

AI AT THE EDGE

2021 – WHITE PAPER

In the white paper released today, experts from the smart systems integration community of EPoSS present their views on the state-of-the-art and future technology milestones in the Edge AI domain. They have put forward a range of policy recommendations aimed at accelerating the development and deployment of Edge AI solutions in the coming decade.

The paper is open to further feedback from the community until May 17. Please send your comments to: contact@smart-systems-integration.org

In the paper the experts from the Automotive, Energy, Industry, Health, Agriculture and Smart Cities domains provided use cases to illustrate the huge potential for edge AI applications and their future benefits for our society. Some areas, such as AI specific hardware/accelerators, distributed learning for edge methods and algorithms, platforms and frameworks for software and hardware co-development, have already reached a high maturity level for “real world” applications. However, there are still huge security, safety and trustworthiness challenges to be solved to enable the full potential of AI at the Edge. Future research and applications will be driven by achieving technology milestones such as: implementation on the smallest devices, high quality data, meta-learning, neuromorphic computing and other novel hardware-architectures.

Finally, the experts compiled a set of policy recommendations as a framework for R&D&I projects to address objectives such as sustainability, energy efficiency, safety and security. These should guide the future research and development efforts. Lower energy consumption of both hardware and software algorithms will underpin these ambitious goals.

Critical will be cross-domain and cross-technology working that will allow cooperation between various vendors combining the best hardware and software know-how and technologies.

Realization of the vision described in this paper requires a set of concrete actions and coordinated effort by companies, academia and public authorities. In the face of strong international competition in this developing field, a fast exploitation of the broad range of available state-of-the-art technologies is of highest importance for Europe. The leadership in cloud computing is lost for European players – but AI at the Edge is still an open opportunity and a must for European smart systems providers (especially sensor companies) to remain competitive and maintain their strong position in these markets.

For further details please see the document: www.smart-systems-integration.org/publication/eposs-ai-white-paper



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on Smart Systems Integration