



## 3<sup>rd</sup> Emerging Tech Conference (ETCEI) – 2024

### Program

#### Thursday 17/10/2024 – DAY 1

09:00 – 09:30 Registrations + Welcome coffee

09:30 – 10:00 Opening remarks

**Prof. Charalampos BILLINIS** | Rector, University of Thessaly

**Prof. George STAMOULIS** (Electrical & Computer Engineering Dep, University of Thessaly) | Conference Overview

**Dr. Manolis ZERVAKIS** | President Hellenic Emerging Technologies Association

*Master of Ceremony: Prof. STAMOULIS*

10:00 – 10:40 Keynote Speech: **Supercharging IA\* for a GenAI World**

\*Infrastructure Architecture

**Dionysios DIAMANTOPOULOS** | Staff Research Scientist, IBM Research Europe

10:40 – 11:50 Paper Presentations: **S1.1 | Machine Learning & AI**

Session Chairs: **Paris KITSOS & Chris THEOCHARATOS**

10:40 - 10:55 Session Presentation - **Georgios FLAMIS**

10:55 – 11:05 21 Benchmarking EdgeAI platforms using Arduino Nano 33 BLE  
*Rohitashva Singh Jhala and Jan Cordes*

11:05 – 11:15 31 Personalization in Distributed tinyML Applications via Adaptive Clustered Federated Learning  
*Alexios Filippakopoulos, Dimitris Kastaniotis, Giorgos Andrianakos and Christos Theocharatos*

11:15 – 11:25 15 Leveraging Empirical Mode Decomposition for Time Series Anomaly Detection in IoT and Smart City Applications  
*Ioannis Stasinopoulos and Ilias Theodorakopoulos*

11:25 – 11:35 14 Edge-Optimized NILM: Combining Structured Pruning and Quantization for Energy Disaggregation  
*Sotirios Athanasoulis, Dimitris Karagkounis, George Samaras and Isidoros Kokos*

11:35 – 11:45 32 Federated Learning for Workload Forecasting as enabler for Network Service Management  
*Dimitrios Brodimas, Dimitrios Kapolos, Eleftherios Mylonas, Alexios Birbas and Michael Birbas*

11:45 - 11:50 Closing Remarks

11:50 – 12:20 WORKSHOP: **AI and Industrial Applications**

**Sotiris BEKOS** | Qubber, **Dimitris GARAGOUNIS** | Oliveex

*Moderator: Dimitrios KAREKLIDIS, Journalist*

12:20 – 13:05 Paper Presentations: **S1.2 | Internet-of-Things & AI**

Session Chairs: **Gregory DOUMENIS & Sotiris BANTAS**

12:20 - 12:30 28 Short-term weather forecasting in maritime environments exploiting a ML-based model at the Edge  
*Vasiliki Naskari, Ioannis Masklavanos, Stavros Adam and Gregory Doumenis*

12:30 - 12:40 24 Edge deep learning for low capabilities devices  
*Fotis Filippou, Fotis Foukalas and Theodoros Tsiftsis*

12:40 - 12:50 7 Comprehensive comparison of YOLO-based object detection in edge applications: A use case on free parking spots  
*Vasilios Karvelas and Christoforos Kachris*

12:50 - 13:00 2 Computing the Cleanness of the Photovoltaic (PV) Panels  
*Alexandros Tsaqkaropoulos, Christoforos Vasilakis, Georgios Venitourakis, Tzouma Amrou, Georgios Konstantoulakis, Panagiotis Golemis and Dionysios Reisis*

13:00 - 13:05 Closing Remarks

13:05 – 14:00 Lunch Break

14:00 – 14:20 Invited Speech: **Optical inspection systems in Industry– Current technologies, Market demands, Challenges**  
**Sotirios BEKOS** | Managing Director at QUBBER

14:20 – 15:30 Paper Presentations: **S1.3 | Field Devices**

Session Chairs: **Thomas NOULIS & Fotis PLESSAS**

14:20 - 14:35 Session Presentation - **George KERAMIDAS**

14:35 - 14:45 33 Using AMR Sensors for Surface Residual Stress Determination in Steel Constructs  
*Spyros Angelopoulos, Gregory Doumenis, Aphrodite Ktena and Evangelos Hristoforou*

14:45 - 14:55 3 A novel approach on continual operation of compromised ECU functions: REWIRE Perspective  
*Athanasios Athanasiadis, Christoforos Koutsianoudis, Konstantinos Lamaris and Tilemachos Matiakis*

14:55 - 15:05 5 A Low Power FPGA Implementation of LDPC Encoder for Space Applications  
*Christos Sidiras and Vasilis Pavlidis*

15:05 - 15:15 8 Evaluation and DSP Benchmarking of the European Radiation-Hardened NG-ULTRA FPGA  
*Anastasios Xynos, George Lentaris and Dimitrios Soudris*

15:15 - 15:25 26 Autonomous Multi Source Energy Harvesting Multi-Sensor  
*Ioannis Masklavanos, Theodoros Georgiadis, Vasiliki Naskari, Fotios Vartziotis and Gregory Doumenis*

15:25 - 15:30 Closing Remarks

15:30 – 16:00 Panel Discussions: **Using AI to boost and bolster the agrifood sector**

**Yiorgos BONTZIOS** | Agroverse, **George VARVARELIS** | CNH, **Sotiris BANTAS** | Centaur, **Dionysis BOCHTIS** | Farm- B  
*Moderator: Ioannis Anastasiou, Vice Governor of Digital Governance and Citizen Services for the Region of Thessaly*

16:00 – 16:45 **Poster Presentations**

11 Frequency and Procedure of Formative Assessment: Impact on Student Experience  
*Iris Gertner*

17 Towards a vision system for olive fruit selection for enhanced olive oil production  
*Dimitrios Kosmopoulos, Erion-Vasilis Pikoulis and Kostas Blekos*

18 Preliminary Hazard Analysis and Functional Safety Concept for a 2nd Life Battery Energy Storage System  
*Rigas Franqoudis, Dimitra Spanoudaki, Sotiris Athanasiou and Elisavet Elvanoglou*

22 SAND5G - Security Assessments for Networks and Services in 5G Networks: From 5G to Edge  
*Kostas Lampropoulos, Kostas Pournaras, Christos Tranoris, Odysseas Koufopavlou, Spyros Denazis and Paris Kitsos*

25 Nanotechnology processes with atomic-scale precision: Access to new tools and clean-room infrastructure for researchers and the Industry  
*Chloi Zormpa, Sotiris Mouchtouris, Vasilios Vamvakas and Evangelos Gogolides*

34 PerCV.ai Platform: Leveraging Cloud and Edge Computing to Build Vision AI Solutions at Scale  
*Thomas Charisis, Dimitris Kastaniotis and Christos Theocharatos*

35 Exploiting the triboelectric phenomena for energy harvesting and sensing  
*Christos Tsamis*

16:45 – 17:50 Paper Presentations: **S1.4 | Innovative Approaches**

Session Chair: **Gregory DOUMENIS**

16:45 - 17:00 Session Presentation – **Evangelos HRISTOFOROU**

17:00- 17:10 27 Charting A New Course for Food Logistics: Enhancing River and Ocean Transport Efficiency with CFD-Based Digital Twins, with examples from soybean logistics in the Amazon River  
*Sotiris Bantas, Miltiadis Xynopoulos, Alexandros Dimitriou, Antonis Sioutas, and Efstathios Kaloudis*

17:10 - 17:20 9 Review of Novel Battery Balancing Topologies  
*Evi Keramida, Sotirios Athanasiou and Fotis Plessas*

17:20 - 17:30 20 BoM Reduction for the 5G Radio Unit  
*Kostas Vryssas and Kostas Papathanasiou*

17:30 - 17:40 29 Development and validation of the AcubeSAT nanosatellite communications module  
*Georgios Kikas, Christina Athanasiadou, Ilias Kamoisis, Ioannis Dimoulios and Alkis Hatzopoulos*

17:40 - 17:50 10 Computer vision-based identification of motorcycle helmets using a TPU-based platform  
*Sotiris Michalakeas and Christoforos Kachris*

17:50 – 18:10 Invited Speech: **Dimitrios MOURTZIS** | Professor, Department of Mechanical Engineering and Aeronautics, University of Patras

18:10 - 18:20 Closing Remarks for Day 1 Presentations | **Gregory DOUMENIS** | Co-chair

19:00– 22:00 **Networking Cocktail at the 1910 Lifestyle Hotel** | Dimitriados 25 & 54 Sintagmatos, Volos, Greece

**END of DAY 1**



## Friday 18/10/2024 – DAY 2

09:00 – 09:30 Registrations + Welcome coffee

09:30 – 10:20 Paper Presentations: **S1.5 | Circuits/Systems & CAD**

Session Chairs: **Nestor EVMORFOPOULOS & Christos SOTIRIOU**

- 09:30 – 09:40 6 Design and Electromagnetic Analysis of Interconnects in Silicon Interposer  
*Nefeli Metallidou, Thorsten Baumheinrich and Vasilis Pavlidis*
- 09:40 – 09:50 19 Continuous and Symmetric Drain Current Compact Model for Nanoscale Triple-Gate FinFETs  
*Militadis K. Nakos, Andreas Tsormpatzoglou, Theodoros A Oproglidis, Dimitrios H. Tassis and Charalabos A. Dimitriadis*
- 09:50 – 10:00 30 A low-rank balanced truncation approach for large-scale RLCK model order reduction based on extended Krylov subspace and a frequency-aware convergence criterion  
*Christos Giamouzis, Dimitrios Garyfallou, Nestor Evmorfopoulos and Georgios Stamoulis*
- 10:00 – 10:10 13 An Efficient Design Methodology for RF and mmWave Voltage – Controlled Oscillators  
*Alexandros Chatzis, Anastasios Michailidis, Vasiliki Gogolou and Thomas Noulis*
- 10:10 – 10:20 12 Automated Low-Noise Amplifier Design Methodology for Wireless Sensor Nodes  
*Panaqiota Tsimpou, Anastasios Michailidis, Vasiliki Gogolou and Thomas Noulis*

10:20 – 10:40 Invited Speech: **Accelerating Innovation: NVIDIA's Role in Shaping the Future of AI and High-Performance Computing**  
**Paraskevas BAKOPOULOS** | Director of NVIDIA Greece

10:40 - 12:30 **Career Day**

- 10:40 – 10:50 Liaison Office, University of Thessaly | TBC
- 10:50 – 11:20 **Mastering the job market: High-specialization skills in emerging tech for successful HR interviews**  
**Angeliki Mantse**, HR Manager & **Andreas Albanis**, Project and Networking Manager | JOIST Innovation Park
- 11:20 – 11:35 **CENTAUR** | Faye Beligianni, Global customer support manager
- 11:35 – 11:50 **KENOTOM** | Tilemachos Matiakis, Co-Founder & Technical Director
- 11:50 – 12:00 **ANSYS** | TBC
- 12:00 – 12:10 **CAPGEMINI** | Xanthos Vlachos, Senior Electronics Semiconductor Engineer  
Georgia Psarra, HR
- 12:10 – 12:20 **POWER FACTORS** | Eftichia Goula, Talent Acquisition Specialist  
Giota Karagianni, Talent Acquisition Specialist
- 12:20 – 12:30 **SIELMAN** | TBC

12:30 – 12:45 Coffee Break

12:45 – 13:05 Invited Speech: **The Adventure of 5G Radios in a Greek Perspective**  
**Manolis FRANTZESKAKIS** | CEO Argosemi

13:05 – 13:35 **In conversation** **AI challenges and opportunities in semiconductor manufacturing**  
**Alexander YPMA & Dimitra GKOROU** | Data & Analytics Line Manager at ASML, The Netherlands

13:35 – 14:15 Round table **Silicon entrepreneurs: Leveraging CHIPS Act**  
**Dimitrios GARYFALLOU** | EDALOGIC, **Christos ANDROULIDAKIS** | Alma Technologies, **Tilemachos MATIAKIS** | KENOTOM,  
**Nikos SKETOPOULOS** | Silicon Highway Technologies  
*Moderator: Dr. Sotiris BANTAS, CEO Centaur*

14:15 - 14:25 Closing Remarks for Day 2 Presentations | **Nestor EVMORFOPOULOS** | Co-chair

14:25 – 14:35 **Conference Summary Report**  
**Prof. George STAMOULIS**  
**Edge Intelligence 2025 announcement**  
**Dr. Emmanuel ZERVAKIS**

14:35 – 15:30 Late Lunch

END of CONFERENCE

