PERCONAI

Pervasive and Resource-constrained AI

5th IEEE International Workshop on PErvasive and Resource-CONstrained Artificial Intelligence co-located with International Conference on Pervasive Computing and Communications (PerCom 2026)

IEEE PerCom 2026
Pisa, Italy | March 16 - 20

Pisa, March 20th, 2026 | CNR Area

9.00 | INTRODUCTION

To follow | KEYNOTE SPEECH
Stefano Melacci (Università degli Studi di Siena)
Learning from World Wide Human-AI Social Interactions

9.50 | SESSION 1: NEUROMORPHIC & SPIKING INTELLIGENCE UNDER ENERGY CONSTRAINTS

ADMM-Based Training for Spiking Neural Networks
Giovanni Perin (University of Brescia, Italy & University of Padova, Italy), Cesare Bidini (University of Padova, Italy), Riccardo Mazzieri (University of Padova, Italy), Michele Rossi (University of Padova, Italy)

An Energy Efficient Convolutional SNN for EEG Analytics towards Wearable BCI Applications
Dighanchal Banerjee (Tata Consultancy Services, India), Sankhadip Bera (Tata Consultancy Services Research, India), Shreyasi Datta (TCS Research, India), Sounak Dey (TCS, India)

EARL: Energy-Aware Optimization of Liquid State Machines for Pervasive AI
Zain Iqbal (IIT-CNR, Italy), Lorenzo Valerio (IIT-CNR, Italy)

11.20 | SESSION 2: EFFICIENT SEGMENTATION & LIGHTWEIGHT ANOMALY DETECTION

QSSM-PatchCore: Quad-Directional State Space Propagation for Visual Anomaly Detection
Yuanhao Zhang (Beijing Jiaotong University, China), Liqiang Zhu (Beijing Jiaotong University, China), Zujun Yu (Beijing Jiaotong Universitiy, China)

Context-Aware Inference in Segmentation with Block-skipping Early Exit Networks
Lennart Bengtson (University of Hamburg, Germany), Paula Gómez Matos (University of Hamburg, Germany), Philipp Kisters (University of Hamburg, Germany), Janick Edinger (University of Hamburg, Germany)

Enhancing ECG Classification Robustness with Lightweight Unsupervised Anomaly Detection Filters
Mustafa Fuad Rifet Ibrahim (Hamburg University of Applied Sciences & Hamburg University of Technology & NXP Semiconductors, Germany), Maurice Meijer (NXP Semiconductors, The Netherlands), Alexander Schlaefer (Hamburg University of Technology, Germany), Peer Stelldinger (Hamburg University of Applied Sciences, Germany)

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14.30 | SESSION 3: COMPACT MODELS FOR HUMAN-CENTRIC & MULTIMODAL APPLICATIONS

Compression Techniques for Membership Functions to Fuzzy Sets Learned from Data
Amirreza Dashti Genave (Università degli Studi di Milano, Italy), Dario Malchiodi (University of Milan, Italy), Marco Frasca (Università degli Studi di Milano, Italy)

A Lightweight Vision-Language Model for Disaster Image Summarization
Hibiki Yoshizaki (Osaka University, Japan), Akira Uchiyama (The University of Osaka, Japan), Akihito Hiromori (Osaka University, Japan), Mineo Takai (University of California, Los Angeles & Osaka University, USA), Hirozumi Yamaguchi (The University of Osaka, Japan)

Towards an End-To-End System for Real-Time Gesture Recognition from Surface Vibrations
Florian Hettstedt (University of Duisburg-Essen, Germany), Cedric Giese (Intelligent Embedded Systems Laboratory, University of Duisburg-Essen, Germany), Tianheng Ling (University of Duisburg-Essen, Germany), Keiichi Yasumoto (Nara Institute of Science and Technology, Japan), Gregor Schiele (University of Duisburg-Essen, Germany), Andreas Erbsloeh (University of Duisburg-Essen, Germany)

16.00 | SESSION 4: RESOURCE-AWARE EDGE LEARNING FOR VISION AND AUTONOMY

Enabling Efficient Portrait Segmentation on Embedded Devices
Riccardo Benevelli (FBK, Italy), Alberto Ancilotto (FBK, Italy), Lorenzo Vaquero (FBK, Italy), Elisa Ricci (University of Trento, Italy), Elisabetta Farella (Fondazione Bruno Kessler, Italy)

Re-Forward: Memory-efficient Backpropagation for Reinforcement Learning at the Edge
Gaetano Pispisa (University of Messina, Italy), Fabrizio De Vita (University of Messina, Italy), Dario Bruneo (Universita di Messina, Italy), Davide Giacalone (STMicroelectronics, Italy), Giovanni Merlino (University of Messina & National Interuniversity Consortium for Informatics (CINI), Italy), Francesco Longo (University of Messina, Italy)

Towards Predictable Energy and Runtime Estimation for Vertically Scaled Edge AI Inference
Uwe Gropengießer (Technical University of Darmstadt), Thomas Reuter (Technical University of Darmstadt), Dominik Schön (Technical University of Darmstadt), Osama Abboud (Huawei), Xun Xiao (Huawei Technologies Duesseldorf GmbH), Max Mühlhäuser (Technical University Darmstadt)

Resource-Aware Federated Transfer Learning with Adaptive Model Scaling and Channel Attention
Sabyasachi Banik (University of Bern, Switzerland), Eric Samikwa (University of Bern, Switzerland), Torsten Ingo Braun (University of Bern, Switzerland)

ViT-Curated Transfer Learning for Resource-Constrained UAV Detection
Andrzej Daniel Dobrzycki (Universidad Politécnica de Madrid, Spain), Ana M. Bernardos (Universidad Politecnica de Madrid, Spain)