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Welcome Message from the General Co-Chairs

On behalf of the IEEE Symposium on Artificial Intelligence for Instrumentation and Measurement (AI4IM) 2026 Organizing Committee, and the IEEE Instrumentation and Measurement Society (IMS), it is our great pleasure to welcome you to AI4IM in Amalfi, Italy.

In 2025, IMS decided to launch an AI symposium for its membership due to the rapid advancement of AI in all areas of technology, including Instrumentation and Measurement (I&M). AI4IM 2026 is the first edition of this symposium. Although public discourse and media attention have largely centered on generative AI, particularly Large Language Models (LLMs), AI extends far beyond just LLMs, and includes machine learning, deep learning, reinforcement learning, evolutionary computation, and logic, which are now routinely used in I&M systems for measurement, detection, tracking, monitoring, characterization, identification, sensing, estimation, recognition, or diagnosis of physical phenomena.

These AI-assisted I&M systems offer many benefits due to their data-driven and practical approach, providing feasible solutions for optimizing and calibrating measurement model parameters, improving measurement accuracy, and handling noisy, imprecise, ambiguous, or uncertain signal data. However, they also face many challenges that remain unresolved, such as AI's compatibility with measurement standards, cross-domain transferability and generalization, uncertainty quantification, trustworthiness of AI predictions, data engineering, and more.

AI4IM will provide an opportunity for researchers and practitioners in this field to present their latest innovations, approaches, and results to their peers, while receiving valuable feedback and having the opportunity to further network and collaborate with one another. The symposium also offers two keynotes in the subjects by renowned experts, as well as an industry panel on "AI4IM in the Industry: Practical Applications and Perspectives", where representatives from the industry will showcase their latest advancements in the field. We encourage you to fully participate in all technical sessions, keynotes and the panel.

Our "thank you" goes out to the TPC Chairs Daniele Fontanelli from the University of Trento, Italy, Domenico Capriglione from the University of Cassino, Italy, and Dong Wang from Shanghai Jiao Tong University, China, as well as all TPC members, for their excellent job in reviewing the submissions and selecting the final papers for presentation at the symposium. We also thank all authors who submitted their paper.

Finally, we acknowledge Città di Amalfi for their support, and we sincerely appreciate the sponsorship of the following patrons:

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We hope that all attendees will find the symposium experience informative, stimulating, and enjoyable, both technically and socially, and we encourage everyone to take advantage of this face-to-face opportunity to its fullest.

Have an excellent and productive stay in Amalfi!

General Co-Chairs

Shervin Shirmohammadi, University of Ottawa, Canada
Marco Carratù, University of Salerno, Italy
Ruqiang Yan, Xi'an Jiaotong University, China

Organizing Committee

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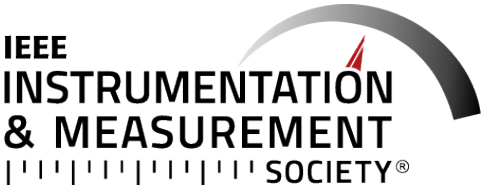

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Keynote Speakers

Shervin Shirmohammadi
University of Ottawa, Canada

Thursday, May 21
9:00 - 10:00

"Artificial Intelligence and Measurement: The Role of Uncertainty"

Shervin Shirmohammadi received his Ph.D. in Electrical Engineering in 2000 from the University of Ottawa, Canada, and after spending 3 years in the industry as a senior architect and project manager, joined as Assistant Professor at the same University, where since 2012 he has been a Full Professor with the School of Electrical Engineering and Computer Science. He is Director of the Discover Laboratory, doing research in AI-assisted measurements, especially vision-based measurement, IoT measurements, and multimedia and network measurements. The results of his research, funded by more than $28 million from public and private sectors, have led to over 450 publications, over 80 researchers trained at the postdoctoral, PhD, and Master's levels, 30+ patents and technology transfers to the private sector, and four Best Paper awards. He was the Founding Editor-in-Chief of the IEEE Open Journal of Instrumentation and Measurement in 2022 and 2023 and the Editor-in-Chief of the IEEE Transactions on Instrumentation and Measurement from 2017 to 2021.

Dr. Shirmohammadi is an IEEE Fellow "for contributions to multimedia systems and network measurements", and recipient of the 2019 George S. Glinski Award for Excellence in Research, the 2021 IEEE IMS Distinguished Service Award, and the 2023 IEEE IMS Technical Award "for contributions to the advancement of machine learning-assisted measurements".

Abstract: As Artificial Intelligence (AI) becomes a more prevalent technology in nearly all applications of technology, some directly or indirectly affecting human safety, the issue of making trustworthy decisions based on AI prediction becomes important, and in some cases vital. Measurement is a fundamental and key enabler of AI, because measurement is used to collect data, which is then used to train an AI model, which in turn is used for indirect measurement such as detection, tracking, monitoring, characterization, identification, sensing, estimation, recognition, or diagnosis of a physical phenomenon. In this talk, we will learn about the concept of uncertainty and how it can make AI systems more trustworthy for real-world deployment. We will study uncertainty from the perspective of both measurement standards, such as VIM and GUM, and AI paradigms of regression, classification, and Large Language Models (LLM). Additionally, we will provide a unified taxonomy of uncertainty quantification methods, and point to some measurement-standard noncompliance in AI literature, which readers need to be aware of. Finally, we go over a few specific examples from existing literature.

Leopoldo Angrisani
University of Naples Federico II

Friday, May 22
9:00 - 10:00

"AI-Driven Measurement Systems: Metrological Validation and Environmental Sustainability"

Leopoldo Angrisani is a Full Professor of Electrical and Electronic Measurements at the Department of Information Technology and Electrical Engineering of the University of Naples Federico II, Italy. He is also Chair of the Board of the Ph.D. Program ICTH – Information and Communication Technology for Health at the same university. For many years, he served as Director/General Manager of CeSMA – Center of Advanced Measurement and Technology Services of the University of Naples Federico II. He is currently the Coordinator of the Technical/Scientific Committee of MedITech, one of the eight Italian Competence Centers on Industry 4.0 enabling technologies.

His current research interests include: (i) the role of AI in measurement science; (ii) measurement uncertainty in AI-based measurement processes; (iii) the impact of quantum technologies on measurements; (iv) metrological characterization of advanced human–machine interfaces; (v) measurements for IoT, Industry 4.0, and Health 4.0 applications; and (vi) cyber-physical measurement systems.

He is a Fellow of the IEEE Instrumentation and Measurement Society and the IEEE Communications Society. For several years, he chaired the IEEE Instrumentation and Measurement Italy Chapter and served as General Chair of numerous international conferences on measurement-related topics. He has authored or co-authored approximately 350 scientific papers, more than one third of which published in high-impact international journals, and he has been invited to deliver keynote speeches at various international scientific congresses. He is a Fellow of the European Academy of Sciences, Chair of the Italian Association GMEE – Electrical and Electronic Measurements Group, and a corresponding member of the Accademia Pontaniana in Naples, the oldest Italian academy with almost 600 years of history. In 2009, he received the IET Communications Premium Award, and in 2021 he was honored with the prestigious IEEE Instrumentation and Measurement Society Technical Award.

Abstract: Artificial Intelligence (AI) is profoundly reshaping measurement science, enabling the creation of measurement models for scenarios in which direct measurement is complex, costly, or infeasible. However, the adoption of AI in metrology introduces new challenges that go beyond traditional calibration and verification practices.

This keynote focuses on two critical and complementary dimensions for the responsible use of AI-enabled measurement systems: metrological validation and environmental sustainability.

The first part of the talk addresses metrological validation, presenting a structured approach for assessing the trustworthiness and compliance of AI-based measurement models. Emphasis is placed on how AI components interact with the established calibration framework defined in the Guide to the Expression of Uncertainty in Measurement (GUM). Practical methodologies are presented to determine whether AI-induced deviations remain acceptable with respect to the target uncertainty of the application—an essential requirement to ensure metrological traceability and reliability.

The second part highlights the environmental implications of deploying AI-enabled measurement systems, a topic still largely unexplored in the measurement community. The talk introduces a framework that integrates principles from Life Cycle Assessment (LCA) to evaluate and quantify the environmental footprint across the entire AI-measurement pipeline—from data acquisition and model training to inference and deployment. This enables a transparent assessment of the trade-offs between measurement performance and environmental impact.

Overall, the keynote provides researchers and practitioners with guidelines and practical tools to design and deploy AI-driven measurement systems that are not only accurate and trustworthy but also environmentally responsible.

Technical Program: Thursday, May 21

8:50 - 9:00
Opening and Welcome

9:00 - 10:00
Keynote 1: Shervin Shirmohammadi, University of Ottawa, Canada
"Artificial Intelligence and Measurement: The Role of Uncertainty"
Chair: Marco Carratù (University of Salerno, Italy)

10:00 - 11:00
S1: AI-Assisted Measurement Systems and Applications I
Chairs: António Espírito Santo (University of Beira Interior, Portugal), Vincenzo Gallo (University of Salerno, Italy)

Small-Sample Model-Data Integration Transfer Learning for Thrust Bearing Raceway Fault Diagnosis
Jiang Yixin, Tao Liu, Sr., Jun Zhou, Xiaoqin Liu, Jianlin Mao and Xin Chen (Kunming University of Science and Technology, China)

Uncertainty-Aware Validation of PPG as a Surrogate for ECG: A Clustering-Based Study
Virginia Negri, Alessandro Mingotti and Roberto Tinarelli (University of Bologna, Italy); Chiara Bencivenga (Sapienza University of Rome, Italy); Zaccaria Del Prete (SAPIENZA University of Rome, Italy); Livio D'Alvia (Dept. of Well-being, Health and Environmental Sustainability (BeSSA))

Abnormal Sound Detection for Microfans Based on Persistence-Guided Interpolation Resampling
Yu Guo, Wenlong Dong and Xin Chen (Kunming University of Science and Technology, China); Chuanhui Wu (P&R Measurement Technology Corporation Limited, China); Liyuan Liu and Tingwei Liu (P&R Measurement Technology Corporation Ltd, China)

A quantitative comparison of different Machine Learning and Deep Learning models for SOH and RUL Estimation of Lithium-Ion Batteries
Lorenzo Ciani, Fabio Canzanella and Gabriele Patrizi (University of Florence, Italy)

11:00 - 11:30
Thursday AM Coffee Break

11:30 - 13:00
S2: AI-Assisted Soft Sensors and Estimation
Chair: Irida Shallari (Mid Sweden University, Sweden)

Challenges of Building AI-Based Virtual Temperature Sensors for Nanopositioning Systems
Amin Suaad (IMMS, Germany); Silvia Krug (Mid Sweden University, Sweden & IMMS GmbH, Germany); Tino Hutschenreuther (IMMS, Germany)

Frequency-Aware Virtual Instrument for Remaining Useful Life Estimation: Soft-Sensing with Allan Deviation-Based Stability and Noise Robustness
Abdul Karim (Hallym University, Korea (South)); Marco Carratù and Vincenzo Gallo (University of Salerno, Italy); Antonio Pietrosanto (University of Salerno & CEO of Metering Research srl, Italy); Consolatina Liguori (University of Salerno, Italy)

AI-Driven Soft Sensors: Applications, Validation, and Metrological Challenges
Pierre Sedi Nzakuna (University of Salerno, Italy); Merjéh Eyunkoel Lasaba, Victoria Basemenane and Emmanuel Mutelezi (University of Kinshasa, Congo (Democratic Republic, Zaire)); Vincenzo Paciello (University of Salerno, Italy); Vital Angelo Kuti Lusala (Université de Kinshasa, Congo (Democratic Republic, Zaire))

Attention-Based Representation Learning for Noninvasive Running-In Estimation
Cassiano Montibeller and Gabriel Thaler (Universidade Federal de Santa Catarina, Brazil); Rodolfo C.C. Flesch (UFSC, Brazil)

Pressure Field Reconstruction in Turbulent Flows Using Integral Measurement-Based Physics Informed Neural Networks (PINNs)
David Gomes (Universidade da Beira Interior, Portugal); António Espírito Santo and Jose Pascoa (University of Beira Interior, Portugal)

Adaptive Multidimensional Measurements with Validated Uncertainty: A Machine-Learning-Enabled Framework
Vincenzo Gallo and Vincenzo Paciello (University of Salerno, Italy); Manuel Marschall (Physikalisch-Technische Bundesanstalt, Germany)

13:00 - 14:30
Thursday Lunch

14:30 - 16:00
S3: AI-Assisted Measurement Systems and Applications II
Chair: Mattias O'Nils (Mid Sweden University, Sweden), Antonio Pietrosanto (University of Salerno & CEO of Metering Research srl, Italy)

FaultCollaborator: A Collaborative Intelligent Agent Integrating Large Language Models and Domain-Specific Models for Intelligent Fault Diagnosis
Lei Chen, Tianfu Li, Tao Liu, Sr., Xiaoqin Liu and Yu Guo (Kunming University of Science and Technology, China); Ruqiang Yan (Xi'an Jiaotong University, China)

Early Fault Warning for Gearboxes in Real-world Wind Turbines Using Spatio-Temporal Causal Reasoning Network
Guo Yang (Guangdong University of Technology, China); Zhibin Zhao (The State Key Laboratory for Manufacturing Systems Engineering, China); Yong Zhong (South China University of Technology, China); Wei Feng (Guangzhou Mechanical Engineering Research Institute Co, China); Ruxu Du (Guangdong Janus Biotechnology Co. Ltd, China); Yaohua Deng (Guangdong University of Technology, China)

Sound Based Machine Learning for Inserts Wear Detection in Interrupted Cutting
Andrea Gambardella (RISE Research Institutes of Sweden, Sweden); Seyed Jalaleddin Mousavirad (Mid Sweden University, Sweden); Ulf Jennehag (RISE, Sweden); Jan Lundgren (Mid Sweden University, Sweden)

Adaptive Sliding-Window Local Nonlinear Fitting of Encoder Time Increments for Bearing Fault Diagnosis under Variable-Speed Conditions
Anlin Tang, Xin Chen, Yu Guo, Zhengming Xiao, Tao Liu, Sr. and Shujin Tian (Kunming University of Science and Technology, China)

Low-complexity Auto-Encoder for Detection of Anomalous Heart Beats in Compressed ECG Data
Claudio Narduzzi (Universita' di Padova, Italy); Giada Giorgi (University of Padova, Italy); Alessandra Galli (Eindhoven University of Technology, The Netherlands)

Security Risks in Machining Process Monitoring: Sequence-to-Sequence Learning for Reconstruction of CNC Axis Positions
Lukas Krupp and Rickmar Stahlschmidt (RPTU Kaiserslautern-Landau, Germany); Norbert Wehn (University of Kaiserslautern-Landau (RPTU), Germany)

16:00 - 16:30
Thursday PM Coffee Break

16:30 - 18:30
S4: Uncertainty Quantification in AI-Assisted Measurements
Chairs: Rodolfo C.C. Flesch (UFSC, Brazil), Claudio Narduzzi (Universita' di Padova, Italy)

Incorporating Measurement Uncertainty into Uncertainty-Aware GANs: A Metrology-Driven Approach
Virginia Negri, Alessandro Mingotti, Roberto Tinarelli and Lorenzo Peretto (University of Bologna, Italy)

Calibrated AI Soft Sensors for Property Valuation under Sparse and Noisy Market Signals
Max Owen Tang (University of Waterloo, Canada); Somin Lee (University of Toronto, Canada); Soyoon Lee (University of Waterloo, Canada)

Ensemble-Based Uncertainty Estimation for Deep-Learning Measurement Systems in Vision Applications
Marco Carratù, Vincenzo Gallo, Valter Laino, Consolatina Liguori and Vincenzo Paciello (University of Salerno, Italy)

Uncertainty-Aware Rotation Estimation for YOLO-Based Oriented Object Detection
Vincenzo Gallo, Valter Laino, Giuseppe Di Leo and Paolo Sommella (University of Salerno, Italy); Antonio Pietrosanto (University of Salerno & CEO of Metering Research srl, Italy); Minna Rollins (University of West Georgia, USA)

Uncertainty Evaluation in classification-based ML measurements: a first step towards a GUM-based methodology
Leopoldo Angrisani, Pasquale Arpaia and Maria Cacciapuoti (University of Naples Federico II, Italy); Sabatina Criscuolo (National Research Council of Italy, Italy & University of Naples Federico II, Italy); Mauro D'Arco, Egidio De Benedetto and Luigi Duraccio (University of Naples Federico II, Italy)

MetroDef: Metrologically Grounded Synthetic Surface-Defect Data
Henri Vennikas (TTK University of Applied Sciences, Estonia); Olev Martens (Tallinn University of Technology, Estonia); Yannick Le Moullec (Tallinn University of Technology (TalTech), Estonia)
Energy-Guided Wavelet Activation-Pooling for Intelligent Bearing Fault Diagnosis
Jiawei Pan, Xunchun Bai, Zuogang Shang, Chao Teng and Ruqiang Yan (Xi'an Jiaotong University, China)

An AI-Based Automated Measurement Tool for the Morphological Characterization of Intestinal Organoids
Luana Conte (University of Palermo, Italy); Giorgio De Nunzio (University of Salento, Italy); Giuseppe Raso and Donato Cascio (University of Palermo, Italy)

19:00 - 20:30
Welcome Reception
Arsenal of the Republic of Amalfi

Technical Program: Friday, May 22

9:00 - 10:00
Keynote 2: Leopoldo Angrisani
University of Naples Federico II
"AI-Driven Measurement Systems: Metrological Validation and Environmental Sustainability"
Chair: Shervin Shirmohammadi (University of Ottawa, Canada)

10:00 - 11:00
AI4IM in the Industry: Practical Applications and Perspectives
Chair: Marco Carratù (University of Salerno, Italy)

Industry demo presentations from:

- STMicroelectronics
- Siemens
- Chroma ATE Inc.

11:00 - 11:30
Friday AM Coffee Break

11:30 - 13:00
S5: Best Paper Award Finalists
This session is for the finalist presentations. The awards will be announced during the Gala Dinner.
Chairs: Domenico Capriglione (University of Cassino and Southern Lazio, Italy), Daniele Fontanelli (University of Trento, Italy)

Indirect Rail Temperature Estimation Using Passive Thermal Sensing and Machine Learning
Ash Ziqin Tang (Mid Sweden University, Sweden & Mittuniversitetet, Sweden); Rikard Hamrin, Irida Shallari, Seyed Jalaleddin Mousavirad and Mattias O'Nils (Mid Sweden University, Sweden)

On Uncertainty-Aware ML-Based Systems: a Metrology Perspective
Songqun Gao, Andrea Del Prete, Daniele Fontanelli and Dario Petri (University of Trento, Italy)

Data-Driven Signal Reconstruction for Biased Sensors
Michal Brzosko, Carmen Maldonado Ordonez and Merten Stender (Technische Universität Berlin, Germany); Mathis Briatte, Joseph Frangieh and Jean-François Brunel (University of Lille, France)

DAEE: Degeneracy-Aware Entailment Entropy as Uncertainty Quantification for LLM-Assisted Measurements
Fan Wang (National Tsing Hua University, Taiwan); Shervin Shirmohammadi (University of Ottawa, Canada); Cheng-Hsin Hsu (National Tsing Hua University, Taiwan)

Using motor current for detecting handling-errors in electronic pipettes
Marcel von Lehe (Helmut Schmidt University & Hochschule Für Angewandte Wissenschaften Hamburg, Germany); Udo van Stevendaal (Hochschule Für Angewandte Wissenschaften Hamburg, Germany); Simon zum Felde (Eppendorf Liquid Handling GmbH, Germany); Maria Maleshkova (Helmut Schmidt University, Germany)

Detection and Classification of Events at Phasor Measurement Unit Level
Paolo Castello (University of Cagliari, Italy); Guglielmo Frigo (Swiss Federal Institute of Metrology METAS, Switzerland); Paolo Attilio Pegoraro and Alessandro Tolu (University of Cagliari, Italy)

13:00 - 14:30
Friday Lunch

14:30 - 16:00
S6: AI-Assisted Measurement Systems and Applications III
Chairs: Paolo Castello (University of Cagliari, Italy), Ruqiang Yan (Xi'an Jiaotong University, China)

CNN Models for Microphone Array Covariance Matrix Upsampling and Acoustic Imaging
Marianthi Adamopoulou (Mid Sweden University, Sweden); Parthasaarathy Sudarsanam (Tampere University, Finland); David Diaz-Guerra (University of Zaragoza, Spain); Meng Jiang (Mid Sweden University, Sweden); Archontis Politis (Tampere University, Finland); Seyed Jalaleddin Mousavirad (Mid Sweden University, Sweden); Tuomas Virtanen (Tampere University, Finland); Jan Lundgren (Mid Sweden University, Sweden)

AI-Based Visual Measurement System for Quality Assessment in Agrifood Production
Daniele Buonocore and Giuseppe Ciavolino (University of Salerno, Italy & Hippocratica Imaging S.r.l, Italy); Matteo Ferro (Hippocratica Imaging SRL, Italy & University of Salerno, Italy); Giuseppe Di Leo, Vincenzo Gallo and Paolo Sommella (University of Salerno, Italy)

Metrological Assessment of Rail Clip Fasteners via Monocular 3D Reconstruction
Vincenzo Gallo (University of Salerno, Italy); Irida Shallari (Mid Sweden University, Sweden); Valter Laino (University of Salerno, Italy); Seyed Jalaleddin Mousavirad (Mid Sweden University, Sweden)

Acoustic Emission-based Lift-Off Detection in Gas Foil Bearings using Contact Voltage Labels
Martin L Kliemank, Majid Ahmadzadeh and Robert Liebich (Technische Universität Berlin, Germany); Clemens Guehmann (Technische Universitaet Berlin & Chair of Electronic Measurement and Diagnostic Technology, Germany)

Fault Diagnosis of Rolling Bearings Based on Log-Gabor Phase Motion Estimation and Parameter-Adaptive MCKD
Kailun Zhang, Dr. Zhihai Wang, Sen Wang, Xiaoqin Liu and Tao Liu, Sr. (Kunming University of Science and Technology, China)

Preliminary Development of an Artificial Intelligence-Based Measurement System for Automated Feed Monitoring and Feed Weight Estimation
Francesco Bonavolontà (Università di Napoli Federico II, Italy); Alessio Cotticelli (University of Naples Federico II, Italy); Tanja Peric and Alberto Prandi (Udine, Italy); Maria Teresa Verde and Annalisa Liccardo (University of Naples Federico II, Italy); Lorenzo Coppola (University of Naples, Federico II, Italy)

16:00 - 16:30
Friday PM Coffee Break

16:30 - 18:00
S7: AI and Machine Learning in I&M
Chairs: Francesco Bonavolontà (Università di Napoli Federico II, Italy), Gabriele Patrizi (University of Florence, Italy)

A Secure Immersive Learning Environment for Enhancing Practical Learning Experience
Arun Sankar Muttathu Sivasanakara Pillai, Haider Al-juboori, Mujahid Tabassum, Chris Kufazvinei and Rejwanul Haque (South East Technological University, Ireland); Diarmuid O' Briain (South East Technological University, Ireland)

A Denoising Diffusion Implicit Model-Based Method for Denoising Rotating Machinery Vibration Signals
Linwen Cui, Haoxuan Zhou and Tao Liu, Sr. (Kunming University of Science and Technology, China); Junlei Chen (Petrochina Southwest oil&Gasfield Company, China); Jun Zhou and Zhengming Xiao (Kunming University of Science and Technology, China)

CycleGAN-based cross-domain adaptation for echocardiographic segmentation across ultrasound systems
Edoardo Spairani and Edoardo Bosco (University of Pavia, Italy); Francesco Podda (Università di Pavia, Italy); Alessandro Ravera (University of Pavia, Italy); Alessio Damiano (Cardiology Unit, Voghera Hospital, Italy); Giovanni Magenes and Giulia Matrone (University of Pavia, Italy)

Data-Efficient Fault Classification In End-Of-Line Testing Using Segmentation-Driven Feature Transfer
Deepti Kunte (Siemens Industry Software NV & KU Leuven, Division LMSD, Belgium); Bram Cornelis and Claudio Colangeli (Siemens Industry Software NV, Belgium); Konstantinos Gryllias (KU Leuven & DMMS Group, Flanders Make, Belgium)

Wavelet-Based Diffusion for Unsupervised Machine Anomaly Detection
Chang Guo and Jingcheng Wen (Xi'an Jiaotong University, China); Chen Zhang (Engineering University of PAP, China); Zhibin Zhao (The State Key Laboratory for Manufacturing Systems Engineering, China); Xingwu Zhang (Xian Jiaotong University, China)

Lightweight Machine Learning Pipeline for WGM Micro-Laser Sensing: A Feasibility Study on IFN-γ Detection
Alessio Miele, Filippo Milano and Mario Molinara (University of Cassino and Southern Lazio, Italy); Luigi Ferrigno (University of Cassino, Italy); Stefano Ferretti (National Council of Research, Italy); Neda Ghofraniha (CNR-IPCF, Italy)

20:30 - 23:30
Gala Dinner & Best Paper Awards (Sponsored by Chroma)
Le Nereidi

Technical Program: Saturday, May 23

9:00 - 10:30
S8: AI-Assisted Measurement Systems and Applications IV
Chairs: Valter Laino (University of Salerno, Italy), Jan Lundgren (Mid Sweden University, Sweden)

Machine Learning for Non-Intrusive Profiling of IoT Devices in Noisy Environments
Vincenzo Rega, Luca Tari, Domenico Capriglione and Mario Molinara (University of Cassino and Southern Lazio, Italy); Cesare Davide Pace (University of Cassino, Italy); Fabrizio Marignetti (Università degli studi di Cassino e del Lazio Meridionale, Italy)

GPS-Assisted IMU Trajectory Estimation via Velocity-Correction LSTM on the RoNIN Benchmark
Nadia Yaghoobi and Edward Park (Simon Fraser University, Canada)

Hybrid Anomaly Detection for Smart Meters Using Predictive Residuals and Contextual Statistics
Sadegh Javadi (Energinium AB, Sweden); Saleh Javadi (Blekinge Institute of Technology, Sweden); Gideon Mbiydzenyuy (University of Borås, Sweden)

Wind Farm Anemometer Failure Detection Based on a Probabilistic Denoising Autoencoder
Eugênio Piveta Pozzobon, Eduardo Mello Martins, Humberto Pinheiro, Thiago Alexandro Nascimento De Andrade, Frederico Menine Schaf and Claiton Moro Franchi (Federal University of Santa Maria, Brazil); João Paulo Dias (Shippensburg University of Pennsylvania, USA); Roberto Silveira (Brazil)

Towards the Development of an AI-based Intrusion Detection System for Electric Vehicle Charging Infrastructures
Luca Tari (University of Cassino and Southern Lazio, Italy); Alessandro Brighente (University of Padova, Italy); Niccolò Borgioli (University of Padua, Italy); Domenico Capriglione (University of Cassino and Southern Lazio, Italy); Mauro Conti (University of Padova, Italy); Denis Donadel (University of Verona, Italy); Gianfranco Miele (University of Cassino and Southern Lazio, Italy)

Reliability of Monocular RGB-to-Geometry Pipelines for Timber Log Length Measurement
Astile Peter (Mid Sweden University, Sweden & University of Salerno, Italy); Irida Shallari (Mid Sweden University, Sweden); Marco Carratù (University of Salerno, Italy); Jan Lundgren (Mid Sweden University, Sweden)

10:30 - 11:00
Saturday AM Coffee Break

11:00 - 12:30
S9: AI-Assisted Measurement Systems and Applications V
Chair: Daniele Buonocore (University of Salerno, Italy & Hippocratica Imaging S.r.l, Italy)

Automatic classification of transistor die temperature based on thermograms using the YOLO algorithm
Krzysztof Dziarski and Arkadiusz Hulewicz (Poznan University of Technology, Poland)

Robustness of Graph Deviation Network to ghost spike injections in brain organoid multi-electrode array signals
Arianna Mencattini and Paola Casti (University of Rome Tor Vergata, Italy); Alessia Riccardi and Giorgia Curci (Tor Vergata University of Rome, Italy); Wendiao Zhang and Qingtuan Meng (University of South China, China); Eugenio Martinelli (Tor Vergata University of Rome, Italy)

AI based optimization of thin films for solar cells: The historical knowledge based system SOLEIL for the control of a-SiH PECVD with in-situ TRMC measurement based feedback
Heinz-Christoph Neitzert and Arpana Singh (Salerno University, Italy); Marinus Kunst (France)

Deep Learning Optical Flow Method with Eulerian Magnification for Non-Contact Vibration Measurement in Pipelines
Cassiano Montibeller (Universidade Federal de Santa Catarina, Brazil); Rodolfo C.C. Flesch (UFSC, Brazil); Gabriel Thaler (Universidade Federal de Santa Catarina, Brazil)

Measuring Passenger Touch Behaviors in Aircraft Cabins with Domain-Adapted Vision Models
Daniel G Kyrollos (University of Ottawa & National Research Council, Canada); Shelley Roberts, Ryszard Dabkowski and Anya Pejemsky (National Research Council, Canada); Steve Gwynne (University of Greenwich, United Kingdom (Great Britain))

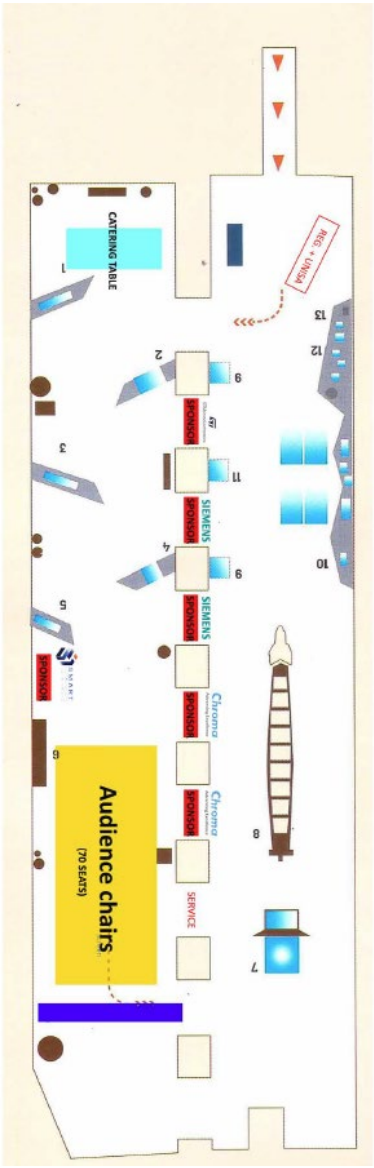
12:30 - 12:45
Closing and AI4IM 2027 Announcement

12:45 - 14:00
Saturday Light Lunch

14:30 – 16:30
Amalfi Visit

The tour begins at the Arsenal, one of the oldest surviving arsenals in continental Europe and a historic symbol of the Republic of Amalfi, now serving as a museum showcasing the city's Roman, medieval, and maritime history. The tour will then continue through the charming streets of Amalfi to the Cathedral complex, including the Cloister of Paradise, the Diocesan Museum, the Crypt of Saint Andrew, and the Baroque-style Cathedral.

Floorplan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