



3rd 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 Athanasoulas, 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 Lamarinis 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 - 12:10 **Career Day**

- 10:40 – 10:50 **Liaison Office, University of Thessaly** | Chrissa Voulgari Career Counselor, Career Office - University of Thessaly
- 10:50 – 11:20 **Mastering the job market: High-specialization skills in emerging tech for successful HR interviews**
Angeliki Mantse, HR Manager & **Andreas Almpanis**, 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 **CAPGEMINI** | Xanthos Vlachos, Senior Electronics Semiconductor Engineer
Georgia Psarra, HR
- 12:00 – 12:10 **POWER FACTORS** | Eftichia Goula, Talent Acquisition Specialist
Giota Karagianni, Talent Acquisition Specialist

12:10 - 12:30 **Students Group Participants**

- 12:10 – 12:20 **CENTAURUS RACING TEAM** | John Athanasiadis, Head of High voltage Department & Konstantinos Bakiris, Member of High voltage Department
- 12:20 – 12:30 **HERMES Team** | Christos Belogiannis, Team Manager

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

