

Mediterranean Conference on Embedded Computing (MECO) International Conference on Cyber-Physical Systems and Internet-of-Things (CPS&IoT) Summer School on Cyber Physical Systems and Internet of Things (SSCPS&IoT) MECO'2025/CPSIoT'2025/SS-CPSiOT'2025

Budva, Montenegro, 10-14 June 2025, Hotel Budva, Montenegro

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PROGRAM

MECO&CPSiOT 2025

Legend:	IN-VENUE	ONLINE	FREE SLOTS	SOCIAL		Find ZOOM I	inks at the end o	of Programme		
				TUES: Ju	une 10 202	5				
	ROOM 1									
9:00	KEYNOTE 1 Chair: Lech Jozwiak	Prof. Dr. W	Prof. Dr. Wolfgang Ecker, How to Circumvent a RISCV Dead End, Infineon Technologies AG and Technical University of Munich, Germany							
10:00	OPENING			MECO Chairs	, MECO Fellows, I	MECO Guests, and ME	CO Friends			
10:30	SOCIAL				OPENII	NG BREAK				
11:00	SESSION 1 ORAL Chairs: Naim Dahnoun, Roberto Giorgi	Zhihua Jiang and Naim Dahnoun, Development of a Mechanical Chest Motion Simulator for Validating Non-Contact Vital Sign Monitoring, 24	Seyed Hani Hozhabr and Roberto Giorgi Real-time Object Detection on FPGA-based Heterogenous MPSoCs: A Preliminary Analysis of the Execution Bottlenecks, 46	Dongchen Li, Daniel Onwuchekwa and Roman Obermaisser, Event and Slack Time Prediction With Deep Learning for Proactive Runtime Scheduling in Time-Triggered Systems, 8	Natalie Simson, Paritosh Kumar Sinha and Wolfgang Ecker, Moving from RTL- to Handshake- based IP-Design: A RISC-V Case Study, 17	Dimitar Ninevski, Paul O'Leary, Anika Terbuch and Matthew Harker , Optimal Node Placement for Constrained Polynomial Interpolation, 14	Rashed AI Amin, Md Golam Rassel Lincoln and Roman Obermaisser, Towards LIM-Assisted HDL Generation and Verification, 38	Thomas Kammerhofer, Johannes Handler and Thomas Thurner , Industrial Tactile Sensor Solution with Embedded Processing, 87		
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15:00	SESSION 2 ONLINE Chairs: Marin Zhilevski, Omar Hekal	Ting, Sing-Yao Wu and Eli Bozorgzadeh , Exploiting and Extracting Workload Patterns for Efficient IoT Processing, 99	Aditi Ghosh, Maurizio Giacobbe, Muhammad Tahir Rafiq, Antonio Puliafito and Roberto Giorgi Enhancing Traffic Prediction with Spatio- Temporal Deep Learning: A GCN-LSTM Hybrid Model, 72	Omar Hekal, Daniel Onwuchekwa and Roman Obermaisser Incremental Multi- Schedule Graph for Memory Optimization in Adaptive Time- Triggered Systems, 15	Marin Zhilevski, Mikho Mikhov and Krasimir Kanev Research on Rotary Processing Modes in a Type of Computer Numerical Control Machine Tools, 31	Marin Zhilevski, Mikho Mikhov and Georgi Pashkulski Driving System Control of a Device for Passive Rehabilitation of Knee and Hip Joints, 49	Marten Struijk, Jeroen Pijpker and Fadi Mohsen Demonstrating Practical Attacks on Maritime Cyber- Physical Systems via Exposed NMEA Gateways, 83	Kai Lehniger and Peter Langendoerfer Investigating Compact Shadow Stacks for the Xtensa LX Architecture, 18		
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17:30	SESSION 3 ONLINE Chairs: Gehad Alkady, Asep Andi Suryandi	Alkady and Dina	Prathibha P G and Tamizharasan P S , A Survey of the State-of- the-Art Compilers and Benchmarks for Embedded Systems, 13	Asep Andi Suryandi , Paul Tuohy and Sinisa Durovic, End-Winding Leakage Flux Monitoring for Stator Fault Detection in Induction Machines using Fiber Bragg Grating (FBG)-Terfenol D Composite Sensors, 20	Omar Abdelaziz, Mahmoud Soliman, Mahmoud Alaa and Mohamed S. Shehata Learnable Laplacian Embedding Decomposition for One-Stream Visual Object Trackers, 33	Gaëtan Barret, Joel Penhoat, Roland Picard and Daniel Chillet Empirical Analysis and Estimation of the Energy Cost of Data Transfers in CPU Caches in Multi-Core Systems, 37	A.F. Elsousy, A. Osama, H.E. Omar, H.M. Hassan, G.I. Alkady, R.M. Daoud, H.H. Amer, C.R. Salama and D.G. Mahmoud Low Overhead FPGA-based RISC-V Resilient To Upsets In User Bits, 41	Ali Alturaifi , Gesture- Context Adaptive Kalman Filtering using ANN for Enhanced Motion Tracking with IMUs, 53		



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10:00	SESSION 7 POSTER Chairs: Radu Etz, Mounir Abdkrimi	Radu Etz, George Dan Mois, Teodora Sanislav and Silviu Folea , An Open Microcontroller Implementation of Control Pilot Communication, 1	Mounir Abdkrimi, Olivier Rossetto, Olivier Bourrion, Christophe Vescovi and Christophe Hoarau Optimized FPGA Implementation of the CORDIC Algorithm for a Frequency Multiplexed Readout, 27	Milos Milovanovic, Bojan Perovic and Jordan Radosavljevic Development of a LabVIEW-Based Experimental System for Measuring Electrical and Thermal Characteristics of ACSR Conductors, 69	Projects and companies exibition					
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THURS: June 12 2025

	ROOM 1										
9:00	KEYNOTE 3 Chair: Budimir Lutovac	Prof. dr Rajeev I	Prof. dr Rajeev Kanth, Savonia University of Applied Sciences, & University of Turku, Finland, Hebei University of Environmental Engineering, China Urban Traffic to Sensor's Data Visualization – Recent Research Results and Applications								
9:50	KEYNOTE 4 Chair: Djuradj Budimir	Prof. Dr	Prof. Dr Akbar Sheikh-Akbari, Leeds Beckett University, School of Built Environment, Engineering and Computing, United Kingdom Detecting Subcutaneous Veins Using Hyperspectral Imaging								
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11:00	<mark>SESSION 12</mark> Chairs: Jordan Kralev, Akbar Sheikh- Akbari	Radovan Stojanović, Javan Đurković, Mihailo Vukmirović, Blagoje Babić and Vesna Miranović Medical Data Over Sound - HealthTalk Concept, 111	Jovan Djurkovic, Prof. Radovan Stojanovic, Andrej Skraba, Mihailo Vukmirović, Blagoje Babić and Vesna Miranović Cardiac Rhythm Monitoring with ChatGPT Integration, 114	Sina Mahroughi, Hossein Mehrabinejad, Theocharis Ispoglou, John George and Akbar Sheikh-Akbari Innovative Technologies for Non- Intrusive Aflatoxin Detection in Pistachios, 77	Uncertain Model Identification in Type	Jordan Kralev, Asparuh Markovski, Tsonyo Slavov and Petia Georgieva Robust Strategies for Enhanced Glycemic Control in Type I Diabetes, 84	Ozgun Mert Dedeoglu and Deniz Akdur, Improving Quality in Embedded Software Development: The Impact of OSAL in Evolving Systems, 48	Asem Omari, Omaia Al- Omari and Said Badreddine, A machine learning approach to analyze the shift from in- person to virtual care for mental health services, 107			
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15:30	SESSION 14 Chair: Michael Korenfeld, Eva Cipi	Eljona Zanaj, Eva Cipi, Arlind Ago and Redi Capoj , Green IoT Applications in Agriculture, 108	Mojtaba Mahdavi , Efficient Implementation of 2D Interleavers in Embedded Systems Using In-Memory Computing, 47	Arbi Elezi, Dhurate Hyseni and Betim Cico Tuning DeepSeek- Coder-V2-Lite-Base for C# Code Smell Detection: Advancing Towards Task Versatility in Software Maintenance, 109	Michael Korenfeld, Adi Yehieli and Michael Winokur IoT Connected Al- Powered 3D Food Printing for Smart Food Production, 11		1		1		
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Milan Prokin and Dragana Prokin Capturing Air Pollution from Electric Vehicles, 95Milan Prokin and Dragana Prokin Inimizing Air Pollution from Electric Vehicles, 95Milan Prokin and Dragana Prokin Milanizing Air Pollution from Electric Vehicles, 95Milan Prokin and Dragani Prokin Lingi Transmitting from a Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Inhomogeneous Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting from a Milan Prokin and Gyroscope Diata Based on FPGA Systems Stabilization, 86Moses Kasule and Djuradi Budimir, DPD Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting for a Transmitting from a Medium, 78Moses Kasule and Djuradi Dragani PI Meterni, Vedrimir Rojavić and Moving Transmitting for a Transmitting for a Linger Stabilization, 86Mose Kasule and Djuradi Budimir, DPD Dragani PI Meterni, Vedrimir Rojavić, Stabilization, 8611:00SOCIALSOCIALVedrimir R		ROOM 2									
SESSION 16 Chairs: Igor Jovancevic WORKSHOPS, COMPANIES, PROJECTS, EXIBITION, ROUND TABLES (PELMOB, HEALTHTALK, ONEAI) 17:00 CLOSING 18:00 SOCIAL	11:00	<mark>Chairs:</mark> Milan Prokin, Luigi	Dragana Prokin Capturing Air Pollution	Dragana Prokin Minimizing Air Pollution from Electric Vehicles, 96	Yury Parshin , MIMO System for Data Transmitting from a Moving Transmitter in an Inhomogeneous	Turkmanović, Dragomir El Mezeni, Vladimir Rajović and Ilija Popadić Synchronization of Video and Gyroscope Data Based on FPGA for Electro-Optical Systems Stabilization,	Budimir , DPD Linearisation of Transmitters for 5G	Boris Antic Optimized Numerical Integration for Embedded	Concurrency Analysis in System-Level Behavioral Models,		
14:30 Chairs: Igor Jovancevic WORKSHOPS, COMPANIES, PROJECTS, EXIBITION, ROUND TABLES (PELMOB, HEALTHTALK, ONEAI) 17:00 CLOSING CLOSING CEREMONY OF THE CONFERENCE 18:00 SOCIAL CLOSING BREAK AND REFRESHMENT	13:00	SOCIAL				LL	JNCH				
18:00 SOCIAL CLOSING BREAK AND REFRESHMENT	14:30	Chairs: Igor		WORKSHOPS, COMPANIES, PROJECTS, EXIBITION, ROUND TABLES (PELMOB, HEALTHTALK, ONEAI)							
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20:00 SOCIAL SOCIAL LIFE	18:00	SOCIAL				CLOSING BREAK	AND REFRESHMENT				
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FRI: June 13 2025

TEAM WORK WORKSHOPS SUMMER SCHOLL LESSONS EXCURSION

ZOOM Links	
ROOM1	https://us06web.zoom.us/j/8702896180?pwd=UipKABg1dQ066cvbLXa1MpJanu9abl.1
ROOM2	https://us05web.zoom.us/j/7621096592?pwd=UOjxvfkkbxqA46Y65LKnScHcxoaZtg.1
ROOM3 - Summer School	https://us06web.zoom.us/j/8342653096?pwd=q2vx39MICtJivUfjYkWIDxZ3cPb4WI.1

PROJECTS:	WORKSHOPS:
PELMOB	ARCA
ARCA	
HEALTH TALK	
OneAl	





HELP NOTES:

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Conference taxi:	
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+382 67 019 702	
nfo@royaltaxi.me	
12.28311848652398, 18.838384938890286 (Venue coordinates)	

CPS&IoT'2025 Summer School on Cyber-Physical Systems and Internet-of-Things Budva, Montenegro, June 10-14, 2025

Schedule

Day 1, Tuesday 10June: 09:00:10:00 Wolfgang Ecker, Infineon and TU Munich, DE Keynote: How to Circumvent a RISCV Dead End 10:00-10:30 Event Chairs and Special Guests Title: Opening Ceremony of the CPS&IoT'2025 Summer School, and MECO'2025 and CPS&IoT'2025 Conferences 10.30-11.00 Break 11.00-13.00 Lech Jóźwiak, TU/e, NL Green CPS and IoT for Green World Title: 13.00-14.00 Lunch Break 14.00-15.30 Said Hamdioui, TU Delft, NL Title: The Future of Energy-Efficient Computing: Beyond CMOS and Von Neumann 15.30-17.00 Natalie Simson & Wolfgang Ecker, DE Title: RISCV vs. ARM 17.00-17.30 Break 17.30-19.00 Natalie Simson & Wolfgang Ecker, DE **RISCV vs. ARM** Title: Day 2, Wednesday 11 June: 09.30-10.30 Reiner John, AVL, AT Title: Keynote: Al+ — Self-Awareness as the Key to Resilience, Efficiency, and ROI 10.30-11.00 Break 11.00-12.30 Reiner John, AVL, AT Applications of Quantum Sensing and Al in Real-Time Edge Computing Systems (lecture/hands-on) Title: 12.30-14.00 Lunch Break 14.00-17.00 Nabil Abdennadher, Univ. of Applied Sciences, West. Switzerland, CH Towards a decentralized Federated Learning based edge-to-edge Continuum Computing Framework Title: 17.00-17.30 Break 17.30-19.00 Iryna DE ALBUQUERQUE SILVA, CEA, FR Aidge: Embedded AI Open Source Platform Title: 21.00 Gala Dinner Day 3, Thursday 12 June: 09.00-10.30 Samir OUCHANI, CESI, FR Designing Trustworthy Smart Systems: Bridging Artificial Intelligence and Formal Methods Title: 10.30-11.00 Break 11.00-12.30 Zakaria Chihani, CEA, FR Trustworthy AI: Methods & Tools Title: 12.30-13.30 Lech Jóźwiak, TU/e, NL Title: Quality-driven Design of Cyber-Physical Systems 13.30-14.30 Lunch Break 14.30-16.30 Hans Vangheluwe and Joachim Denil, University of Antwerp, BE General systems engineering concepts (for CPS) and General modelling and simulation concepts Title: 16.30-17.30 Joachim Denil, University of Antwerp, BE Title[.] Requirements Modelling for Testing and Run-time Monitoring 17.30-18.00 Break 18.00-19.00 Rakshit Mittal and Hans Vangheluwe, University of Antwerp, BE Modelling and simulation of physical systems using OpenModelica (lecture/hands-on) Title: Day 4, Friday 13 June: 09.00-10.00 Rakshit Mittal and Hans Vangheluwe, University of Antwerp, BE Calibration and control of physical systems using OpenModelica (lecture/hands-on) Title: 10.00-12.00 Joeri Exelmans and Hans Vangheluwe, University of Antwerp, BE Title: Modelling, simulation, and synthesis of discrete-event systems using Statecharts (lecture/hands-on) 12.00-13.00 Lunch Break 13.00-16.30 Anish Bhobe, Dominique Blouin, and Yara Hallak, Telecom Paris, FR Modelling, verification, and synthesis of embedded cyber-physical systems using AADL and RAMSES (lecture/hands-Title: on) 16.30-17.00 Break 17.00-18.30 Radovan Stojanovic, University of Montenegro and MECOnet, ME Title: Design of performance and energy efficient nodes for smart systems 18.30-19.00 Closing of the CPS&IoT'2025 Summer School

+ Free participation in sessions of the CPS&IoT'2025 Conference and MECO'2025 Conference Summer School participants are expected to come with their own laptops. Internet access will be guaranteed.

Day 5, Saturday 14 June: Excursion possible (excursion fee is not included in the summer school fee)