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AIDA4Edge

UK Research and Innovation

Newsletter of AIDA4Edge – Issue #4

Where Innovation Begins: Highlights from the 18th IEEESTEC Conference

On Thursday, November 27, 2025, the International Students Projects Conference – IEEESTEC celebrated its eighteenth anniversary. The halls and classrooms of the Faculty of Electronic Engineering were filled with curious and talented high school pupils and university students.

We had the opportunity to see many interesting and creative projects, to hear inspiring research papers, and to once again witness the knowledge, ideas, and dedicated work of these young people and their professors.

We commend the effort and commitment of the conference organizers, led by chairman Prof. Danijel Danković, to inspire young people to develop an interest in research and work in technical fields. We hope to meet the participants of this year's conference again soon — first as students of the Faculty of Electronic Engineering, and later as successful colleagues.

With the desire to contribute to this event and its mission, our coordinator, Prof. Milan Dinčić, on behalf of the AIDA4Edge project, had the honor of presenting an award to Mila Starović for her outstanding paper "Generating Harmony from Melody Using a Genetic Algorithm," created at the Petnica Science Center. Her work is a remarkable example of how the creativity, knowledge, and perseverance of young researchers can lead to solutions that inspire and promise a future full of innovation.

Capacity Building by IHP Partners on Agile Project Management Tools

On December 9, 2025, within the framework of the AIDA4Edge project, a team from the Faculty of Electronic Engineering visited the IHP – Leibniz Institute for Innovative Microelectronics, where we had the opportunity to attend a lecture delivered by Markus Ulbricht.

The lecture, entitled "IHP Tools and Applications to Support Agile Project Management and Continuous Workflows," was delivered to project team members and highlighted practical approaches to enabling agile and efficient research workflows. Particular emphasis was placed on the use of collaborative and automation platforms such as GitLab, Jenkins, Nextcloud, Overleaf, and ResearchGate, demonstrating how these tools support continuous integration, documentation, knowledge sharing, and effective project coordination.

The presentation was highly valuable for us, fostering constructive discussion and exchange of best practices directly aligned with the goals of the AIDA4Edge project.

We sincerely thank Markus Ulbricht and the IHP team for their insightful contribution and warm hospitality.

FEEUNI Visits IHP to Foster Joint Research within AIDA4Edge

From December 9 to 11, 2025, the research team from the Faculty of Electronic Engineering, University of Niš (FEEUNI), visited the IHP – Leibniz Institute for High Performance Microelectronics in Frankfurt (Oder), Germany, as part of the AIDA4Edge project.

We were warmly welcomed by Marko Anđelković on behalf of IHP. The visit began with an overview of the AIDA4Edge project, presented by project coordinator Prof. Milan Dinčić, followed by a series of technical presentations by IHP researchers on key topics in AI hardware acceleration and system design. Jianan Wen presented research on energy-efficient and reliable RRAM-based in-memory computing architectures for AI acceleration. Alessandro Veronesi discussed the design of deep learning systems using modern hardware description frameworks, while Rizwan Tariq Syed presented a reconfigurable system architecture aimed at flexible and efficient AI processing.

The visit also included a two-way exchange of knowledge. On the second day, members of the FEEUNI research team presented their recent research results and ongoing activities. Aleksandra Jovanović introduced a concept for real-to-integer data conversion using uniform quantization tailored to the statistical characteristics of data in neural network MAC computations. Sofija Perić presented results on the application of power-of-two quantizers and a 3-bit integer quantizer for weight quantization, evaluating their impact on accuracies of spiking and artificial neural networks. Jelena Nedeljković provided an overview of the current research status within the joint mentorship framework between FEEUNI and IHP, highlighting progress and future research directions.

The agenda also included dedicated meetings on joint research activities, ESR mentorship, and preparation of future project proposals. These discussions enabled alignment of ongoing efforts, identification of new collaboration opportunities, and definition of next steps within and beyond the AIDA4Edge project.

We extend our gratitude to Marko Anđelković and the IHP team for sharing their expertise and fostering a welcoming environment throughout the visit.

From Research Support to Commercialization: A Research Management Workshop at the UoM

Within the framework of the AIDA4Edge project, jointly funded by the European Union and UK Research and Innovation (UKRI) a Research Management and Administration Workshop was held at the University of Manchester (UOM) on January the 13th, focusing on strengthening institutional practices and capacities across the research lifecycle.

The program covered key aspects of modern research management through four thematic sessions>
Session I – Supporting Researchers across the Research Lifecycle
Research Support Services at the UoM – Sarah Chatwin, Research Support Manager
Introduction to Research Data Management – Clare Liggins, Open Research Librarian
Session II – Project Communication and Dissemination
Research Communications, Impact and the Role of AI – Chris Jordan, Communications and Impact Manager, Global Development Institute, UoM
Session III – Research Commercialization
From research to commercialization: the Manchester model – Invention Discovery Team, University of Manchester Innovation Factory
Session IV – Collaborative Research
An overview of European calls for collaborative research projects – Marko Anđelković, IHP Microelectronics

In addition, researchers involved in other international projects, our stakeholders, including TWIN-RELECTand TAICHIP, also participated in the sessions, further strengthening cross-project knowledge exchange and networking.

A Day of Deep-Tech Brainstorming for Future Joint Research between FEEUNI and UoM

The Faculty of Electronic Engineering, University of Niš (FEEUNI) team had the pleasure of visiting the University of Manchester (UOM) for a full day of focused research brainstorming and technical exchange. This visit was conducted within the framework of the AIDA4Edge project, jointly funded by the European Union and UK Research and Innovation (UKRI).

The visit was dedicated to in-depth discussions on several key topics in advanced neural computing, including:

- Quantization and Pruning in Spiking Neural Networks
- Experience sharing on event-based dataset collection
- Dynamic neural networks and adaptive architectures

The sessions were chaired by Oliver Rhodes and Davide Bertozzi and provided an excellent framework for open scientific discussion, idea generation, and alignment on future research directions in line with the objectives of the AIDA4Edge project.

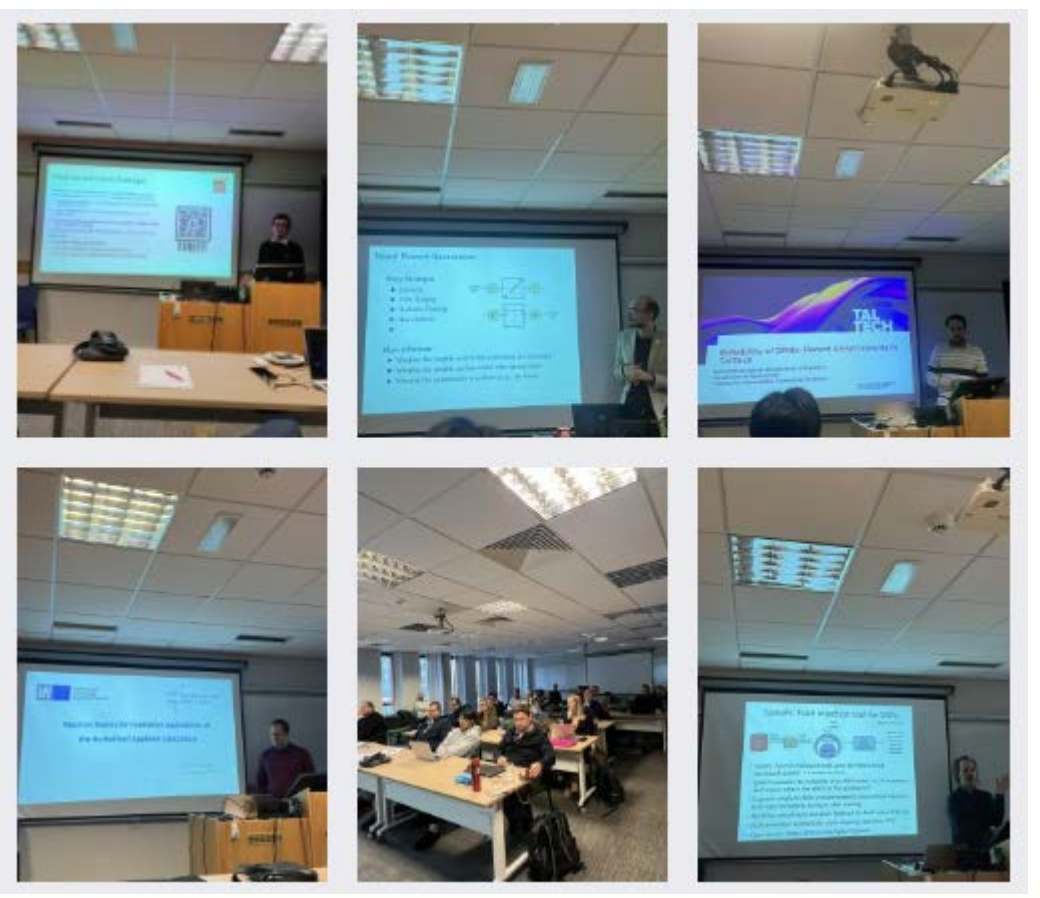
We would like to thank our hosts at the University of Manchester for the warm welcome and all participants for the highly productive research-oriented discussions. We look forward to strengthening our collaboration through upcoming joint research within the AIDA4Edge initiative.

A Day of Deep-Tech Brainstorming for Future Joint Research between FEEUNI and UoM

During our visit to the University of Manchester, we attended the Training in Reliable Electronic Design and Reliable Neuromorphic Computing, jointly delivered by the TWIN-RELECT and AIDA4Edge projects. The training was organized in close collaboration with our stakeholder, the TWIN-RELECT team, which is also one of the partners in the proposal submitted to the European Electronics Initiative (EEI) call, with FEEUNI participating as well.

The program featured a series of keynote and invited talks, including neutron beam irradiation for electronic testing by Carlo Cazzaniga (STFC Rutherford Appleton Laboratory), design and validation of chips for space applications by Miloš Krstić (IHP Microelectronics), and bit-precise neural network verification by Edoardo Manino (University of Manchester). Reliability of AI accelerators was addressed by experts from TalTech and IHP Microelectronics, while Alessandro Veronesi (IHP, in collaboration with UOM) presented cycle-accurate HW/SW co-design methodologies and led hands-on sessions on fault simulation using the EMBER framework.

In the area of neuromorphic computing, the training included tutorials on Spiking Neural Networks tools by Oliver Rhodes, neuromorphic hardware platforms by Davide Bertozzi (UOM), a visit to the SpiNNaker system hosted by Andrew Rowley, and a keynote on safe and reliable neuromorphic computing by Haralampos Stratigopoulos (Sorbonne Université, CNRS, LIP6).



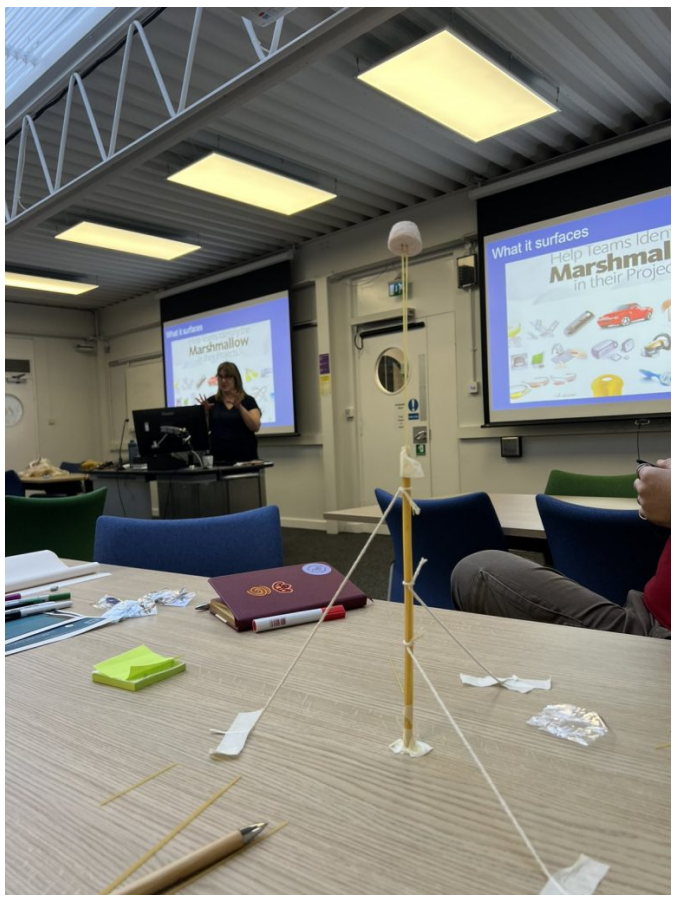
Additional sessions covered reliable AER routing, asynchronous NoCs, SNN training with snnTorch, and SNN–hardware fault co-simulation. Overall, the training provided an excellent balance of advanced technical content and practical hands-on experience, while fostering deeper connections with colleagues from the TWIN-RELECT project through a better understanding of our joint and complementary research interests.

Building Towers and Teams: Collaborative Skills and Project Leadership Training at the University of Manchester

During our stay at the University of Manchester, on January 16, we participated in the Training in Collaborative Skills and Project Leadership, organized within the TWIN-RELECT project and held at the Kilburn Building.

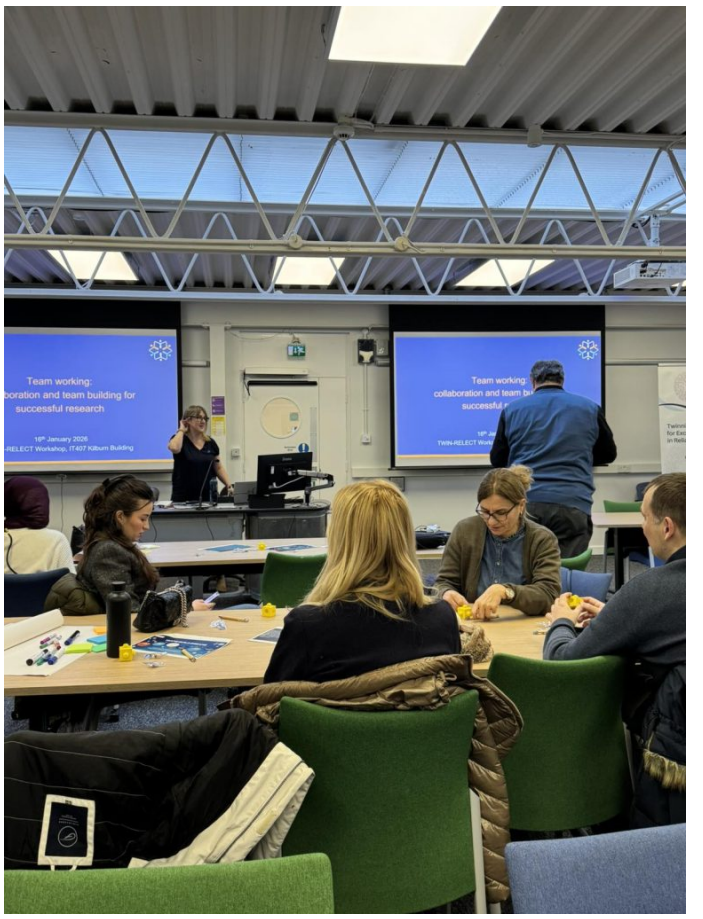
The training, focused on collaboration, teamwork, and project leadership, was led by Ruth Norris, programme co-lead of the Teams Build Dreams initiative, while the keynote on SpiNNaker technology and project leadership was delivered by Steve Furber from the University of Manchester.

Thanks to the openness, engagement, and collegial spirit of all participants, the atmosphere throughout the training was highly inspiring and energizing. Through interactive group work, we had the opportunity to further strengthen our connections and get to know our colleagues from the TWIN-RELECT project better.



A highlight of the session was the well-known Marshmallow Challenge, where participants were divided into teams and tasked with building the tallest possible structure using simple materials, with a marshmallow placed on top. We are happy to share that the winning team, composed of members from both the AIDA4Edge and TWIN-RELECT projects, successfully built the highest tower, demonstrating in practice the importance of teamwork, communication, and creative problem-solving.

We would like to sincerely thank Davide Bertozzi for inviting us to take part in this training. The session provided valuable insights into effective teamwork, collaboration, and leadership skills, which are essential for successful research projects.



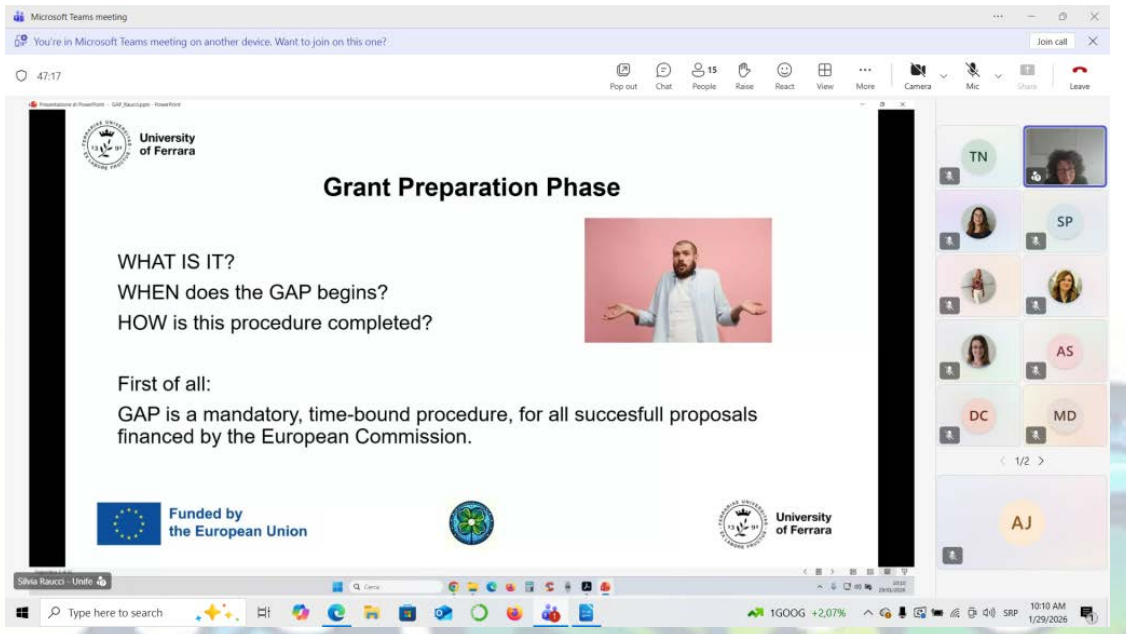
From Accepted Proposal to Grant Agreement: Understanding the Grant Preparation Phase

An online lecture on a mandatory and time-bound procedure for all successful proposals financed by the European Commission was held on January 29, titled “Grant Preparation Phase in EU-funded Projects” and delivered by Silvia Raucci from the International Research Office, University of Ferrara.

The lecture focused on the Grant Preparation Phase (GAP), which refers to the structured procedural period between the notification of a project’s successful evaluation (Evaluation Result / Invitation to Prepare the Grant Agreement) and the signing of the Grant Agreement. This phase represents a crucial step in transforming an approved proposal into a legally binding and operational project.

Participants were introduced to the position of the GAP within the European Commission’s Grant Management Lifecycle and to the main procedural steps, including the Declaration of Honour, Grant Agreement preparation, the signature process, and accession forms for project partners. The session also provided a clear overview of the roles and responsibilities of coordinators and partner institutions during this phase.

The lecture was addressed to researchers and administrative staff involved in the preparation and implementation of EU-funded projects, offering both conceptual clarity and practical insight into grant agreement preparation.



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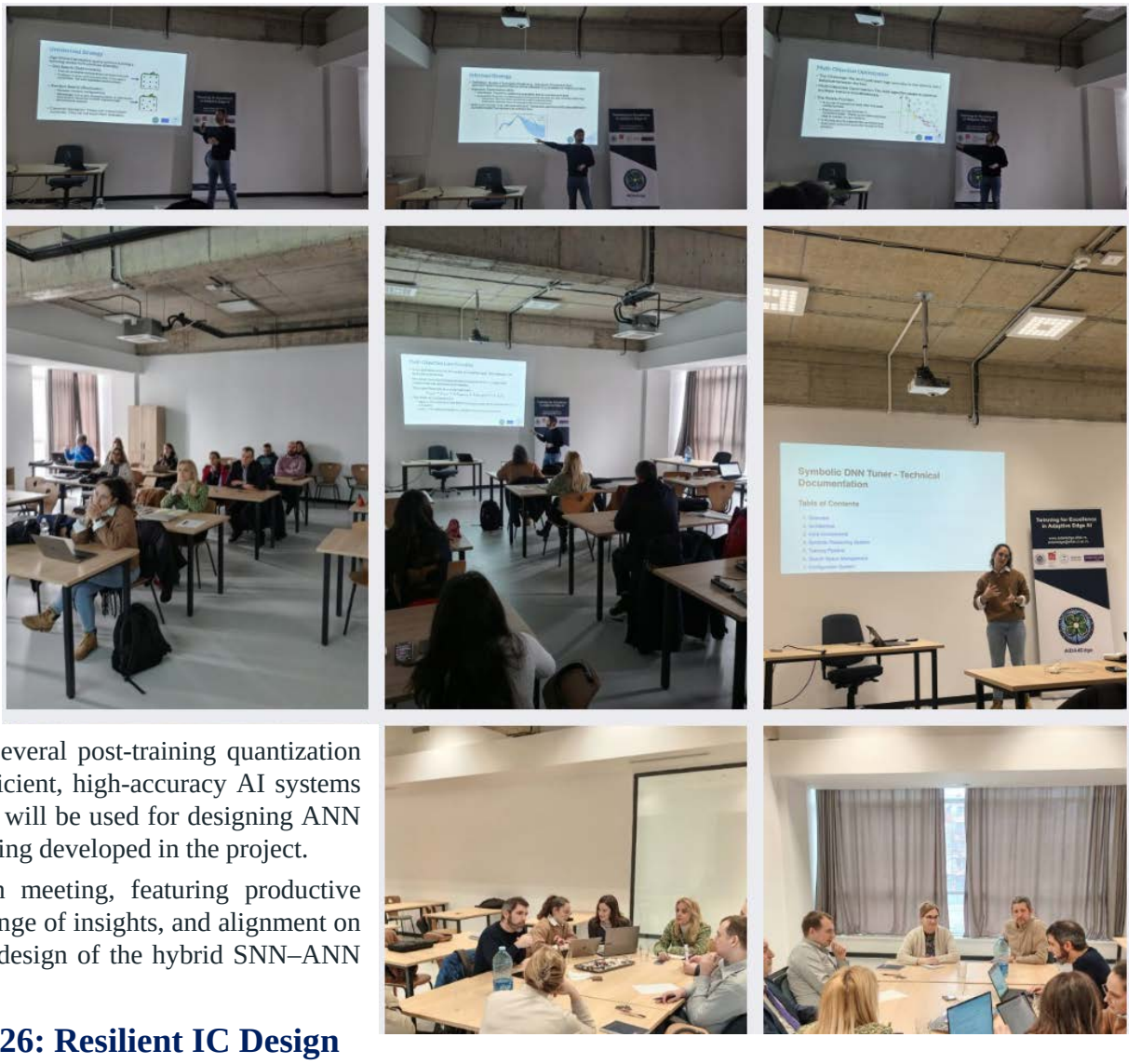
Knowledge Exchange during the University of Ferrara Research Visit to the Faculty of Electronic Engineering: NAS and the Symbolic DNN-Tuner

On January 30, at the Faculty of Electronic Engineering, within the AIDA4Edge project, we hosted a full-day program of lectures, hands-on training, and collaborative discussions.

The morning session began with a lecture on Neural Architecture Search (NAS) delivered by Riccardo Zese from the University of Ferrara, who introduced the main principles, methods, and research challenges of automated neural network design. Our project partner presented, in a very engaging way, the three key dimensions of NAS design that enable more efficient exploration of architectures and the identification of the right network shape that delivers superior DNN performance for multi-objective optimization problems.

As part of this lecture and during a subsequent hands-on tutorial, Riccardo Zese and Alice Bizzari presented Symbolic DNN-Tuner, a NAS and hyperparameter tuning framework developed by our partners at the University of Ferrara. Our team from the Faculty of Electronic Engineering contributed to the implementation of several post-training quantization methods, supporting the development of energy-efficient, high-accuracy AI systems suitable for deployment on edge devices. This tuner will be used for designing ANN models within the hybrid SNN–ANN architecture being developed in the project.



The afternoon session concluded with a research meeting, featuring productive discussions on ongoing research activities, the exchange of insights, and alignment on future project directions, particularly related to the design of the hybrid SNN–ANN pipeline.

AIDA4Edge Contributions at SSSS 2026: Resilient IC Design and Efficient GNN Quantization

We are pleased to share that the Small Systems Simulation Symposium (SSSS 2026) was successfully held from February 12–14, 2026, at the Faculty of Electronic Engineering, University of Niš.

Within the framework of the AIDA4Edge project, our research team contributed with two significant presentations addressing current challenges in quantization and resilient hardware systems.

Invited Keynote Presentation

Marko Andjelković, Rizwan Tariq Syed, Markus Ulbricht, Fabian Vargas, Zoran Perić, Milan Dincić, Jelena Nikolić, Aleksandra Jovanović, Dejan Cirić, Tatjana Nikolić, Goran Nikolić, Jelena Nedeljković, Sofija Perić, Nikola Vučić, Miloš Krstić, “An Overview of On-Chip Sensing and Analytics for Resilient Integrated Circuits”.

Paper Presentation

Zoran Perić, Nikola Simić, Milan Tančić, Sofija Perić, Oliver Rhodes, Ivan Popović,“Analysis of Classification Accuracy of FxP 8-bit and FP 8-bit Quantizers in GNNs”

The invited keynote was delivered by Marko Andjelković, providing a comprehensive overview of on-chip sensing methodologies and embedded analytics aimed at improving the resilience, reliability, and adaptability of modern integrated circuits.

The paper was presented by Sofija Perić, focusing on a comparative evaluation of fixed-point (FxP) and floating-point (FP) 8-bit quantization strategies in Graph Neural Networks (GNNs). The study provides insight into classification accuracy trade-offs and practical implications for efficient edge-AI deployment.

Deepening Collaboration with IHP: A Three-Day Expert Visit

From 18–20 February, we had the pleasure of hosting Dr. Marko Andjelković from IHP – Leibniz Institute for High Performance Microelectronics for a three-day visit within the framework of our project activities.

During his stay, Dr. Andjelković delivered a lecture entitled “An Overview of On-chip Sensing and Analytics for Resilient Integrated Circuits.” The lectureaddressed current scientific and research challenges and advancements in the field, providing valuable insights into emerging methodologies and future research directions.

The visit also included several research meetings characterized by constructive discussions, knowledge exchange, and alignment of ongoing and future collaborative activities. In addition, a dedicated mentoring session was held with the Early-Stage Researchers, during which further research steps and development plans were discussed.

We sincerely thank Dr. Andjelković for his visit, the high-quality lecture, and the productive discussions, which significantly contributed to the advancement of our project objectives and strengthened our collaboration.

Successfully Held AIDA4Edge Webinar on Project Proposal Preparation

On February 25, the AIDA4Edge Webinar on Project Proposal Preparation was successfully held, attracting over 40 participants and demonstrating a very high level of interest in European project funding schemes.

The webinar addressed two highly relevant topics within the Horizon Europe framework.

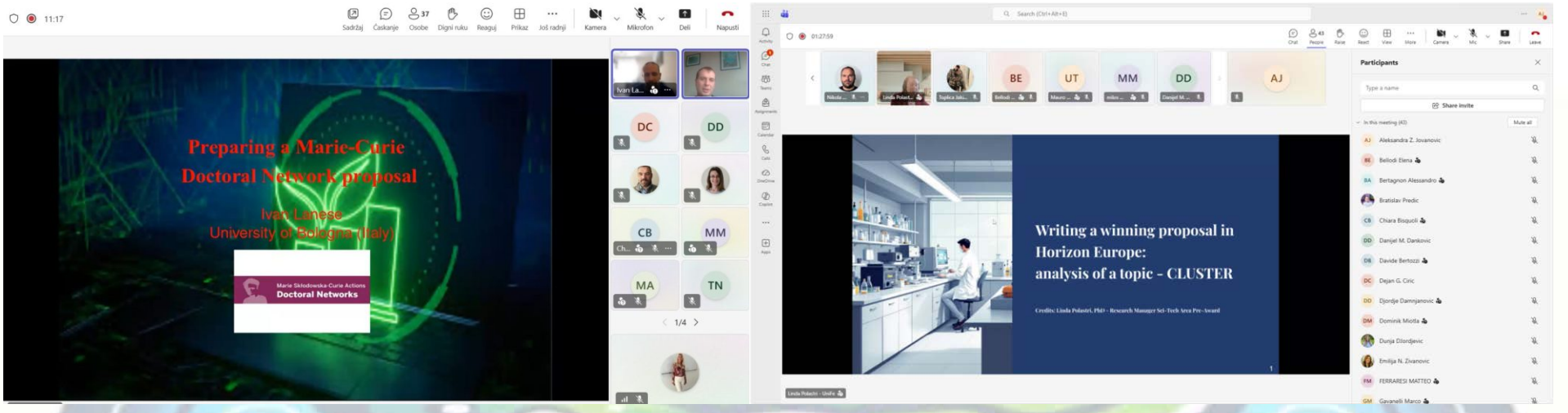
Prof. Ivan Lanese (University of Bologna) delivered a lecture entitled “Preparing a Marie-Curie Doctoral Network proposal”. Drawing on his extensive experience as coordinator of the MSCA Doctoral Network E-CoRe (Energy-efficient Computing via Reversibility), Prof. Lanese provided valuable insights into structuring a competitive Marie Skłodowska-Curie proposal, highlighting key evaluation aspects, common challenges, and strategic considerations when building strong international research consortia.

Prof. Lanese is Associate Professor at the University of Bologna, with a distinguished academic career in formal methods for distributed systems. He has coordinated and contributed to numerous national and European projects, including COST and Marie Curie actions, and has an extensive publication record in the field.

Dr. Linda Polastri (University of Ferrara) delivered a comprehensive session entitled “Writing a winning proposal in Horizon Europe: analysis of a topic”. Her lecture focused on practical strategies for interpreting call texts, understanding evaluation criteria, aligning project objectives with policy priorities, and structuring proposals to maximize impact and implementation credibility.

Dr. Polastri has extensive experience in scientific research in both academic and private-sector environments. She currently serves as Research Manager for several departments at the University of Ferrara, supporting researchers in identifying funding opportunities and preparing competitive project proposals.

The webinar provided participants with concrete guidance, practical examples, and first-hand experiences from successful European projects. The high attendance and active discussion that followed the presentations confirmed the strong interest of the research community in improving proposal-writing skills and increasing participation in competitive European funding programmes. The event was organized within the framework of the AIDA4Edge project, further contributing to strengthening research and innovation capacities through knowledge exchange and institutional development.



Boosting Collaboration with our New Stakeholder – Knauf Insulation

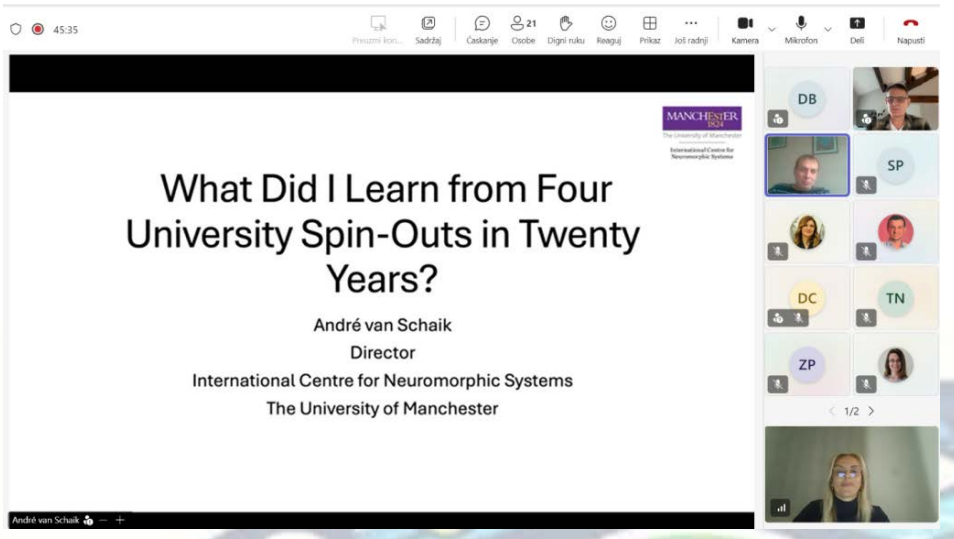
Innovation is truly a team effort, and the AIDA4Edge project continues to prove it by bridging the gap between academic research and industrial excellence. Today, on March 20, 2026, our team members, Prof. Dejan Ćirić and Prof. Jelena Nikolić, had the privilege of attending a specialized innovation workshop organized by our newest industrial stakeholder, Knauf Insulation.

Meeting our Stakeholders Aleksandar Pantić (Quality control chief, KI Surdulica, Serbia) and our Slovenian colleague Maro Puljizević (Core R&D Department, Project Manager – Acoustics, KI Bodovlje, Slovenia) in person was an exceptional event that provided a unique platform to discuss the goals of the AIDA4Edge project. It allowed us to align our current research with the most significant real-world industrial trends in the wider region.

The primary focus of our discussion was the critical transition from classical manufacturing to a data-driven, automated future, a transition that presents both unique challenges and immense opportunities for Edge AI. By presenting the AIDA4Edge project goals to our new stakeholders, we have opened the doors for the integration of innovative Edge AI solutions in real-time quality control systems, deployed directly within production lines. This shift is essential for embracing future trends in manufacturing, where zero-latency intelligent systems become the standard. Boosting this collaboration with Knauf Insulation is vital for the AIDA4Edge team. It strengthens the project's practical orientation and innovation potential, ensuring our joint efforts deliver scalable, high-impact solutions. We look forward to our continued progress and our shared journey toward complete industrial transformation!

AIDA4Edge Webinar on Knowledge Commercialization Successfully Held

On March 27, 2026, the AIDA4Edge project organized a webinar on commercialization of knowledge, bringing together experts from academia and innovation ecosystems to exchange experiences and best practices in transforming research results into real-world impact.

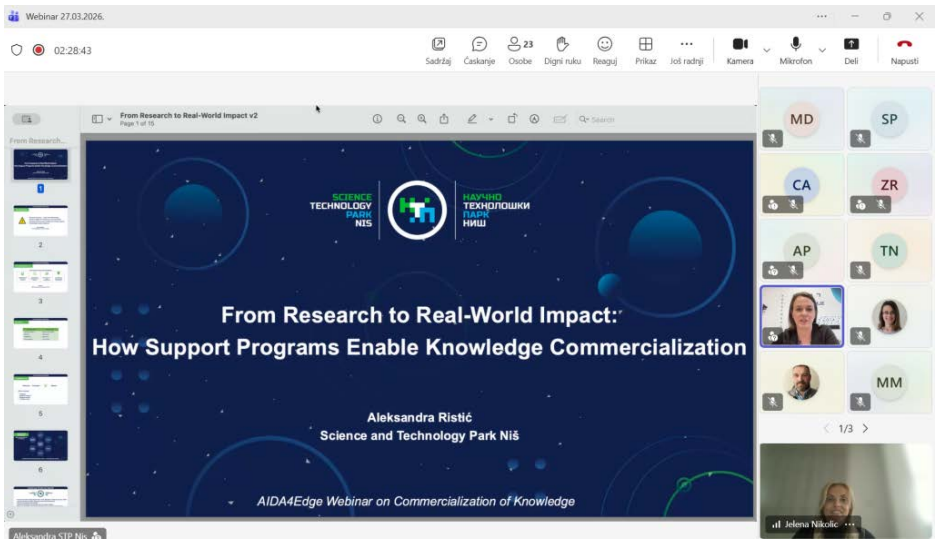


The webinar featured three insightful presentations addressing different dimensions of knowledge commercialization:

Andre van Schaik (University of Manchester) shared over two decades of experience in founding university spin-out companies, offering valuable insights into the challenges and lessons learned in translating research into innovative products and services .

Angela Princi and Arianna Casarini (University of Ferrara) presented the role of the Technopole and Technology Transfer Office in knowledge valorization, highlighting their contribution within the broader European framework of innovation and entrepreneurship .

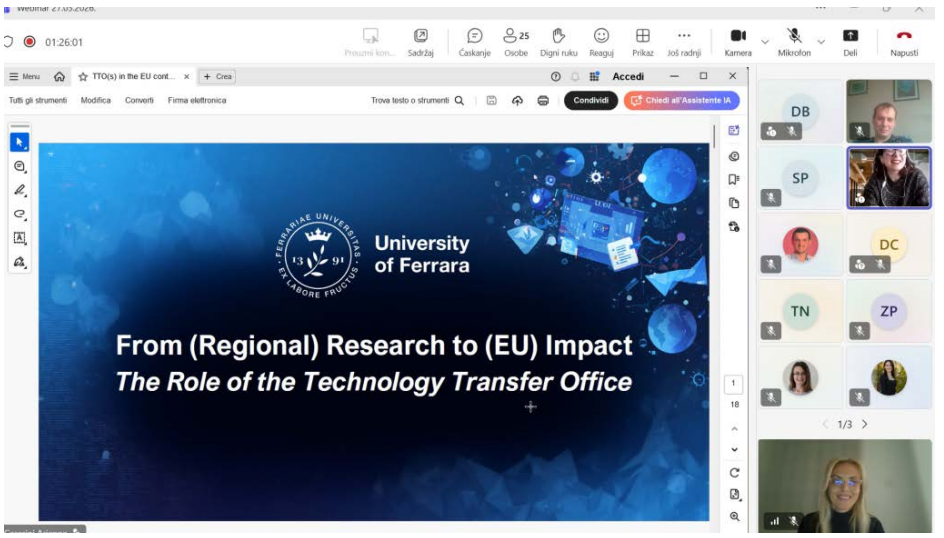
Aleksandra Ristić (Science and Technology Park Niš) discussed how structured support programs help bridge the gap between research and market adoption, emphasizing initiatives such as the S4AI hub and Launcher accelerator in fostering sustainable AI solutions .

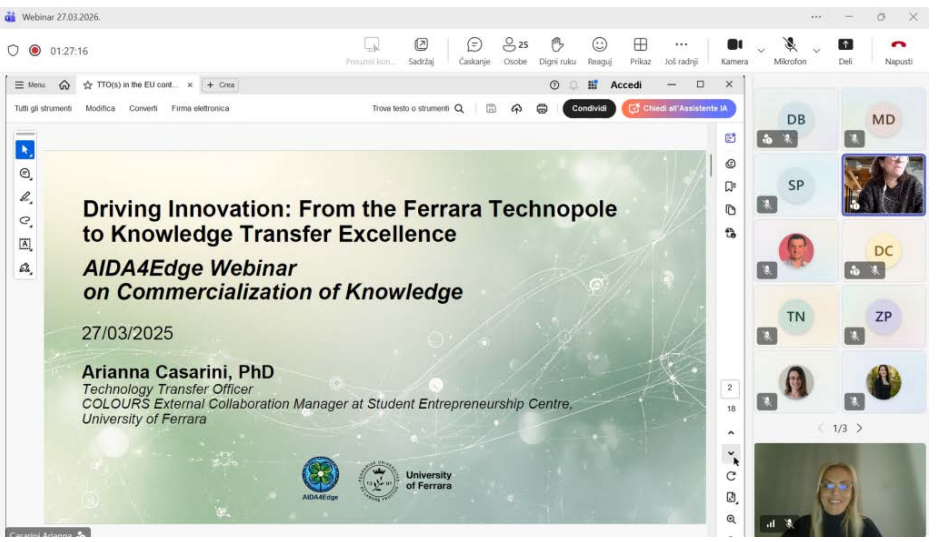


The webinar emphasized that successful knowledge commercialization requires a coordinated approach involving academia, industry, and support institutions, along with effective mechanisms for technology transfer, validation, and scaling of innovations.

The webinar also featured active contributions from both project partners and an AIDA4Edge stakeholder, the Science and Technology Park Niš, whose participation highlighted the active role of stakeholders in supporting the commercialization and real-world uptake of research results.

The webinar contributed to strengthening knowledge exchange and supporting the exploitation and commercialization of research results in line with Horizon Europe priorities.





New AIDA4Edge Promo Pack is Here!

We are pleased to unveil our brand-new AIDA4Edge promotional materials!

From eco-friendly notebooks and reusable bottles to travel accessories such as luggage tags and travel pillows, our new promo pack is designed to travel with us — from workshops and training schools to conferences across Europe. These items help us share the AIDA4Edge story, spark conversations, and connect with our growing community.

AIDA4Edge Team Member Featured in Il Resto del Carlino

We are very proud to have Alice Bizzarri as a member of the AIDA4Edge team!

Alice has been featured in Il Resto del Carlino, one of the leading regional newspapers in Italy, where her work at the University of Ferrara (UNIFE) is highlighted in an article on AI-driven solutions for energy efficiency. We are especially pleased to see her work at UNIFE gaining recognition beyond the academic community.

Congratulations to Alice on this well-deserved visibility!

AIDA4Edge Expert Visit by the University of Manchester

On April 14, 2026, the Faculty of Electronic Engineering, University of Niš hosted a expert visit by colleagues from the University of Manchester, organized within the AIDA4Edge project. As part of the project's knowledge transfer activities, the visit provided valuable lectures and enabled the exchange of expertise from advanced partners, contributing to strengthening research and management capacities in adaptive Edge AI at FEEUNI.

The program featured three lectures addressing key aspects of next-generation AI systems.

Prof. Davide Bertozzi delivered a lecture entitled "Beyond von Neumann: Circuit Design Styles and Platforms for Neuromorphic Computing", presenting alternative computing paradigms focused on energy-efficient, brain-inspired architectures.

Prof. John Goodacre followed with "Innovation Management in the Age of LLMs: Accelerating Complex System Design", discussing how large language models are reshaping engineering workflows and accelerating the development of complex systems.

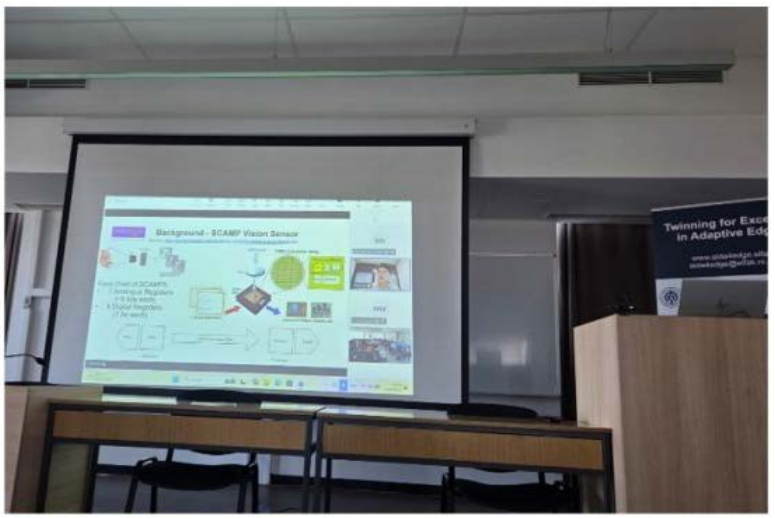
The visit concluded with a lecture by Dr. Edward Jones, "Beyond Backpropagation: Rules for Local On-Chip Learning", which introduced emerging learning approaches tailored to neuromorphic hardware and local, on-chip adaptation. This expert visit significantly contributed to the exchange of knowledge and best practices, while further strengthening collaboration between the University of Niš and the University of Manchester within the AIDA4Edge framework.

2nd AIDA4Edge Workshop on Advancing Edge AI through Quantization, Optimization, and Neuromorphic Computing Successfully Held

On April 15, 2026, the Faculty of Electronic Engineering, University of Niš hosted the 2nd AIDA4Edge Project Workshop entitled "Efficient and Reliable Edge AI: From Quantization and Optimization to Neuromorphic Computing." The workshop was held in a hybrid format, both in person and online, and gathered 32 participants (25 onsite and 7 online), including project partners, researchers, and a significant number of stakeholders. The event served as an important platform for the dissemination of project results and ongoing research activities within AIDA4Edge.

The workshop was opened by Prof. Milan Dinčić, AIDA4Edge project coordinator, who also delivered a presentation on fixed-point format optimization, addressing efficient numerical representations for neural networks. In continuation, Prof. Riccardo Zese presented approaches to optimizing neural networks for edge devices, focusing on balancing performance and resource constraints.

The program then moved towards emerging computing paradigms, where Dr. Edward Jones introduced recent advances in event-based sensing and spiking neural networks, highlighting low-latency and energy-efficient vision paradigms. Complementing this hardware-oriented perspective, Dr. Rizwan Tariq Syed presented FPGA-based workflows for DNN acceleration, demonstrating the path from high-level models to hardware implementation.



Further extending the discussion on efficiency, subsequent sessions addressed advanced topics such as dynamic quantization of binary neural networks for pixel processor arrays, presented by Yizhen Bi, and network efficiency through pruning, presented by Prof. Stefan Tomić together with Prof. Jelena Nikolić, emphasizing complementary strategies for reducing computational complexity while maintaining performance.

The participation of project stakeholders, including Dr. Miloš Marković (ProMetronics GmbH), Prof. Nikola Simić (Faculty of Technical Sciences, University of Novi Sad), Prof. Stefan Tomić (Abu Dhabi Polytechnic), Dr. Milan Grujev (ARTIFACT project), Prof. Marko Petković (Faculty of Science and Mathematics, University of Niš), Đorđe Antić (City of Niš), and Milena Pecarski (Mpeeria), further enriched the discussions and strengthened the connection between research and application.

The workshop concluded with a dedicated Early Stage Researchers (ESRs) session, featuring presentations by Sofija Perić, Jelena Nedeljković, Tamara Milovanović, and Nikola Vučić. During this session, ESRs presented their current results, challenges, and future research directions, and received valuable feedback and guidance from senior researchers within the project, which will significantly support their further work and development.

Overall, the workshop provided a valuable opportunity for the dissemination of results, exchange of ideas, and strengthening of collaboration among partners and stakeholders, contributing to the advancement of efficient, reliable, and hardware-aware Edge AI solutions.

AIDA4Edge Special Session on Efficient and Neuromorphic Edge AI at DDECS 2026

Excited to share highlights from the 29th IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems (DDECS 2026), held in Bratislava, Slovakia, April 27–29, 2026.

Within the conference, the AIDA4Edge project organized a special session, presenting a paper entitled “Optimizing Edge AI: Current Challenges and the Neuromorphic Outlook.”

This contribution represents a collaboration between the Faculty of Electronic Engineering, University of Niš (Serbia), University of Manchester (UK), University of Ferrara (Italy), and IHP – Leibniz Institute for Innovative Microelectronics (Germany).

The paper was presented by Sofija Perić, Davide Bertozzi, Alice Bizzarri, Rizwan Tariq Syed, and Edward Jones, showcasing some of the key results achieved so far within the AIDA4Edge project funded by the European Union’s Horizon Europe programme and supported by UK Research and Innovation (UKRI). The session sparked valuable discussions around current limitations in Edge AI systems, as well as the potential of neuromorphic approaches to address efficiency, scalability, and deployment challenges in resource-constrained environments.

DDECS continues to be an important forum for exchanging ideas and presenting advances in electronic circuits and systems design, test, and diagnostics.

Looking forward to further developments and collaborations in this rapidly evolving field.

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AIDA4Edge Event Highlights: AI Beyond the Cloud – Intelligence at the Edge of the Real World

As part of the Horizon Europe Twinning AIDA4Edge project, the online event “AI Beyond the Cloud – Intelligence at the Edge of the Real World” was successfully organized on Friday, May 8, by our colleagues from the University of Ferrara (UNIFE), one of the advanced partners of the project.

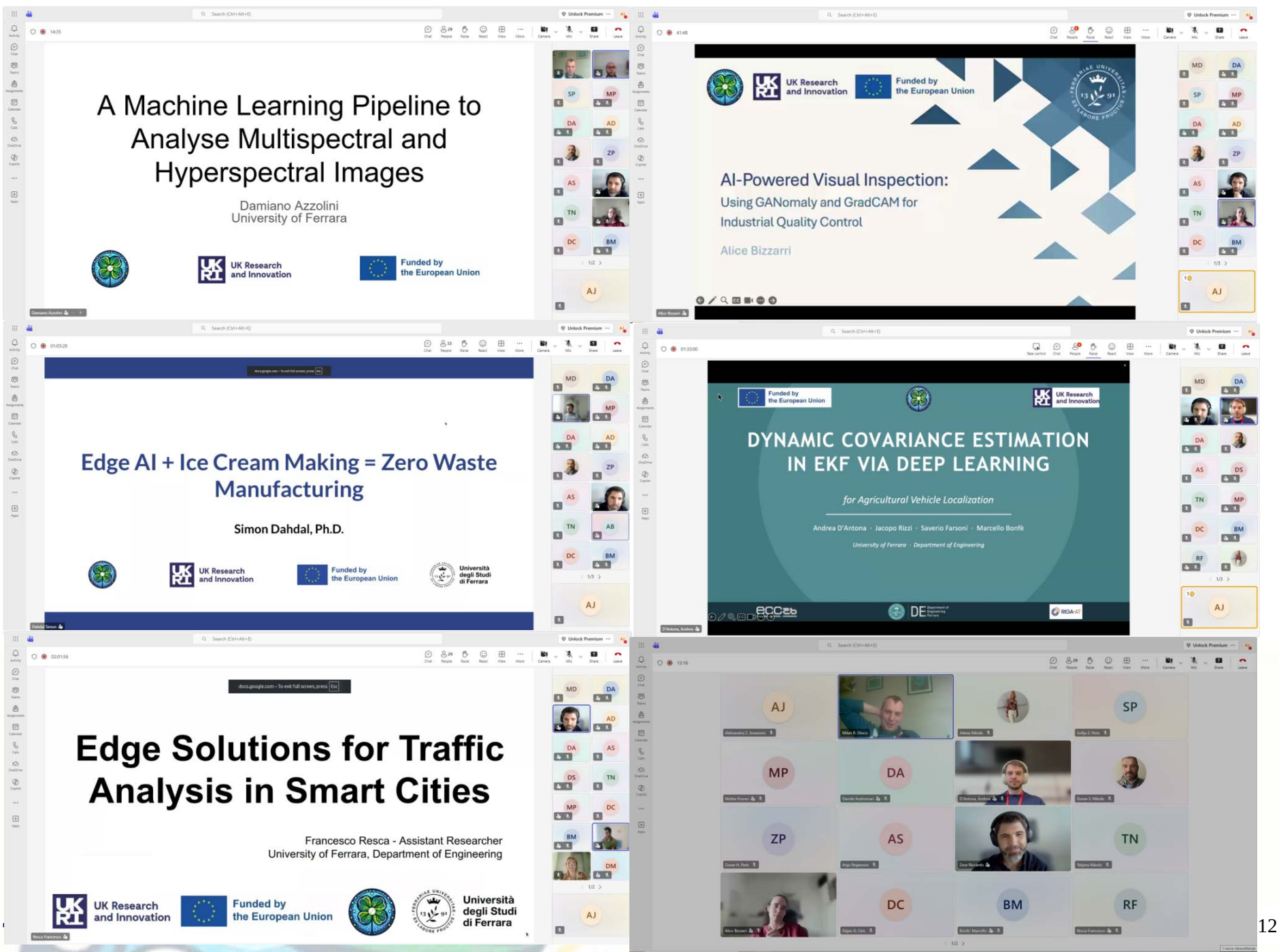
Special thanks go to Riccardo Zese for the excellent organization and coordination of this inspiring event.

The session gathered more than 30 participants and featured a broad spectrum of talks covering Edge AI, intelligent sensing, industrial quality control, traffic analysis, hyperspectral image processing, and sustainable manufacturing. The presentations clearly demonstrated the ongoing transition from centralized cloud infrastructures toward distributed, adaptive, and real-time edge intelligence. During the event, participants had the opportunity to hear several highly interesting presentations:

- A Machine Learning Pipeline to Analyse Multispectral and Hyperspectral Images – Damiano Azzolini presented advanced approaches for ROI segmentation and pixel clustering in spectral image analysis.
- AI-Powered Visual Inspection: Using GANomaly and GradCAM for Industrial Quality – Alice Bizzarri demonstrated the use of GANomaly and Grad-CAM methods to reduce false positives in industrial quality inspection systems.
- Edge AI + Ice Cream Making = Zero Waste Manufacturing – Simon Dahdal showcased an innovative multi-milestone inference strategy for zero-waste manufacturing (ZWM) and adaptive production optimization.
- Dynamic Covariance Estimation in EKF via Deep Learning for Agricultural Vehicle Localization – Andrea D’Antona presented a hybrid approach combining Extended Kalman Filters and neural networks for adaptive vehicle localization under vibrations, uneven terrain, and sensor disturbances.
- Edge Solutions for the Analysis of Traffic Phenomena in Metropolitan Areas – Francesco Resca presented distributed inference architectures aimed at reducing latency and improving scalability in traffic monitoring systems.

Our impression is that a wide range of highly interesting and diverse research activities is being carried out at UNIFE. Congratulations to all speakers and organizers for creating such an inspiring and multidisciplinary scientific event.

We sincerely thank our colleagues from UNIFE for fostering stimulating discussions on the future of adaptive, efficient, and sustainable Edge AI systems.



Second AIDA4Edge Training School Successfully Held at IHP, Germany

The second AIDA4Edge Training School, entitled “Reliable and Efficient AI Hardware Accelerators”, was successfully organized from May 11–13, 2026, at IHP – Leibniz Institute for High Performance Microelectronics, Frankfurt (Oder), Germany, within the Horizon Europe Twinning project AIDA4Edge.

The event opened with the Opening Session and IHP Welcome Address, delivered by Marko Andjelković and Fabian Vargas, followed by an introduction to the AIDA4Edge project presented by Milan Dinčić, AIDA4Edge project coordinator from the Faculty of Electronic Engineering, University of Niš.

The event gathered researchers, professors, PhD students, and industry experts working in the fields of Edge AI, hardware accelerators, neuromorphic computing, reliability-aware design, and open-source EDA methodologies. The training school provided participants with an opportunity to gain insights into the latest advances in reliable and energy-efficient AI hardware systems through keynote talks, technical lectures, and interactive discussions. The event featured a rich three-day program of keynote lectures, technical presentations, project meetings, and networking activities.

The training school featured keynote talks by distinguished international experts. Artur Jutman (Tallinn University of Technology, Estonia) opened the scientific program with a lecture on reusing Design-for-Test hardware for self-health awareness and fault recovery in multicore CPU subsystems, highlighting new approaches to runtime resilience in complex computing systems. Mahdi Taheri (BTU Cottbus–Senftenberg, Germany) presented runtime-adaptive cross-level optimization techniques for efficient and reliable Edge AI, emphasizing coordinated adaptivity across model, hardware, and arithmetic levels.

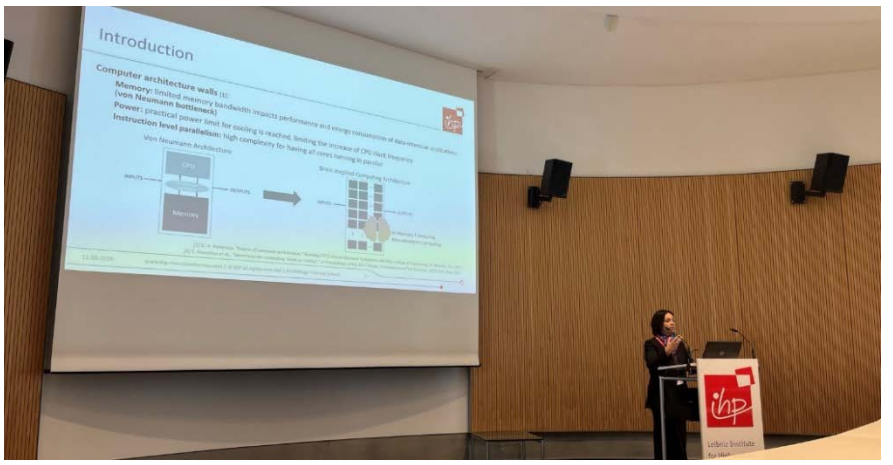
The program included several lectures delivered by researchers from IHP, covering advanced AI hardware technologies and reliability-aware design methodologies. Emilio Perez-Bosch Quesada, Jianan Wen, and Andre Lucas Chinazzo presented research on RRAM technologies, in-memory computing architectures, frequency-domain CNN accelerators, and fault propagation in computing-in-memory systems, highlighting challenges and opportunities in reliable AI acceleration.

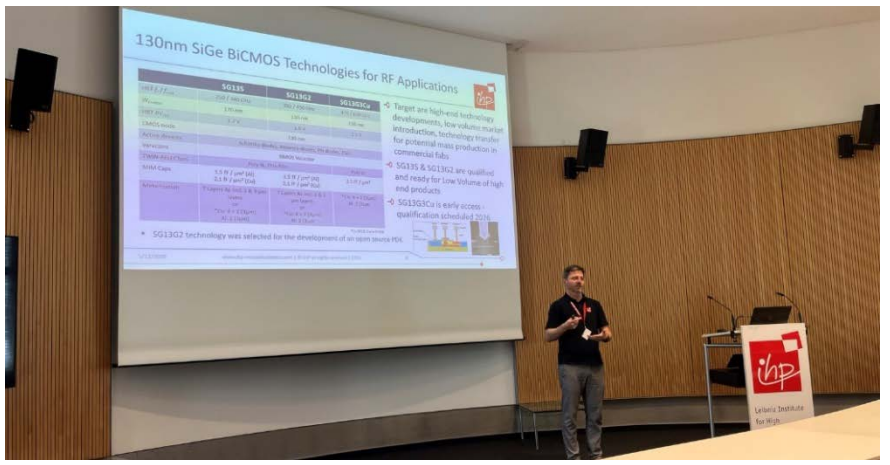
A strong emphasis was placed on brain-inspired and neuromorphic hardware systems. Leticia Bolzani Poehls (IHP) discussed hybrid brain-inspired architectures and technology heterogeneity for high-performance AI applications, while Davide Bertozzi (University of Manchester, UK) delivered a keynote lecture addressing the question “When Hardware Fails, Does Intelligence Survive?”, focusing on faults in neuromorphic communication hardware and cross-layer reliability analysis in neuromorphic systems.

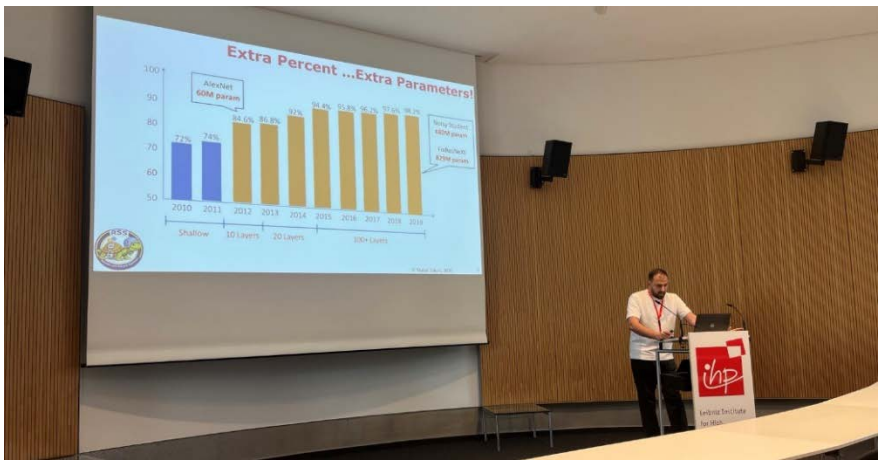
Additional highlights included the presentation by Christos Sotiriou, our stakeholder from the TWIN-RELECT project (University of Thessaly, Greece), who shared recent advances and future perspectives in EDA Agentic AI; Krzysztof Herman (IHP), discussing developments in open-source EDA and PDK ecosystems; and Rizwan Tariq Syed (IHP), reviewing fault injection methodologies for neural network accelerators.

Beyond technical advances, the school also addressed broader aspects of research and innovation. Fabian Vargas (IHP) presented approaches for mixed-criticality task execution in multicore real-time systems, while Anders Henriksson (IHP Solutions) and Milos Krstić (IHP) shared valuable insights on commercialization of academic research results and preparation of international project proposals.

The training school additionally served as an important platform for strengthening collaboration among AIDA4Edge partners: Faculty of Electronic Engineering, University of Niš, IHP – Leibniz Institute for High Performance Microelectronics, University of Manchester, and University of Ferrara. Project meetings held during the event further supported scientific exchange, knowledge transfer, and planning of future collaborative activities. The event was organized within the AIDA4Edge project, funded by the European Union's Horizon Europe research and innovation programme under Grant Agreement No. 101160293, with additional support from project partners and sponsors.







New AIDA4Edge Publications

1. Andrej Hvastja, Dejan Ćirić, Marko Milivojčević, Jurij Prezelja, "Assessing air and noise pollution through acoustic classification of vehicles fuel types using deep learning", *Heliyon*, vol. 11, no. 10, e43426, 2025. https://doi.org/10.1016/j.heliyon.2025.e43426

2. Ivan Jokić, Stevan Jokić, Vlado Delić, Zoran Perić, "Mel-frequency cepstral coefficients and spectrum based additional features in automatic speaker recognition", *Facta universitatis – series: Electronics and Energetics*, vol. 38, no. 4, pp. 663-680, 2025. https://doi.org/10.2298/FUEE2504663J

3. Danijel Danković, Emilija Živanović, Nevena Veselinović, Dunja Đorđević, Marija Petrović, Lana Tasić, Miloš Marjanović, Sandra Veljković, Nikola Mitrović, Vojkan Davidović, Goran Ristić, "Examination of Impact of NBTIs on Commercial Power P-Channel VDMOS Transistors in Practical Applications", *Micromachines*, vol. 17, no. 1: 52, 2026. https://doi.org/10.3390/mi17010052

4. Stevica Cvetković, Matija Špeletić, Jelena Nikolić, "Edge-Centric Augmented Reality Framework for Realtime Wristwatch Try-On", *International Journal of Interactive Multimedia and Artificial Intelligence* (*IJIMAI*), Vol. 9, No. 7, pp. 78-87, 2026. http://doi.org/10.9781/ijimai.2026.2227

5. Stefan Tomić, Dhabia Aldhuhoori, Turker Turker, Jelena Nikolić, Riccardo Zese, "Multi-stage fine-tuning of EfficientNetV2-S for material recognition on edge devices", *Journal of Electrical Engineering*, vol. 77, no. 2, pp. 123-129, 2026. https://doi.org/10.2478/jee-2026-0013

6. Zoran Perić, Nikola Simić, Milan Tančić, Sofija Perić, Edward Jones, I. Popović, "Application of 7-Bit Floating-Point Quantization for Efficient Multimodal Emotion Recognition", *Synergy of Technology, Education, Pedagogy and Science* (*STEPS*), Budva, Montenegro, September 27-30, 2025.

7. Marko Andjelković, Rizwan Tariq Syed, Markus Ulbricht, Fabian Vargas, Zoran Perić, Milan Dincić, Jelena Nikolić, Aleksandra Jovanović, Dejan Cirić, Tatjana Nikolić, Goran Nikolić, Jelena Nedeljković, Sofija Perić, Nikola Vucić, Milos Krstić (Invited Keynote), "An Overview of On-Chip Sensing and Analytics for Resilient Integrated Circuits", *Small Systems Simulation Symposium 2026* (*SSSS* 2026), Niš, Serbia, February 12-14, 2026. https://doi.org/10.46793/SSSS2026.064A

8. Zoran Perić, Nikola Simić, Milan Tančić, Sofija Perić, Oliver Rhodes, Ivan Popović, "Analysis of Classification Accuracy of FxP 8-bit and FP 8-bit Quantizers in GNNs", *Small Systems Simulation Symposium 2026* (*SSSS* 2026), Niš, Serbia, February 12-14, 2026. https://doi.org/10.46793/SSSS2026.046P

9. Milan Dinčić, Zoran Perić, Davide Bertozzi, Alice Bizzarri, Rizwan Tariq Syed, Edward Jones, Riccardo Zese, Marko Andjelković, Fabian Luis Vargas, Milos Krstić, Oliver Rhodes, Modhe Almelihi, Tamara Milovanović, Ivan Popović, Sofija Perić, "Special Session: Optimizing Edge AI - Current Challenges and the Neuromorphic Outlook", *29th IEEE International Symposium on Design and Diagnostics of Electronic Circuits and Systems* (*DDECS*), Bratislava, Slovakia, April 27-29, 2026, pp. 1-8. https://doi.org/10.1109/DDECS69233.2026.11521015

Thank you for your interest in the AIDA4Edge project.
We look forward to sharing more updates with you in the future.
www.aida4edge.elfak.rs

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