EDGE AI Newsletter

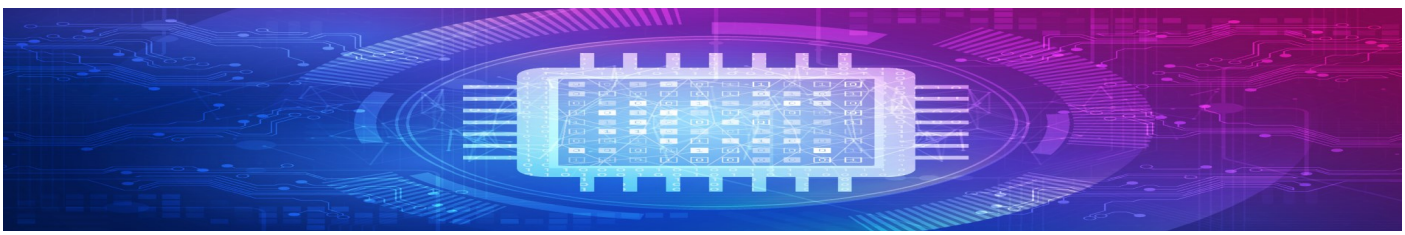
Volume 6, Issue 1
June 2024

European Nanoelectronics Applications, Design & Technology Conference (ADTC) and edaWorkshop24, 9-10 April 2024, Dresden, Germany

Heterogenous Edge AI Solutions Across Industrial Sectors

With the increasing demand for edge AI applications across industrial sectors with diverse requirements, specifications, and computational needs, there is an evident necessity for a revitalised computing architecture custom-designed for edge AI. This includes the integration of multiple heterogeneous mixes of processors as functional blocks like neural processing units (NPU), central processing units (CPU), and graphics processing units (GPU).

By using the appropriate processor for the different edge AI functions, heterogeneous computing maximises application performance, efficiency, and battery life to enable new and enhanced edge AI uses in industrial sectors like energy and agri-food.



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The EdgeAI project presented its latest findings on heterogeneous edge AI solutions at the European Nanoelectronics Applications, Design & Technology Conference (ADTC) and edaWorkshop24 held in Dresden, Germany (April 9-10, 2024). The session, titled "Heterogeneous Edge AI Solutions Across Industrial Sectors," was part of Conference Session 4: Edge AI.

Specifically, the EdgeAI session at ADTC 2024 featured presentations on various aspects of edge AI:

- **Siracusa: a 16nm Extended Reality PULP SoC with Heterogeneous At-MRAM Computing** - Francesco Conti (University of Bologna, IT)
- **Power-Aware Computing for the Internet of Things -** Pavel Smrz (COGNITECHNA, CZ)
- **Edge-AI-Driven Real-Time Clustering for Threat Detection in 6G Networks** - Abdelghani Bourenane (Scuola St.'Anna, IT)
- **Heterogenous Edge AI Solutions Across Industrial Sectors** - Ovidiu Vermesan (SINTEF, NO)
- **Lawfulness, Ethics and Regulations** - Lydia Belkadi (KUL, CiTiP, Belgium) in connection with the FR/NFR workshop.

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Edge AI Functional and Non-functional Requirements Workshop, 11 April 2024, Dresden, Germany

Co-organising a roundtable and workshop on edge AI functional and non-functional requirements involving representatives from **Horizon Europe dAIEDGE and EdgeAI, Clever, Rebeca Chips JU, and other European projects** to exchange ideas and concepts, discuss future trends, and create links among the ecosystem players.

Edge AI interfaces with many other scientific disciplines and addresses topics of common interest as a multidisciplinary domain. These include cognitive edge AI, neuromorphic edge AI, and swarm intelligence, and they require a focus on architectures, energy efficiency, contextual computing, computational collaboration, virtualisation, miniaturisation, and edge continuum processing towards federated, distributed, and parallel computing.

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Edge AI Functional and Non-functional Requirements Workshop, 11 April 2024, Dresden, Germany

Presentation: Edge AI Concepts and Challenge - Strategic Agenda and Road Mapping for Edge AI Research and Innovations

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4th IEEE Workshop on AI Hardware: Test, Reliability And Security (AI-TREATS), 27-28 May 2024, The Hague, Netherlands

Chips JU EdgeAI project co-organised the 4th IEEE Workshop on AI Hardware: Test, Reliability And Security - AI-TREATS, on 27-28 May 2024 in The Hague, Netherlands. The event, co-located with the 29th IEEE European Test Symposium, explored the recent advances in edge AI under the aspects of security, trust and testing. The workshop was a great success, gathering many researchers, with 15 papers and a keynote given by Prof. Yanjing Li (University of Chicago, USA). On the opening day, the Chips JU EdgeAI project coordinator Ovidiu Vermesan, participated in a panel discussion about Networks of Excellence on edge AI in Europe together with Alain Pagani (DFKI, dAIEDGE project) and Mateo Sonza Reorda (Politecnico di Torino Italy, FAIR project), and presented the project and the activities for clustering the edge AI activities among the Chips JU projects and the network of excellence initiatives in Europe. On the second day, Ihsen Alouani from CNRS and beneficiary of Chips JU EdgeAI project had an invited talk on "The Green Shield: Sustainable Hardware for Secure AI"

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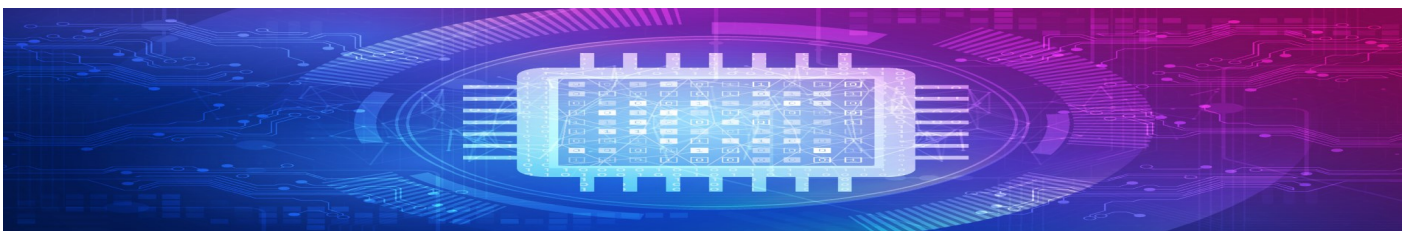
4th IEEE Workshop on AI Hardware: Test, Reliability And Security (AI-TREATS), 27-28 May 2024, The Hague, Netherlands

The workshop, chaired by Annachiara Ruospo(Politecnico di Torino, Italy) and Haralampos Stratigopoulos (Sorbonne Universtié, France).

Many thanks to all the participants!

Don't miss out on what's next!

Follow us on social media for updates on future events, and even more exciting news!



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https://edge-ai-tech.eu/

EdgeAI

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EdgeAI Key Facts

Start: 01 December 2022

Duration: 37 months

Budget: 35,43 M€

Coordinator: SINTEF AS

Consortium: 48 partners

Consortium

SINTEF, Infineon, ams OSRAM, SoftwareCUBE, TU Wien, imec, NXP, GNT, NEURO Controls, COGNITION FACTORY, IMST, Universität zu Lübeck, scm group, ST lite.augmented, VRANKEN POMMERY, TECHNEXT, cea, Grenoble INP UGA, Université de Reims Champagne-Ardenne, cnrs, Université Polytechnique Hauts-de-France, Χαροκοπειο Πανεπιστημιο Harokopio University, HTS High Technology Systems, Intelligent Machines IoT & Cyber Physical Systems DeepSensing S.R.L., Xtremion, Università degli Studi di Cagliari, Alma Mater Studiorum Università di Bologna, Università degli Studi di Milano, Elektronikas un datorzinātnu institūts Institute of Electronics and Computer Science, signify, Technolution, almende, TU/e, Fredrikstad energi, NxtEnergy, PROLUX, nxtech, itml innovation applied, Convergence, SynSense

Disclaimer

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