle University); Kinga Stecula (Silesian University of Technology)

WIP: Simulation of a Scientific Conference to Teach Undergraduate Computer Science Students Research Skills in the Age of GenAI

Author(s): Patricia Brockmann (Technische Hochschule Nuernberg); Heidi Schuhbauer (Technische Hochschule Nürnberg Georg Simon Ohm); Dina Barbian (eco Institute for Sustainability); Michael Bosch (University Albstadt-Sigmaringen)

Speaker(s): Patricia Brockmann (Technische Hochschule Nuernberg)

WIP: A Design Reference for Using Generative AI to Support Adaptive Learning in Engineering Education

Author(s): Suman Saha (Pennsylvania State University); Onil Morshed (Gettysburg College); Vincent Fakiyesi (University of Georgia); Mahfuza Farooque (Pennsylvania State University)

Speaker(s): Suman Saha (Pennsylvania State University)

WIP: Exploring Physics Students' Self-Directed Use of Large Language Models

Author(s): Thea Bjørnland (Norwegian University of Science and Technology); Stella Kirkvold (Norwegian University of Science and Technology); Mie Helene Davies (Norwegian University of Science and Technology); Trine Højberg Andersen (Norwegian University of Science and Technology)

Speaker(s): Thea Bjørnland (Norwegian University of Science and Technology); Trine Højberg Andersen (Norwegian University of Science and Technology)

WIP: AlgoQ - a Conversational LLM-Based Tool for Lowering Barriers to Quantum Algorithms

Author(s): Yi Liu (University of North Carolina Wilmington); Yang Song (University of North Carolina Wilmington); Gulustan Dogan (University of North Carolina Wilmington)

Speaker(s): Yi Liu (University of North Carolina Wilmington)

LE-MASF: A Framework for Building Generative AI Multi-Agent Systems in Learning Ecosystems

Author(s): Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo); Davidson Cury (UFES- Universidade Federal do Espírito Santo)

Speaker(s): Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo)

WIP: Using Flow-Based Music Programming to Support 8th-Grade Students' Engagement in Computer Science

Author(s): Zifeng Liu (University of Florida); Jeremy Frank (University of California, San Diego); Wanli Xing (University of Miami); Alec Barron (University of California, San Diego); Marlys Williamson (Chula Vista Elementary School District); Maya Israel (University of Florida); Victor Minces (UCSD)

Sustainability & Green Engineering Education

Tue Oct 13, 14:00 – 15:30 • Leda

Chair(s): Abhishek Mahesh Appaji (A-Collective / IEEE Education Society); Alfandika Nyandoro (Regent University)

Integrating Sociotechnical Thinking to Strengthen E-Waste Awareness in Engineering Students

Author(s): Danielle Thompson (University of San Diego); Susan Lord (University of San Diego)

Speaker(s): Susan Lord (University of San Diego)

Sustainability in Interaction Design Education: Supporting Reflection

Author(s): Bashira Jaradat (Norwegian University of Science and Technology); Birgit Rognebakke Krogstie (Norwegian University of Science and Technology); Dag Svanæs (Norwegian University of Science and Technology); Yngve Dahl (Norwegian University of Science and Technology)

Speaker(s): Bashira Jaradat (Norwegian University of Science and Technology)

WIP: Batteries to Implement Hands-on Sustainability in Engineering Laboratory Courses

Author(s): Kemper Lipscomb (The University of Texas at Austin); Carlos Landaverde Alvarado (The University of Texas at Austin)

Speaker(s): Kemper Lipscomb (The University of Texas at Austin)

An Iterative Service-Learning Approach to Sustainable Open-Source Development: Parallel Prototyping of a Food Waste Reduction Application

Author(s): Catherine Baker (Creighton University); Kevin Lombard (Creighton University); Sherri Weitz-Harms (Creighton University); Steven Fernandes (Creighton University); Waseq Rahman (Creighton University); Erika Germinario (Creighton University)

Speaker(s): Erika Germinario (Creighton University)

A Global Competencies Framework to Bridge the Green Skills Gap

Author(s): Edmundo Tovar (Universidad Politécnica de Madrid); Petra Kleindienst (Fakulteta Za Uporabne Družbene Studije V Novi Gorici Zavod); Loredana Manasia (National University of Science and Technology Politehnica Bucharest); Katrien Dehaese (UC LIMBURG); Ozgur Yasar Akyar (Ronesans Enstitüsü Derneği)

Focus on Exhibitors & Coffee Break

Tue Oct 13, 15:30 – 16:00 • Akamas Foyer

Curriculum Design & Workforce Preparation (V)

Tue Oct 13, 16:00 – 17:30 • Akamas A/B

Chair(s): Panayiota Diakou (University of Cyprus); Yen-Lin Han (Seattle University)

WIP: Bridging the Academic-Practitioner Gap - Analysing Concept Introduction and Sentiment in Design Engineering Critiques

Author(s): Hadas Sopher (Ariel University); Chen Hajaj (Ariel University); John Gero (University of North Carolina at Charlotte)

Speaker(s): Hadas Sopher (Ariel University)

WIP Visualization of Parsing to Aid Language Understanding

Author(s): Oliver Jonsson (Element Materials Technology AB); Filip Strömbäck (Linköping University)

Speaker(s): Oliver Jonsson (Element Materials Technology AB)

WIP: Evaluating Techniques for Reading Academic Literature Among New Undergraduate Engineering Education Research Assistants

Author(s): Aidan Schneider (Olin College of Engineering); Ramzey Burdette (Olin College of Engineering); Titilayo Oshinowo (Olin College of Engineering); Yunzhu Chen (Olin College of Engineering); Mira Epstein (Olin College of Engineering); Maria Zacharia (Olin College of Engineering); Stephanos Matsumoto (Olin College of Engineering)

WIP: Examining Feedback Generation in Adaptive Conversational Learning Systems

Author(s): Vincent Fakiyesi (University of Georgia); Srujan Singareddy (Pennsylvania State University); Mahfuza Farooque (Pennsylvania State University); Suman Saha (Pennsylvania State University)

Speaker(s): Suman Saha (Pennsylvania State University)

WIP: Block-Based Programming Increases Student's Success Rate in Solving Assembly Programming Tasks

Author(s): Florian Wörster (University of Vienna); Stefan Schraml (HTL Leonding)

WIP: Analysing Educator Perceptions on the Use of Hyper-Realistic Avatars in Higher Education

Author(s): Keith Azzopardi (University of Malta); Gabriel Borg (University of Malta); Matthew Montebello (University of Malta); Vanessa Camilleri (University of Malta); Dylan Seychell (University of Malta); Luke Cassar (University of Malta)

Speaker(s): Keith Azzopardi (University of Malta)

Data Science, Analytics & Data-Informed Teaching

Tue Oct 13, 16:00 – 17:30 • Akamas C

Chair(s): Joe Finney (Lancaster University); Alfandika Nyandoro (Regent University)

Integrating Data Analytics and Guided Personalised Learning to Enhance Formative Learning Activities on an Undergraduate Biomedical Sciences Module

Author(s): Ling Ma (Queen Mary University of London); Rosemary Clyne (Queen Mary University of London)

Speaker(s): Ling Ma (Queen Mary University of London)

WIP: Learning with and About Data. Reflective Practice in Data Science Professional Development Program

Author(s): Mariana Arboleda (Universidad del Norte); Camilo Vieira (Universidad del Norte); Jennifer Chiu (University of Virginia)

Speaker(s): Camilo Vieira (Universidad del Norte)

WIP: Using SOLO Taxonomy as a Framework for Building Data Visualization Capacity

Author(s): Vetrica Byrd (James Madison University); Carolina Veiga (James Madison University)

WIP: Utilizing Curriculum Analytics to Address Engineering Bottlenecks at a Minority Serving Institution

Author(s): Virgilio Gonzalez (University of Texas at El Paso); Rodrigo Romero (University of Texas at El Paso); Jesus Gutierrez (University of Texas at El Paso); Pilar Gonzalez (The University of Texas at El Paso)

WIP: EduEngageAI: A Multimodal Analytics Tool for Enhancing Instructor Engagement in Online Learning Environments

Author(s): Kunal Rathore (University of Texas Permian Basin); Priyanka Kumar (Computer Science); Amruth Kumar (Ramapo College of New Jersey)

Integrating Artificial and Computational Intelligence, Data Analytics and 5/6 G Communication Technologies in an Undergrad Sustainable Energy Systems Course

Author(s): Masood Khan (Curtin University, Australia); Chris Ford (Curtin University); Daniel Benson (Curtin University); Ilyas Mazhar (Curtin University)

Diversity, Equity, Accessibility & Inclusion in Engineering (II)

Tue Oct 13, 16:00 – 17:30 • Aphrodite A

Chair(s): Jonathan Browning (Queen's University Belfast); Doug Havard (Chapman University)

Accessible Unplugged Computing for Students with ASD

Author(s): Abdu Arslanyilmaz (Youngstown State University); Carrie Jackson (Youngstown State University); Katie Good (Youngstown State University); Maddison Oakes (Youngstown State University); Katie Petridis (Potential Development); Michael Latessa (Youngstown State University)

Speaker(s): Abdu Arslanyilmaz (Youngstown State University)

WIP: Empowering Teachers Through AI: An Assistant for Designing Gender-Inclusive and Unplugged Computational Thinking Activities

Author(s): Sunny Miranda (University of Coimbra); Maria Marcelino (University of Coimbra); Paula Silva (University of Coimbra Portugal)

The Effects of Project-Based Learning on Academic Outcomes: A Comparative Analysis Across Gender, Racial, and Socioeconomic Groups

Author(s): Priscila Santos (Institute of Technology and Leadership (Inteli)); Henrique Mohallem Paiva (Inteli - Institute of Technology and Leadership); Flavia Santoro (Inteli)

Speaker(s): Henrique Mohallem Paiva (Inteli - Institute of Technology and Leadership)

Bridging the Gap Between Entrepreneurial Intentions and Behavior Among Female Engineering Students: A Conceptual Model

Author(s): Ayman Naser (Qatar University); Mahmoud Abdulwahed (Qatar University)

WIP: Evaluating the Impact of the African-Centered Pedagogy on the STEM and Cultural Identities of African American Engineering Students

Author(s): DeAnna Bailey (Morgan State University); Kendal Knox (Morgan State University); James Holly Jr (Southern University); Khadij Tandja (Morgan State University); Kate Rotindo (Impact Allies); Charnee Bowns (Conscious Ingenuity); Krystal Dunn (Conscious Ingenuity)

Speaker(s): Kendal Knox (Morgan State University)

IEEE CS Day: Teaching Artificial Intelligence to Girls Through a Hands-on Outreach Workshop in K-12 Education

Author(s): Luana Silva (Universidade de Brasília); Maristela Holanda (University of Brasília); Aletéia P. F. Araújo (Universidade de Brasília (UnB)); Carla Cavalcante Koike (UnB); Leticia Lopes Leite (Universidade de Brasília); Maria Emilia Walter (University of Brasília)

Engineering Education Research: Methods & Frameworks (III)

Tue Oct 13, 16:00 – 17:30 • Aphrodite B

Chair(s): Shana Shaw (Texas A&M University); Gunnar Wolf (Instituto de Investigaciones Económicas UNAM)

WIP: Using Smartphone Sensors to Teach Engineering Problem Solving in the Era of AI

Author(s): Anthony Thomas (University of California, Davis)

Speaker(s): Anthony Thomas (University of California, Davis)

WIP - Linking Expectancy-Value Motivation to Knowledge Retention in Project-Based Materials Science and Engineering Learning

Author(s): Anurag Srivastava (Texas A&M University); Saira Anwar (Texas A&M University); Bilal Mansoor (Texas A&M University at Qatar)

Speaker(s): Anurag Srivastava (Texas A&M University)

WIP: Designing an Interview Protocol to Study Threshold Concepts in Interdisciplinary Engineering Education

Author(s): Yunmeng Han (University of Cincinnati); David Reeping (University of Cincinnati)

WIP: Cross-Disciplinary Validation of the LSEESC Methodology as Modeling Framework for STEM Education

Author(s): Erika Cervantes Juárez (Instituto Politécnico Nacional); Daniel Sánchez Guzmán (Instituto Politécnico Nacional)

Speaker(s): Erika Cervantes Juárez (Instituto Politécnico Nacional)

WIP: A Research-to-Practice Framework for Blending Virtual Wind Tunnel Exercises with Physical Labs

Author(s): Sally Bane (Purdue University); Jun Chen (Purdue University); Sean Brophy (Purdue University); Adarsh Agrawal (Purdue University)

Speaker(s): Sally Bane (Purdue University)

Research Synthesis in Computing Education

Tue Oct 13, 16:00 – 17:30 • Adonis

Chair(s): Abdu Arslanyilmaz (Youngstown State University); Anna Eckerdal (Uppsala University)

Approaches and Tools to Support the Teaching and Learning of Heuristic Evaluation in HCI: Insights from a Rapid Review

Author(s): Fabiann Matthaues Barbosa (Federal University of Amazonas and Federal Institute of Amazonas); José Magalhães (Federal University of Amazonas);

Tayana Conte (Federal University of Amazonas)

Speaker(s): Leandro Carvalho (Universidade de Brasília)

A Systematic Literature Review of Knowledge Tracing and Student Modeling Techniques in Programming Education

Author(s): Rodrigo Hagstrom (University of São Paulo); Jose Marinho (Polytechnic University of Coimbra); Mauricio Henning (Catholic University of Santa Catarina);

Andrei Carniel (Universidade Católica de Santa Catarina); Daniel de Carvalho Alves Filho (Universidade de Brasília); Leônidas Brandão (University of São Paulo);

Vinicius Faria Culmant Ramos (Federal University of Santa Catarina); Helena Gomes (Universidade Estadual de São Paulo); Anarosa Brandão (Universidade de São Paulo)

Speaker(s): Jose Marinho (Polytechnic University of Coimbra)

Use of Generative Artificial Intelligence in the Development of Assessment Instruments in Higher Education: A Systematic Review

Author(s): Vinicius Telles (Universidade Federal do Rio Grande); Otavio Lube dos Santos (UFES - Universidade Federal do Espírito Santo); Everton Feijo (Universidade

Federal do Rio Grande); Regina Barwaldt (Federal University of Rio Grande (FURG)); Tiago Asmus (Universidade Federal do Rio Grande)

Synthesizing the Evidence on LLMs in CS Classrooms: An Umbrella Review of Pedagogical Uses and Challenges

Author(s): Luiza Gomes (Universidade de Brasília); Edison Ishikawa (University of Brasília); Leandro Carvalho (Universidade de Brasília); Maristela Holanda

(University of Brasília)

Analysis of Artificial Intelligence Tools for Literature Review in the Computer Science Education Field

Author(s): Maristela Holanda (University of Brasília); Leandro Carvalho (Universidade de Brasília); Luana Silva (Universidade de Brasília); Suxia Cui (Prairie View

A&M University); Dilma Da Silva (TAMU)

Undergraduate Students' Perceptions of an Interactive Educational Application - SedimentSketch

Author(s): Syeda Fizza Ali (Texas A&M University); Anna Stepanova (Texas A&M University); Archit Panwar (Texas A&M University); Aniket Patel (Texas A&M

University); Carlos Alvarez Zarikian (Texas A&M University); Juan Laya (Texas A&M University); Tracy Hammond (Texas A and M University); Saira Anwar (Texas

A&M University)

Speaker(s): Saira Anwar (Texas A&M University)

Software Engineering & Data Science

Tue Oct 13, 16:00 – 17:30 • Athena

Chair(s): Gunnar Wolf (Instituto de Investigaciones Económicas UNAM); Andrew Ash (Oklahoma State University)

WIP: Data Storytelling Skills for Engineering Students: A Balance Between Data Analysis and Visual Communication

Author(s): Haijing Tu (Indiana State University); Majid Afshar (Indiana State University); Maria Javaid (Indiana State University)

Speaker(s): Haijing Tu (Indiana State University)

WIP: Software Engineering Competencies in the Age of AI

Author(s): Lynn Vonderhaar (Embry-Riddle Aeronautical University); Massood Towhidnejad (Embry-Riddle Aeronautical University); Omar Ochoa (Embry-Riddle Aeronautical University)

Speaker(s): Massood Towhidnejad (Embry-Riddle Aeronautical University)

WIP - Bridging the Semantic Gap in Software Engineering: A Kinesthetic Learning Approach Using Physical Proxies for Requirements and Architecture

Author(s): Yvon Kermarrec (IMT Atlantique); Kouadio N'goran (IMT Atlantique)

WIP: Teaching Software Architectures in the Age of LLMs

Author(s): Juha Savolainen (Danfoss Climate Solutions); Ilenia Fronza (Free University of Bolzano); Jonne Itkonen (University of Jyväskylä); Tommi Mikkonen (University of Jyväskylä)

Speaker(s): Tommi Mikkonen (University of Jyväskylä)

WIP: AI-Supported Learning Environment for Teaching Software Testing

Author(s): Birgit Pohn (University of Applied Sciences Technikum Wien); Dominik Dolezal (University of Vienna); Jürgen Konrad (University of Applied Sciences Technikum Wien); Alexander Vukovic (SEQIS); Lars Mehnen (Technikum Wien); Lukas Rohatsch (University of Applied Sciences Technikum Wien); Marvin Kosmider (University of Applied Sciences Technikum Wien); Werner Winiwarter (University of Vienna)

Speaker(s): Birgit Pohn (University of Applied Sciences Technikum Wien)

WIP: Industry-Aligned AI Use in Individual Software Engineering Projects

Author(s): Esha Barlaskar (Queen's University Belfast); Giuseppe Trombino (Queen's University Belfast); David Cutting (Queens University Belfast Belfast); Neil Anderson (Queen's University Belfast)

Speaker(s): Esha Barlaskar (Queen's University Belfast)

Special Session: HiddenSTEM: Salient Characteristics of Inclusive Curriculum for Computing and Engineering Classrooms

Tue Oct 13, 16:00 – 17:30 • Corallino

HiddenSTEM: Salient Characteristics of Inclusive Curriculum for Computing and Engineering Classrooms

Author(s): Erin Henslee (Wake Forest University); Lauren Lowman (Wake Forest University)

Student & Instructor Perceptions of Generative AI (VI)

Tue Oct 13, 16:00 – 17:30 • Leda

Chair(s): Mark Holliday (Western Carolina University); John Mitchell (UCL)

WIP: A Hybrid Rule-Based and Large Language Model Framework for Metadiscourse Analysis

Author(s): Vaibhav Suryawanshi (Michigan Technological University); CK Choi (Michigan Technological University); Radheshyam Tewari (Michigan Technological University); Aneet Dharmavaram Narendranath (Michigan Technological University)

Speaker(s): CK Choi (Michigan Technological University)

WIP: Interviewing Students About Trust amid GenAI Tool Use

Author(s): Thirimachos Bourlai (University of Georgia); James Huff (University of Georgia); Rachel Figard (University of Georgia); John Brocato (University of Georgia)

Speaker(s): Thirimachos Bourlai (University of Georgia)

WIP: LLM-Based Question Difficulty Estimation for Open-Ended STEM Problems

Author(s): Idan Drori (Tel Aviv University); Omri Dan (Tel Aviv University); Tom Rapoport (Tel Aviv University); Michal Kleinbort (Tel Aviv University); Amir Rubinstein (Tel Aviv University); Adi Haviv (Tel Aviv University)

Speaker(s): Idan Drori (Tel Aviv University)

WIP: Bridging the Rural STEM Gap: LLM-Assisted Insights into Space Camp Efficacy

Author(s): Rachel Shannon (Iowa State University); Matthew Nelson (Iowa State University)

WIP: A Mixed-Methods Learning Analytics Framework Using Large Language Models in Project-Based Course

Author(s): Matthew Nelson (Iowa State University); Mani Mina (Iowa State University)

WIP: From Prompting to Proof: An in-Class ChatGPT Group Chat Activity for MEMS Research Literacy

Author(s): Bee-Yen Toh (Queen's University Belfast); Neil Buchanan (Queens University Belfast)

Speaker(s): Bee-Yen Toh (Queen's University Belfast)

Student & Instructor Perceptions of Generative AI (VII)

Tue Oct 13, 16:00 – 17:30 • Sophia

Chair(s): Divya Nalla (Nalla Malla Reddy Engineering College); Jeffrey Yackley (University of Michigan - Flint)

WIP: LLM Odyssey: A Game-Based Platform for Teaching LLM Engineering Concepts

Author(s): Priyamvada Tripathi (Tufts University)

Speaker(s): Priyamvada Tripathi (Tufts University)

WIP: Leveraging Large Language Models to Generate Personalized ABET Outcome Summaries in Project-Based Software Engineering Courses

Author(s): Shawna Thomas (Texas A&M University); Robert Lightfoot (Texas A&M University Department of Computer Scienc)

WIP: Usefulness-Gated, Intent-Aware Code Comment Generation with Large Language Models

Author(s): Sankar Raghuthaman (North Carolina State University); Kenil Patel (North Carolina State University); Vihar Shah (North Carolina State University); Edward Gehringer (North Carolina State University)

Speaker(s): Edward Gehringer (North Carolina State University)

WIP: FAULTLINE: Using Deliberate LLM Errors to Foster Creative and Critical Thinking in Computing Education

Author(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College); Divya Nalla (Nalla Malla Reddy Engineering College); Anvesh Nookala (Nalla Malla Reddy Engineering College); Pabbathreddy Animesh Reddy (NALLA MALLA REDDY Engineering COLLEGE)

Speaker(s): Yochan Reddy Nookala (Nalla Malla Reddy Engineering College)

Interactive Course Feedback Agent Based on Large Language Model Technology

Author(s): Julie Bauer (Maastricht University); Noah Endres (Maastricht University); Zainab Kadour (Maastricht University); Miguel Teixeira (Maastricht University); Mikolaj Borowiecki (Maastricht University); Aki Härmä (Maastricht University); Martijn Boussé (Maastricht University)

Speaker(s): Julie Bauer (Maastricht University)

From Grading to Guiding: A Framework for Using AI as a Pre-Evaluation Tool in Learning

Author(s): Sabur Butt (Tecnologico de Monterrey); Mohd Anas Wajid (Tecnologico de Monterrey); Patricia Caratozzolo (Tecnologico de Monterrey); Claudia Camacho Zuñiga (Tecnologico de Monterrey)

Pre-Dinner Tour

Tue Oct 13, 17:30 – 19:30 • Coral Beach Hotel & Resort Entrance

Conference Dinner / Awards Ceremony

Tue Oct 13, 19:30 – 22:15 • Aliathan Resort

Breakfast on Own - Partner Hotels

Wed Oct 14, 6:30 – 8:30

Registration

Wed Oct 14, 8:00 – 15:30 • Akamas Foyer

AI Literacy, Predictive Analytics, & Frameworks

Wed Oct 14, 8:30 – 10:00 • Akamas A/B

Chair(s): Elodie Etienne (INRIA Paris); Anurag Srivastava (Texas A&M University)

Measuring AI Literacy: A Rapid Review

Author(s): LeChen Zhang (University of Helsinki); Otto Segersven (University of Helsinki); Jalal Nouri (Stockholm University); Linda Mannila (University of Helsinki)

Fuzzy Logic-Based Methods for Predicting Dropout in Higher Education

Author(s): Everton Feijo (Universidade Federal do Rio Grande); Lucas da Silva Schwarzbach (Universidade Federal do Rio Grande); Bruna Freitas (Universidade Federal do Rio Grande); Otavio Lube dos Santos (UFES - Universidade Federal do Espirito Santo); Regina Barwaldt (Federal University of Rio Grande (FURG)); Vinicius Telles (Universidade Federal do Rio Grande); Tiago Asmus (Universidade Federal do Rio Grande)

Anomaly Detection in Virtual Learning Environments: A Comparative Study of Clustering, Isolation, and Heuristic Techniques

Author(s): Ewerton Petillo (Federal University of Amazonas); Eulanda Santos (Universidade Federal do Amazonas - UFAM); José Magalhães (Federal University of Amazonas)

Speaker(s): Ewerton Petillo (Federal University of Amazonas)

A Framework for Assessing Institutional Readiness: Using Sociotechnical Systems Theory to Predict Data System Implementation Success

Author(s): Cyndi Lynch (Purdue)

An Analysis of Student Profile Characteristics Affecting Dropout Rates in Higher Education

Author(s): Juliana Cassiano Ferrarezi Catharino (Universidade Estadual Paulista); Lilian Motti (University of Limerick); Remo Brega (Unesp)

Speaker(s): Lilian Motti (University of Limerick)

AI Tutors, Chatbots & Virtual Teaching Assistants (II)

Wed Oct 14, 8:30 – 10:00 • Akamas C

Chair(s): Mary Lou Maher (University of Sydney); Bryan Ranger (Boston College)

WIP: Comparing Written Self-Explanations and Interactive Explanations with a Peer-like Chatbot in Engineering Statics

Author(s): Jose De La Hoz (Universidad del Norte); Jorge Archbold (Universidad del Norte); Camilo Vieira (Universidad del Norte); Carlos Arteta (Universidad del Norte); Nicolás Guarín-Zapata (Universidad EAFIT); Mario Velez (Universidad EAFIT)

Speaker(s): Camilo Vieira (Universidad del Norte)

Understanding Student Perceptions and Engagement with AI-Supported Tutoring in Undergraduate Mathematics and Biology Courses

Author(s): Virginia Thompson (CUNY York College); Wafica Itani (Miami Dade College)

Speaker(s): Virginia Thompson (CUNY York College)

WIP: Ethical and Professional Challenges of AI Chatbots in Internships - Instrument Development

Author(s): Luciana Debs (Texas State University); Deniz Besiktepe (Purdue University); Joseph Manuel (Purdue University); Mark Zimpfer (Purdue University)

Speaker(s): Mark Zimpfer (Purdue University)

WIP: AI Karenina: On the Instructional Failure Modes in Prompt-Engineered GenAI Tutoring

Author(s): Joshua Arens (Stanford University); Alessandra Napoli (Stanford University); Zhangyang Wu (Stanford University); Shima Salehi (Stanford University); Karen Wang (San Jose State University)

Speaker(s): Alessandra Napoli (Stanford University)

Forcing the Issue: Exploring AI Literacy Development Through Required AI Use in Open-Ended Engineering Projects

Author(s): Jianchu Yao (East Carolina University)

Speaker(s): Jianchu Yao (East Carolina University)

Curriculum Design & Workforce Preparation (VI)

Wed Oct 14, 8:30 – 10:00 · Aphrodite A

Chair(s): Carina González González (Universidad de La Laguna); Haijing Tu (Indiana State University)

Beyond Problem Solvers: Narrative Constructions of Engineering Mindset Across Educational Contexts

Author(s): Jahnavi Dirisina (Minnesota State University, Mankato); Gibin Raju (Louisiana State University)

Speaker(s): Anurag Srivastava (Texas A&M University)

From Courses to Concepts: A Topic-Level Analysis of Prerequisite Preparation in Linear Systems

Author(s): Eesha Atif (North Carolina State University); Laura Bottomley (North Carolina State University)

From Behaviorism to Autonomy: A Quantitative Study of Flexible Deadlines Across Diverse Computer Science Learning Environments

Author(s): Wenbing Zhao (Cleveland State University); Xiongyi Liu (Cleveland State University); Chaomin Luo (Mississippi State University)

Speaker(s): Wenbing Zhao (Cleveland State University)

Placemaking Principles for Computing and Engineering Curricula

Author(s): Roger McDermott (University of Eastern Finland); Mats Daniels (Uppsala University); John N A Brown (Robert Gordon University)

Speaker(s): Mats Daniels (Uppsala University)

Orchestrating Multimodality: An Integrative Learning Experience (LX) Design for Climate Education

Author(s): Sonia Andreou (Cyprus University of Technology); Eirini Christou (CUT); Demetra Hadjichambi (Cyprus Ministry of Education, Sport and Youth); Andreas Hadjichambis (Cyprus Ministry of Education, Sport and Youth); Andri Ioannou (Cyprus University of Technology)

Speaker(s): Sonia Andreou (Cyprus University of Technology)

Embedded Systems, Circuits & Hardware Labs (V)

Wed Oct 14, 8:30 – 10:00 · Aphrodite B

Chair(s): Mark Holliday (Western Carolina University); Filip Strömbäck (Linköping University)

WIP: A Microelectronics Module in a Secondary Physics Classroom

Author(s): Andrew Ash (Oklahoma State University); John Hu (Oklahoma State University)

Speaker(s): Andrew Ash (Oklahoma State University)

A Testbench for Drone Motor Characterization in Academic Environments

Author(s): Gabriel Cristofolletti Diorio (Instituto Tecnológico de Aeronáutica); Neusa Oliveira (Instituto Tecnológico de Aeronáutica); Alysson Lucena (Instituto Tecnológico de Aeronáutica)

Speaker(s): Gabriel Cristofolletti Diorio (Instituto Tecnológico de Aeronáutica)

WIP: The Value of Electronics to Non-Majors

Author(s): Tom Zajdel (Carnegie Mellon University); Allison Connell Pensky (Carnegie Mellon University)

WIP: Integrating Analogies and Metaphors to Map Abstract Cloud Computing Pedagogy

Author(s): Esha Barlaskar (Queen's University Belfast); Bee-Yen Toh (Queen's University Belfast); David Cutting (Queens University Belfast Belfast)

Speaker(s): Esha Barlaskar (Queen's University Belfast)

WIP: Beyond the Blank Editor: Rethinking Microcontroller Labs for Tomorrow's Engineers

Author(s): Christopher Cischke (Michigan Technological University); Alex Riebe (Michigan Technological University); Jacob Stowe (Michigan Technological University)

Speaker(s): Christopher Cischke (Michigan Technological University)

WIP: Live Coding Techniques for Hardware-Integrated Embedded Systems Education

Author(s): Francis Pellicano (University of New Haven); Christopher Martinez

Speaker(s): Stephanie Gillespie (University of New Haven)

Emerging Topics & Innovations in Engineering and Computing Education (VII)

Wed Oct 14, 8:30 – 10:00 · Athena

Chair(s): Margaret Blackie (Virginia Tech); Dominik Deimel (TH Köln)

WIP: Learning by Fixing - a Collection of Broken Programs for Learning Programming

Author(s): Edvard Pedersen (UiT - The Arctic University of Tromsø); Øyvind Nohr (University of Tromsø)

Speaker(s): Edvard Pedersen (UiT - The Arctic University of Tromsø)

WIP Collective Learning in Computer Science: Creating a Culture of Communal Achievement

Author(s): Sarah Hug (Colorado Evaluation and Research Consulting); Melanie Martin (CSU Stanislaus); Tom Carter (CSU Stanislaus); Megan Thomas (CSU Stanislaus)

WIP: Card-Based Activity to Raise People's Awareness About How the Hidden Face of the Digital World and How It Works

Author(s): Sebastien Combefis (AEI Consulting)

Speaker(s): Sebastien Combefis (AEI Consulting)

The "Trojan Horse" Approach: Teaching Students to Audit Flawed AI-Generated Code

Author(s): Inna Shvartsman (Estonian Entrepreneurship University of Applied Sciences)

WIP: Towards an AI Companion for Student Progression and Study Support in Engineering Education

Author(s): Bartol Boras (University of Zagreb, Faculty of Electrical Engineering and Computing); Marin Brkic (University of Zagreb, Faculty of Electrical Engineering and Computing); Igor Mekterović (University of Zagreb, Faculty of Electrical Engineering and Computing); Tomislav Jaguš (University of Zagreb)

Speaker(s): Toni Ivanković (University of Zagreb)

First-Year Engineering Experience (I)

Wed Oct 14, 8:30 – 10:00 · Adonis

Chair(s): Sally Bane (Purdue University); Rosa Vasconcelos (Minho University)

Enhancing the First-Year Student Experience with Curriculum Analytics: A Scoping Review

Author(s): Selina Reinhard (Vienna University of Technology); René Röpke (TU Wien)

Speaker(s): Selina Reinhard (Vienna University of Technology)

Early Academic Inclusion in Engineering Excellence Programs: Geographical and Intergenerational Dimensions of First-Year Outcomes

Author(s): Andres Gonzalez-Nucamendi (Tecnológico de Monterrey); Julieta Noguez (Tecnologico de Monterrey); Luis Neri (Tecnologico de Monterrey); Jorge Valverde-Rebaza (Tecnologico de Monterrey); Víctor Robledo-Rella (Tecnologico de Monterrey); Rosa María Guadalupe García-Castelán (Tecnologico de Monterrey)

Speaker(s): Andres Gonzalez-Nucamendi (Tecnológico de Monterrey)

Project Design for Teamwork Development in First-Year Engineering Students: Lessons from a Comparative Analysis of Two Approaches

Author(s): Sourabh Sharma (Plaksha University); Anil Roy (Plaksha University); Brainerd Prince (Plaksha University); Ananya Singla (Plaksha University); Anvesha Gautam (Plaksha university); Achintya Mathur (Plaksha University); Arhaan Singh (Plaksha University); Ananya Sunder (Plaksha University)

To Evaluate the Efficacy of a Three-Stage Intervention Model to Build English Language Competencies in First-Year Engineering Students

Author(s): Alok Ranjan (Plaksha University); Brainerd Prince (Plaksha University); Kirti Basra (Plaksha University); Prajna Sharma (Plaksha University); Arya Vachhani (Plaksha University); Achaljot Kaur (Plaksha University)

Speaker(s): Brainerd Prince (Plaksha University)

WIP: Understanding Student Experiences Related to Stress While Modularizing a First-Year Engineering Course

Author(s): Madeline Martin (University of Cincinnati); Fatemeh Mirzahasoeini Zarandi (University of Cincinnati); David Reeping (University of Cincinnati); Muhammad Asghar (University of Cincinnati)

Teamwork, Collaboration & Communication Skills (II)

Wed Oct 14, 8:30 – 10:00 · Leda

Chair(s): Michael Thompson (Bucknell University)

WIP: A Team-Based Module for Teaching Practical AI-Related Intellectual Property Principles in Engineering Research

Author(s): Jean Larson (Arizona State University); Samuel Sutton (Aspen Research); Ivan Larson (Arizona State University); Leah Folkestad (Arizona State University); Tanay Patel (Arizona State University); Andreas Spanias (Arizona State University)

Speaker(s): Jean Larson (Arizona State University)

WIP Epistemic Humility in Interdisciplinary Project-Based Learning: Engineering Students Encountering Disciplinary Difference

Author(s): Diana Martin (University College London); Emanuela Tilley (University College London); Fiona Truscott (University College London); Abel Nyamapfene (University College London); John Mitchell (UCL); Deb Chachra (Olin College)

Speaker(s): Diana Martin (University College London)

WIP: Scaffolding and Collaboration in Computational Thinking Activities for 5- and 6-Year-Old Children

Author(s): Saray Piñerez (Universidad del Norte); Camilo Vieira (Universidad del Norte); Rafel Meyerhofer-Parra (Universitat de Girona)

Speaker(s): Rafel Meyerhofer-Parra (Universitat de Girona)

Exploration of an Integrated Technical Communication Program That Embeds AI for First Year Students

Author(s): Stephanie Gillespie (University of New Haven); Ronald Harichandran (University of New Haven); David Adams

Speaker(s): Stephanie Gillespie (University of New Haven)

Focus on Exhibitors & Coffee Break

Wed Oct 14, 10:00 – 10:30 · Akamas Foyer

Closing Ceremony

Wed Oct 14, 10:30 – 11:00 · Akamas A/B

ABET Presentation - Engineering Education for Lifelong Learning: The Power of Collaboration and Innovation

Wed Oct 14, 11:00 – 12:00 · Akamas A/B

Chair(s): Rebecca Reck (University of Illinois Urbana-Champaign)

ABET Presentation

Speaker(s): Michael Milligan (ABET)

Wednesday Lunch

Wed Oct 14, 12:00 – 13:00

AI Literacy & Competency Frameworks

Wed Oct 14, 13:00 – 14:30 · Akamas A/B

Chair(s): Asad Azemi (University of Maryland Eastern Shore); Christopher Cischke (Michigan Technological University)

Preparing the Future Workforce for AI-Augmented Manufacturing: Assessing the Impact of Informal Learning on AI Literacy and Career Perceptions

Author(s): Han Jin (University of Georgia); Runu Das (University of Georgia); Tathyana Moratti (University of Georgia); Mathew Baby (University of Georgia); Xiaou Yang (Santa Clara University); Beshoy Morkos (University of Georgia)

Who Needs What? Latent Profiles of Teachers' AI Readiness After Professional Development and Their Differentiated Training Needs

Author(s): LeChen Zhang (University of Helsinki); Yuki Nagae (Stockholm University); Jalal Nouri (Stockholm University); Linda Mannila (University of Helsinki)

WIP: The Definition of AI in Introductory Artificial Intelligence MOOCs

Author(s): Syeda Fatema Mazumder (Johnson C. Smith University); Saquib Sarwar (University of North Carolina at Charlotte); Nazmus Sakib Miaz (Northeastern University)

Aligning Computer Science Curricula with AI Competency Frameworks: Overlaps, Gaps, and Future Priorities

Author(s): Stefan Pasterk (University of Klagenfurt); Corinna Mößlacher (University of Teacher Education Carinthia); Andreas Bollin (University of Klagenfurt)

Speaker(s): Stefan Pasterk (University of Klagenfurt)

WIP: Higher Education AI Literacy (HEAIL) Measurement Review and Validation Roadmap

Author(s): Sri Yash Tadimalla (University of North Carolina at Charlotte); Ramisha Mahiyat (University of North Carolina Charlotte); Mary Lou Maher (University of Sydney)

AI-Supported Assessment, Grading & Feedback (II)

Wed Oct 14, 13:00 – 14:30 · Akamas C

Chair(s): Laura Bottomley (North Carolina State University); Vetrica Byrd (James Madison University)

WIP: AI Tool for Theory-Aligned Grading and Feedback of Student Reflections, Preliminary Findings for Monitoring

Author(s): Heidi Diefes-Dux (University of Nebraska-Lincoln); Ahatsham Hayat (University of Nebraska, Lincoln); Mohammad Hasan (University of Nebraska-Lincoln)

Speaker(s): Heidi Diefes-Dux (University of Nebraska-Lincoln)

On Suitability of Authentic Assessment Environments for Gen Z Students Against the Backdrop of Generative AI

Author(s): Masood Khan (Curtin University, Australia); Daniel Benson (Curtin University); Nima Nadim (Curtin University); Chris Ford (Curtin University); Ilyas Mazhar (Curtin University)

Speaker(s): Chris Ford (Curtin University)

Scalable Computer-Based Assessment in Undergraduate Solid Mechanics: Promoting Conceptual Mastery and Metacognition in the Age of AI

Author(s): Marko Lubarda (University of California San Diego); Vlado Lubarda (University of California, San Diego); Almontaha Sonbul (University of California San Diego); Thy Trang (University of California San Diego); Huihui Qi (UC San Diego)

AI-Assisted Meta-Review for Reliable Peer Assessment in Computing Education

Author(s): Parvez Rashid (College of Charleston); Mohamed Khalil Brik (The American University in Cairo); Logan Martin (College of Charleston); Edward Gehringer (North Carolina State University)

Speaker(s): Edward Gehringer (North Carolina State University)

WIP: A Real-World Assessment of Generative AI Responses to Biomedical Instrumentation Laboratory Coursework

Author(s): Rebecca Reck (University of Illinois Urbana-Champaign)

Speaker(s): Rebecca Reck (University of Illinois Urbana-Champaign)

Assessment Design, Oral Exams & Academic Integrity (III)

Wed Oct 14, 13:00 – 14:30 · Aphrodite A

Chair(s): Campbell Bego (University of Louisville); Anna Eckerdal (Uppsala University)

Enabling Scalable Assessment for Research-Informed Coursework: An Automated Large Language Model-Assisted Marking Approach in Engineering Higher Education

Author(s): Chao Shu (Queen Mary University of London); Yue Chen (Queen Mary University of London); Na Yao (Queen Mary University of London); Michael Chai (Queen Mary University of London)

Speaker(s): Chao Shu (Queen Mary University of London)

WIP: MindMoo - a Multi-Agent System for Anomaly Detection and Academic Integrity Support in Moodle

Author(s): Ewerton Petillo (Federal University of Amazonas); José Magalhães (Federal University of Amazonas)

Speaker(s): Ewerton Petillo (Federal University of Amazonas)

WIP: Automated Oral Assessments at Scale for Safeguarding Academic Integrity

Author(s): Rachid Hamadi (UNSW Sydney); Matthew O'Dea (University of New South Wales)

Speaker(s): Rachid Hamadi (UNSW Sydney)

Auditing Latent Skill Structures in Large-Scale Educational Assessments Using Non-Negative Matrix Factorization

Author(s): Tiago F Tavares (Insper); Darcio Genicolo-Martins (Insper Instituto de Ensino e Pesquisa); Cassia de Oliveira Fernandez (Insper)

Speaker(s): Tiago F Tavares (Insper)

Iterative Student-to-Instructor Feedback as a Driver of Instructional and Assessment Design in an Introductory Python Course

Author(s): Xiaojin Liu (Purdue University); Alejandra Magana (Purdue University)

Toward a Generative Assessment Platform for Engineering Mechanics Courses

Author(s): Marko Lubarda (University of California San Diego); Vlado Lubarda (University of California, San Diego); Karthik Srinivasan (University of California San Diego); Huize Mao (University of California San Diego); Rushil Gupta (University of California San Diego); Christofer Azadian (University of California San Diego); Almontaha Sonbul (University of California San Diego)

Emerging Topics & Innovations in Engineering and Computing Education (VIII)

Wed Oct 14, 13:00 – 14:30 · Athena

Chair(s): Dominik Deimel (TH Köln); Sonia Vieira (Alasala)

WIP: Setting Generalizability Expectations for Engineering Persistence ML Models: Multi-Institutional Data, Data Collection Methods, and Population Differences

Author(s): Christian Zuniga-Navarrete (University of Louisville); Luis Segura Sangucho (University of Louisville); Arinan Dourado (University of Louisville); Xiaomei Wang (University of Louisville); So Yoon Yoon (University of Cincinnati); Campbell Bego (University of Louisville)

WIP: Engineering and Its Exigences: Centering Rhetorical Exigence for Coherent Communication Instruction Across Engineering Disciplines and Genres

Author(s): Suzanne Lane (Cornell University)

WIP: Consumer Experience of Digital Streaming Platforms Among University Students in an Urban Latin American Context

Author(s): KEVIN MEJIA RIVERA (Universidad Tecnológica Centroamericana (UNITEC)); Natalia Lagos (Universidad Tecnológica Centroamericana); Ana Murillo (Universidad Tecnológica Centroamericana); Luis Reyes (Universidad Tecnológica Centroamericana)

WIP: Building Towards a Taxonomy of Community-Led AI Resistance and Renegotiation

Author(s): Nyomi Morris (Colorado School of Mines); Sui Wang (University of Southern California); Marie Stettler Kleine (Colorado School of Mines)

Speaker(s): Nyomi Morris (Colorado School of Mines)

WIP: Discovery, Dream, Design, Destiny: Mapping Student Strengths Through AI-Augmented Appreciative Inquiry

Author(s): LaTasha Starr (Texas A&M University); Jobin Varughese (Texas A&M University); Tracy Hammond (Texas A and M University)

Improved Student Performance in Four Flipped Post-CS1 Undergraduate Computer Science Courses: A Quasi-Experimental Comparison

Author(s): Weiyang Zhu (Metropolitan State University of Denver)

First-Year Engineering Experience (II)

Wed Oct 14, 13:00 – 14:30 · Adonis

Chair(s): Krishnan Chandran (Technical University of Dresden); Filip Strömbäck (Linköping University)

From Three-Minute Thesis to First-Year Undergraduate Education: A Pitch-Based Honors Assignment for Early Research Literacy and Communication

Author(s): Shantanu Gupta (Bowling Green State University)

Student Agency in First-Year Engineering: A Cross-Institutional Study

Author(s): Laura Cruz Castro (University of Florida); Matilde Sánchez-Peña (University at Buffalo); Nichole Ramirez (University of Texas at El Paso); Sarah Jayasekaran (University of Florida); Lucas Galey (The University of Texas El Paso); Päivikki Jääskelä (University of Jyväskylä)

WIP - a Proposal of Study on the First-Year Engineering Students Expectations

Author(s): Dr Claudio Brito (Science and Education Research Organization); Melany Ciampi (World Organization on System Engineering)

WIP: Computational Thematic Analysis of Attitudes, Skills, and Discipline Perspectives in an Interdisciplinary First-Year Experience

Author(s): David Mueller (University of the Pacific); Sebastian Dzialis (University of the Pacific); Shelly Gulati (University of the Pacific); Luke Lee (University of the Pacific); Maryam Heidarpour (University of the Pacific)

WIP-Operationalizing AI Creativity to Bridge the Competence-Confidence Gap in First-Year Engineering Professional Identity Formation

Author(s): LaTasha Starr (Texas A&M University); Noemi Mendoza (Texas A&M); Shana Shaw (Texas A&M University)

WIP: Book Club Model of Teaching Ethics in First-Year Engineering

Author(s): Abhimanyu Ghosh (University of Wisconsin-Stout)

Speaker(s): Abhimanyu Ghosh (University of Wisconsin-Stout)

Foundational STEM Concepts and Technology-Enhanced Learning

Wed Oct 14, 13:00 – 14:30 · Leda

Chair(s): Katharine Childs (Raspberry Pi Foundation); Devika Kataria (JK Lakshmi Pat University)

WIP - Innovative Practice: Culturally Responsive Technology Integration for the LLM Era: A Framework for Community Driven AI Literacy in Informal Learning

Author(s): Gerri Light (Walden University); Bob Hansen (Humanity for Children); Lincoln Sheets (Humanity for Children)

Measuring the Impact of Structured AI-Driven Activities on Problem Solving and Conceptual Understanding in Undergraduate Physics Courses

Author(s): Víctor Robledo-Rella (Tecnologico de Monterrey); Luis Neri (Tecnologico de Monterrey); Rosa María Guadalupe García-Castelán (Tecnologico de Monterrey); Christopher Horne (North Carolina A&T State University); Andres Gonzalez-Nucamendi (Tecnológico de Monterrey); Julieta Noguez (Tecnologico de Monterrey)

Speaker(s): Víctor Robledo-Rella (Tecnologico de Monterrey)

Instructor-Cued Transfer of Algebra Knowledge Can Support Learning for Novice Programming Students

Author(s): Noah Cowit (University of Colorado Boulder); Lecia Barker (University of Colorado Boulder)

Speaker(s): Lecia Barker (University of Colorado Boulder)

Mathematical AI-Visualizations for Conceptual Understanding Through Critical Thinking in Calculus

Author(s): Ana Donevska-Todorova (University of Applied Sciences)

Misconceptions in Calculus: What They are and Where They Come from

Author(s): YongHong McDowell (York College, City University of New York)

Speaker(s): YongHong McDowell (York College, City University of New York)

Student Views of Discrete Math: Preconceptions, Exposure, and Relevance in Computer Science Education

Author(s): Shanon Reckinger (University of Illinois Chicago); Emily O'dowd (University of Illinois Chicago); Ashley Daly (University of Illinois Chicago)

Speaker(s): Shanon Reckinger (University of Illinois Chicago)

K-12 & Pre-College STEM Outreach (V)

Wed Oct 14, 13:00 – 14:30 · Aphrodite B

Chair(s): Mark Holliday (Western Carolina University); Bryan Ranger (Boston College)

Mediated Effects of Computational Thinking Skills on Visuospatial Working Memory in Preschool Children

Author(s): Carolina Robledo Castro (Universidad del Tolima); Camilo Vieira (Universidad del Norte); Jennifer Chiu (University of Virginia)

Speaker(s): Carolina Robledo Castro (Universidad del Tolima)

WIP: Engineering Biotechnology: A Systematic Literature Review of Biodesign in K-12 Education

Author(s): Avani Singh (University of Maryland - College Park); Justice Walker (University of Maryland, College Park); Lisa Scheifele (Loyola University of Maryland); Foad Hamidi (UMBC); Alysha Swann (La Nube STEAM Discovery Center); Anja Scholze (Scholze Consulting); Corinne Takara (Okada Design); Karen Del Rio Guzman (The University of Texas at El Paso); Agni Prava Banerjee (University of Texas at El Paso); Lydia Stamato (University of Maryland, Baltimore County)

Speaker(s): Justice Walker (University of Maryland, College Park)

WIP: Student Perceptions of Competence and Autonomy as Predictors of AI Literacy in K-12 Education

Author(s): Christos Monoyios (Xenion Education); Asad Abbas (Tecnologico de Monterrey)

Speaker(s): Christos Monoyios (Xenion Education)

WIP: Integrating AI into a K-12 Computational Thinking Curriculum, an Ontology-Driven Approach

Author(s): Cristiana Araújo (Universidade do Minho); Pedro Henriques (University of Minho); João Cerqueira (Life and Health Sciences Research Institute (ICVS) University of Minho)

Speaker(s): Cristiana Araújo (Universidade do Minho)

Special Session: Micro-Simulation Through Cognitive Challenge Cards for Teaching Systems Thinking and Adaptive Decision-Making in Engineering Education

Wed Oct 14, 13:00 – 14:30 · Corallino

Author(s): Nikola Vojtek (Smart Consulting Agency); Vlado Pantovic (University Union - Nikola Tesla); Bojan Smudja (Agilefrogg)

Speaker(s): Vlado Pantovic (University Union - Nikola Tesla)

Student Motivation, Identity, Belonging & Wellbeing (II)

Wed Oct 14, 13:00 – 14:30 · Sophia

Chair(s): Fatima Anwar Omar (University of Georgia); Jasmin Wallner (KPH Vienna/Lower Austria)

WIP: Developing a Culture of Metacognitive Reflection Through Shared Homework Self-Correction Practices in an Undergraduate Engineering Program

Author(s): Elizabeth Rennert (Smith College); Borjana Mikic (Smith College); Glenn Ellis (Smith College)

Speaker(s): Glenn Ellis (Smith College)

WIP: Belonging Troubles; Grouping Strategy Development

Author(s): Kristin Schaefer (Texas A&M University)

Speaker(s): Kristin Schaefer (Texas A&M University)

AI as a Stress Test for Engineering and Computing Education Research

Author(s): Edward Berger (Virginia Tech); John Mitchell (UCL)

Speaker(s): John Mitchell (UCL)

Understanding the Interaction of Course Timing, Pedagogy, and Student Engagement in Engineering Courses

Author(s): Sarah Jayasekaran (University of Florida); Amie Baisley (University of Florida); Kwansun Cho (University of Florida)

Using Narrative to Examine a Woman Engineering Student's Lived Experience of Epistemic (In)Justice in Engineering and Computer Education

Author(s): Kaitlyn Thomas (Technological University Dublin); Adam Kirn (University of Nevada, Reno); Shannon Chance (Technological University Dublin); Kelly Cross (Georgia Institute of Technology)

Mattering Theory and AI Integration in Higher Education: A Framework for Evaluating Student Experience

Author(s): Roger McDermott (University of Eastern Finland); Mats Daniels (Uppsala University); John N A Brown (Robert Gordon University)

Speaker(s): John N A Brown (Robert Gordon University)

Focus on Exhibitors & Coffee Break

Wed Oct 14, 14:30 – 15:00 · Akamas Foyer

Evaluating and Designing for Generative AI in CS Education

Wed Oct 14, 15:00 – 16:30 · Akamas A/B

Chair(s): Michelle Jarvie-Eggart (Michigan Technological University)

Evaluating the Impact of Generative AI Tools on Computer Science Learning: A Comparative Study of ChatGPT, GitHub Copilot, and Traditional Search

Author(s): Nourelislam Zouar (University of North Carolina at Charlotte); Mohamed Shehab (University of North Carolina at Charlotte); Lipsa Sahoo (University of North Carolina at Charlotte)

Speaker(s): Nourelislam Zouar (University of North Carolina at Charlotte)

WIP: Insights from the Use of Large Language Models by Emerging Software Developers

Author(s): Esha Baweja (The Ohio State University); Chia-Ying Lin (Ohio State University, Columbus); Shaswatt Iswarya Sakthivel (The Ohio State University); Soorvi Prakash (none); Akshat Shah (Ohio State University); Mikul Shah (Ohio State University, Columbus); Rajiv Ramnath (The Ohio State University)

Speaker(s): Esha Baweja (The Ohio State University)

WIP: Efficient Multi-Agent Document Filtering for Retrieval-Augmented Generation Using Lightweight Language Models

Author(s): V.m.k. Prasad Goura (Amrita Vishwa Vidyapeetham); Aloukik Joshi (Amrita Vishwa Vidyapeetham); Gampa Snehit (Amrita Vishwa Vidyapeetham); Pagidimarry Karthikeya (Amrita Vishwa Vidyapeetham); Kodisa Srinivasa rao (Amrita Vishwa Vidyapeetham)

Design and Evaluation of a Small Language Model Auditing Assignment for AI Literacy in a Computer Architecture Course

Author(s): Sagnik Nath (UC Santa Cruz); Debarati Basu (Embry-Riddle Aeronautical University); Sakshi Konnur (University of California Santa Cruz); Gus Gatti (Embry-Riddle Aeronautical University)

Speaker(s): Sagnik Nath (UC Santa Cruz)

Exploring Error Quotient and Time-on-Task Pathways in Upper-Secondary Introductory Programming

Author(s): Johan Snider (Uppsala University); Daniel Bosk (KTH); Olle Bälter (KTH)

Speaker(s): Johan Snider (Uppsala University)

Human-GenAI Collaborative Game Co-Design in an Under-Served Chinese Secondary School: A Mixed-Methods Case Study

Author(s): YIMING YUAN (HKUST(Guangzhou)); Lan Luo (Hong Kong University of Science and Technology (Guangzhou)); Kejun Liu (Hong Kong University of Science and Technology (Guangzhou)); Hongbo Huang (Hong Kong University of Science and Technology (Guangzhou)); Qingxin Yang (Hong Kong University of Science and Technology (Guangzhou)); Junze Liu (Hong Kong University of Science and Technology (Guangzhou)); Mengshu Zhang (Hong Kong University of Science and Technology (Guangzhou)); Xiaohua Liu (Hong Kong University of Science and Technology (Guangzhou)); Pan Hui (The Hong Kong University of Science and Technology (Guangzhou)); Li Xin (Hong Kong University of Science and Technology (Guangzhou)); Tengfei Chang (The Hong Kong University of Science and Technology (Guangzhou))

Speaker(s): YIMING YUAN (HKUST(Guangzhou))

Hybrid Session (I)

Wed Oct 14, 15:00 – 16:45 · Leda

Chair(s): Laura Bottomley (North Carolina State University)

Beyond Feedback Outputs: Examining Educators' Prompt Design Practices for LLM-Generated Formative Feedback

Author(s): Eyman Alyahyan (The University of Glasgow); Mireilla Bikanga Ada (University of Glasgow); Jake Lever (University of Glasgow)

Speaker(s): Eyman Alyahyan (The University of Glasgow)

PRISM: Dual-Scale Cognitive Alignment for Goal-Directed Classroom Learning

Author(s): Hasan Jamil (University of Idaho)

Speaker(s): Hasan Jamil (University of Idaho)

WIP: AI Literacy Bootcamp for the Next Generation: Measuring Knowledge, Ethics, and Career Interest Gains Among High School Students

Author(s): Mai Dahshan (University of Virginia); Mohammed Farghally (Virginia Tech); Maha Elouni (Randolph-Macon College)

Speaker(s): Mai Dahshan (University of Virginia)

WIP: Controller-Based Feature Engineering Approach for Machine-Generated Text Detection in Academic Writing

Author(s): Hulayyil Alshammari (University of Missouri); Praveen Rao (University of Missouri-Columbia)

Speaker(s): Hulayyil Alshammari (University of Missouri)

WIP: A Conceptual Framework for Teacher-in-the-Loop Pedagogical Conversational Agents

Author(s): Chi Lok Lei (University of Technology Sydney); Camille Dickson-Deane (University of Technology Sydney); Amara Atif (University of Technology Sydney)

Speaker(s): Chi Lok Lei (University of Technology Sydney)

Training the Mentor, Shaping the Learner: An Analysis of Mentor Training Approaches in Elementary STEM

Author(s): Kylee Howard (Texas A&M University); Joshua Howell (Texas A&M University); Ting Liu (Texas A&M University); Jiajia Du (Texas A&M University); Rebecca Ward (Texas A&M University); Rebecca Schlegel (Texas A&M University)

Speaker(s): Kylee Howard (Texas A&M University)

LCT Autonomy Analysis of an Unplugged CS Teaching Unit

Author(s): Heike Buttke (Leibniz Universität Hannover); Jane Waite (Raspberry Pi Foundation); Johannes Krugel (Leibniz University Hannover)

Speaker(s): Heike Buttke (Leibniz Universität Hannover)

Hybrid Session (II)

Wed Oct 14, 15:00 – 16:45 · Sophia

Chair(s): David Etor (University of Bristol)

A Formative Oral Exam Framework for Diagnosing and Supporting at-Risk Students in Introductory Programming Courses

Author(s): George Frazier (Washburn University); Nan Sun (Washburn University); Joseph Kendall-Morwick (Washburn University)

Speaker(s): George Frazier (Washburn University)

Enhancing Student Research Through Course-Based Research Experiences: A Two-Institution Study

Author(s): Tingjun Lei (University of North Dakota); Timothy Sellers (Mississippi State University); Chaomin Luo (Mississippi State University); Umar Iqbal (Illinois State University); Zhuming Bi (Purdue University Fort Wayne)

Speaker(s): Timothy Sellers (Mississippi State University)

Enhancing a Computational Intelligence Curriculum: A Case Study on Fuzzy Systems-Based Robot Control

Author(s): Tingjun Lei (University of North Dakota); Timothy Sellers (Mississippi State University); Shengfa Liao (Mississippi State University); Wenbing Zhao (Cleveland State University); Zhuming Bi (Purdue University Fort Wayne); Chaomin Luo (Mississippi State University)

Speaker(s): Timothy Sellers (Mississippi State University)

WIP: Early AI in Practice: Experiential Learning with Dual-Enrollment Students

Author(s): Elodie Billionniere (Miami Dade College)

Speaker(s): Elodie Billionniere (Miami Dade College)

Designing and Evaluating LLM-Based Approaches for Requirements Engineering Education

Author(s): zheng li (Stockton University); Karishma Karabi (Stockton University)

Speaker(s): zheng li (Stockton University)

Navigating Pedagogy and Career Preparation: Computing Students' Decision-Making About Generative AI

Author(s): Ashmita Thapaliya (Florida International University); Elodie Billionniere (Miami Dade College); Stephanie Lunn (Florida International University); Farzana Rahman (Syracuse University)

Speaker(s): Elodie Billionniere (Miami Dade College)

WIP: Clinic-In-A-Box: AI-Powered Stakeholder Simulation for Cybersecurity Education

Author(s): Ryan Straight (University of Arizona); Paul Wagner (University of Arizona); Robert Honomichl (University of Arizona); Shengjie Xu (University of Arizona)

Speaker(s): Ryan Straight (University of Arizona)

Hybrid Session (III)

Wed Oct 14, 15:00 – 16:45 · Corallino

Chair(s): Anthony Thomas (University of California, Davis)

Supportive, but Not Standalone: Learner Interactions with AI-Feedback in a STEM Game

Author(s): Sanrupti Satpathy (Indian Institute of Technology Kanpur); Pranali Shevatekar (Indian Institute of Technology); Shubhendu Sarvagya (Indian Institute of Technology); Anveshna Srivastava (Indian Institute of Technology, Kanpur)

Speaker(s): Sanrupti Satpathy (Indian Institute of Technology Kanpur)

Enhancing System Resilience Through Model-Based Systems Thinking in Digital Engineering Environments

Author(s): Hong Jiang (Embry-Riddle Aeronautical University); Reza Rahdar (Embry Riddle Aeronautical University); Mark London (Embry-Riddle Aeronautical University); Yuetong Lin (Embry-Riddle Aeronautical University Worldwide); Jim Hummel (Embry-Riddle Aeronautical University)

Speaker(s): Reza Rahdar (Embry Riddle Aeronautical University)

WIP: "Let's Talk": Designing Intercultural Teams to Deepen Discussions in a Computer Ethics Course

Author(s): Simona Vasilache (University of Tsukuba, Japan)

Speaker(s): Simona Vasilache (University of Tsukuba, Japan)

Evaluating an Esports-Infused Module in an Upper-Level Computer Science Course

Author(s): Mustafa Atay (Winston-Salem State University); Jinghua Zhang (Winston-Salem State University)

Speaker(s): Jinghua Zhang (Winston-Salem State University)

Mapping Learning and Teaching Challenges in Higher Education Data Science Education: A Scoping Review

Author(s): Fatimah Hazza Alshamrani (University of Glasgow); Mireilla Bikanga Ada (University of Glasgow); Syed Waqar Nabi (University of Glasgow)

Speaker(s): Fatimah Hazza Alshamrani (University of Glasgow)

From Misconceptions to Conceptual Change in a Simulation-Based POE Environment

Author(s): Sadia Nawaz (Monash University); Chelsea Porter (University of Pennsylvania); Amna Khan (University of Engineering and Technology, Lahore); Ryan

Baker (University of Adelaide)

A Comprehensive Review and Analysis of Federal Funding Trends and Reporting Practices in Mixed Methods STEM & Engineering Education Research

Author(s): Chillara Venkata Varun (California State University-Sacramento); Praveen Meduri (California State University, Sacramento)

Hybrid Session (IV)

Wed Oct 14, 15:00 – 16:45 · Athena

Chair(s): Igor Verner (Technion - Israel Institute of Technology)

WIP: Student Autonomy and Cognitive Ownership for GenAI-Assisted Design

Author(s): Jon Sticklen (Michigan Technological University); Susan Amato-Henderson (Michigan Technological University)

WIP: Beyond Manual Observation: Automated Analysis of Student Engagement While Preserving Privacy

Author(s): Nolan Platt (Virginia Polytechnic Institute and State University); Yoonje Lee (Virginia Tech); Sehrish Basir Nizamani (Virginia Tech); Alp Tural (Virginia Tech); Elif Tural (Virginia Tech); Saad Nizamani (Virginia Tech); Nada Basit (University of Virginia); Khyati Goyal (Virginia Tech)

Speaker(s): Sehrish Basir Nizamani (Virginia Tech)

WIP: DBWorkout: A Gamified SQL Practice Platform to Support Formative Learning in Database Courses

Author(s): Sehrish Basir Nizamani (Virginia Tech); Deepika Devaraj (Virginia Tech); Tien Nguyen (Virginia Tech); Khyati Goyal (Virginia Tech); Saad Nizamani (Virginia Tech); Sally Hamouda (Virginia Tech); Jaren Goldberg (Virginia Tech)

Understanding Student Use of Large Language Models Across Computer Science Subfields

Author(s): Sehrish Basir Nizamani (Virginia Tech); Yoonje Lee (Virginia Tech); Nikitha Chandrashekar (Virginia Tech); Margaret Ellis (Virginia Tech); Naren Ramakrishnan (Virginia Tech)

Speaker(s): Sehrish Basir Nizamani (Virginia Tech)

Virtual Global Collaboration in Data Analytics and Machine Learning Education: A Mixed-Methods Study of Asynchronous Cross-Border Teamwork

Author(s): Sehrish Basir Nizamani (Virginia Tech); Saad Nizamani (Virginia Tech); Khyati Goyal (Virginia Tech); Sarwat Nizamani (University of Mirpurkhas); Zannah Ziew (Virginia Tech)

Speaker(s): Sehrish Basir Nizamani (Virginia Tech)

Is It over Now? Contrasting Student Social Structures and Learning Preferences Before, During, and After the COVID-19 Pandemic

Author(s): Nidia Lopez Flores (Reykjavik University); María Óskarsdóttir (Reykjavik University); Anna Sigridur Islind (Reykjavik University)

Speaker(s): Nidia Lopez Flores (Reykjavik University)

Discovering Similarities: A Replication Study on Model Stability for Students' Academic Success Prediction

Author(s): Nidia Lopez Flores (Reykjavik University); Elena Tiukhova (KU Leuven); Bart Baesens (KU LEUVEN); Anna Sigridur Islind (Reykjavik University); Monique Snoeck; María Óskarsdóttir (Reykjavik University)

Speaker(s): Nidia Lopez Flores (Reykjavik University)

Innovative Approaches in Computing Education

Wed Oct 14, 15:00 – 16:30 · Akamas C

Chair(s): Krista Kecskemeti (The Ohio State University)

WIP: Student-Informed Assessment Redesign in the Undergraduate Engineering Calculus Sequence with Guided AI Use

Author(s): Keke Wang (Embry-Riddle Aeronautical University)

Speaker(s): Keke Wang (Embry-Riddle Aeronautical University)

CORE-AI: A Collaborative, Open, Reflective, Ethical, and Adaptive Framework for Generative AI in Education

Author(s): Kenneth Neba (Virginia Tech); Mohammed Farghally (Virginia Tech)

Speaker(s): Kenneth Neba (Virginia Tech)

Visualizing the Invisible: An Intelligent Dashboard for Multidimensional Assessment in PBL

Author(s): Davi Maia (Federal University of Pernambuco); Navarro Guimarães (Federal University of Pernambuco); Simone Santos (Federal University of Pernambuco); Carlos Silla (Halmstad University); Pedro Falcão (Federal University of Pernambuco)

Speaker(s): Davi Maia (Federal University of Pernambuco)

Mitigating Operational Myopia in PBL: A Reflective Approach for Metacognitive Calibration

Author(s): Pedro Falcão (Federal University of Pernambuco); Simone Santos (Federal University of Pernambuco); Davi Maia (Federal University of Pernambuco); Carlos Silla (Halmstad University)

Speaker(s): Carlos Silla (Halmstad University)

How to Teach Innovation to Computing Students in Higher Education?

Author(s): Simone Santos (Federal University of Pernambuco); Daniel Silva (Federal University of Pernambuco); Carlos Silla (Halmstad University)

Speaker(s): Carlos Silla (Halmstad University)

WIP: A D a P T: Adaptive Developmental-Design for Authentic Pedagogical Targeted-Translation

Author(s): Anika Harju (University Of Technology Sydney); Camille Dickson-Deane (University of Technology Sydney); Amara Atif (University of Technology Sydney)

Speaker(s): Anika Harju (University Of Technology Sydney)

Supporting Learners (I)

Wed Oct 14, 15:00 – 16:30 · Aphrodite A

Chair(s): Gloria Kim (University of Florida)

Bridging Academic Preparation and Industry Expectations in Software Testing Education

Author(s): Vanice Dalto (Universidade Tecnológica Federal do Paraná); Alinne Souza (UTFPR); Willian Watanabe (Universidade Tecnológica Federal do Paraná); Edson Oliveira Jr (State University of Maringá)

Speaker(s): Vanice Dalto (Universidade Tecnológica Federal do Paraná)

An Empirical Evaluation of an Extended Conceptual Model for Teaching Controlled Experimentation in Software Engineering

Author(s): Carlos Luz (State University of Maringá); Edson Oliveira Jr (State University of Maringá)

Speaker(s): Carlos Luz (State University of Maringá)

Student Perceptions on Improving Communication Skills in a Client-Facing Team-Based and Project-Based Learning Course

Author(s): Arko Barman (Rice University)

Speaker(s): Arko Barman (Rice University)

Evaluating the Effectiveness of an Approach to Teaching Debugging

Author(s): Liia Butler (University of Minnesota); Geoffrey Herman (University of Illinois at Urbana-Champaign)

Speaker(s): Liia Butler (University of Minnesota)

Effectiveness of Formative Self and Peer Assessment in Team-Based and Project-Based Learning

Author(s): Arko Barman (Rice University); Su Chen (University of Texas at Austin); Genevera Allen (Columbia University)

Speaker(s): Arko Barman (Rice University)

Multimodal Monitoring of Soft Skills in PBL Computing Education: An Evidence-Based Solution

Author(s): Davi Maia (Federal University of Pernambuco); Simone Santos (Federal University of Pernambuco); Carlos Silla (Halmstad University); Pedro Falcão (Federal University of Pernambuco)

Speaker(s): Davi Maia (Federal University of Pernambuco)

Supporting Learners (II)

Wed Oct 14, 15:00 – 16:30 · Aphrodite B

Chair(s): Katharine Childs (Raspberry Pi Foundation)

A Classroom-Based Study of CyberGuardian: An Educational Game for Learning Cryptographic Primitives

Author(s): Shan Huang (University of Illinois at Champaign Urbana); Geoffrey Herman (University of Illinois at Urbana-Champaign); Alan Sherman (University of Maryland, Baltimore County (UMBC)); Liia Butler (University of Minnesota)

Speaker(s): Shan Huang (University of Illinois at Champaign Urbana)

Teaching Cryptographic Primitives in Higher Education: A Systematic Literature Review and Instructor Survey

Author(s): Shan Huang (University of Illinois at Champaign Urbana); Geoffrey Herman (University of Illinois at Urbana-Champaign); Alan Sherman (University of Maryland, Baltimore County (UMBC)); Liia Butler (University of Minnesota)

Speaker(s): Shan Huang (University of Illinois at Champaign Urbana)

Why is It Difficult to Learn Cybersecurity Concepts? A Literature Review and Instructor Survey in Cybersecurity Education

Author(s): Shan Huang (University of Illinois at Champaign Urbana); Geoffrey Herman (University of Illinois at Urbana-Champaign); Alan Sherman (University of Maryland, Baltimore County (UMBC)); Liia Butler (University of Minnesota)

Speaker(s): Shan Huang (University of Illinois at Champaign Urbana)

Early Feedback on Empirical Study Design for Novice Researchers Through Experiential Learning

Author(s): Lilian Passos Scatalon (Maringa State University); Maria Lydia Fioravanti (University of São Paulo); Edson Oliveira Jr (State University of Maringá); Ellen Barbosa (University of São Paulo)

Speaker(s): Lilian Passos Scatalon (Maringa State University)

Visualizing Progress, Empowering Students: A Lightweight Tool to Support Self-Regulated Learning in Applied Computing

Author(s): Simone Santos (Federal University of Pernambuco); Vinícius Bezerra (Federal University of Pernambuco); Alixandre Santana (OTH Regensburg)

Speaker(s): Alixandre Santana (OTH Regensburg)

WIP: Interpersonal Behaviors and Psychological Safety in First-Year Engineering Student Teams

Author(s): Siqing Wei (Youngstown State University); Tianze Hu (University of Glasgow); Junqiu Wang (University of North Carolina Charlotte)

Speaker(s): Siqing Wei (Youngstown State University)

Teaching Programming and Critical Thinking in the Age of AI

Wed Oct 14, 15:00 – 16:30 · Adonis

Chair(s): Dominik Deimel (TH Köln)

"I Just Asked AI": Understanding the Role of Generative AI in Student Programming - Patterns, Pitfalls, and Implications for CS Education

Author(s): Janvi Nandwani (University of North Carolina at Charlotte); Nourelislam Zouar (University of North Carolina at Charlotte); Mohamed Shehab (University of North Carolina at Charlotte); Lipsa Sahoo (University of North Carolina at Charlotte)

Speaker(s): Janvi Nandwani (University of North Carolina at Charlotte)

WIP: Logical Thinking in the Age of AI: A Core Competency for Society

Author(s): Jacinto Davila (Universidad de Los Andes); Laura Andrea Cecchi (Universidad Nacional del Comahue); Veronica Dahl (NSERC); Michael Genesereth (University of Stanford); Gopal Gupta (University of Texas at Dallas); Manuel Hermenegildo (Universidad Politécnica de Madrid); Christian Jendreiko (HS Duesseldorf); Robert Kowalski (Imperial College London); David Warren (Stony Brook University)

Speaker(s): Jacinto Davila (Universidad de Los Andes)

WIP: Designing for Accountable AI Use in K-12 Computer Science Teacher Professional Development

Author(s): Anna Baynes (California State University, Sacramento)

Speaker(s): Anna Baynes (California State University, Sacramento)

Omitted for Review: A Digital Educational Game for Programming Education for Adolescent Refugees

Author(s): Lorenzo Bernardo (University of São Paulo); Alessandra Marta de Oliveira (Universidade Federal de Juiz de Fora); Pedro Valle (University of São Paulo)

Speaker(s): Lorenzo Bernardo (University of São Paulo)

Omitted for Review: A Digital Game to Support the Architectural Patterns Education

Author(s): Maria Clara Ribeiro de Menezes (Universidade Federal Fluminense); Lara da Silva Dias (Universidade Federal de Juiz de Fora); Pedro Valle (University of São Paulo); Alessandra Marta de Oliveira (Universidade Federal de Juiz de Fora)

Speaker(s): Maria Clara Ribeiro de Menezes (Universidade Federal Fluminense)

WIP: A Process-Oriented Large Language Model Math Tutor for K-12 Students

Author(s): Dan LO (KENNESAW STATE UNIVERSITY); Yong Shi (Kennesaw State University); Bobin Deng (Kennesaw State University)

Speaker(s): Dan LO (KENNESAW STATE UNIVERSITY)