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Andrea Pignata received his Master's degree in Computer Engineeringfrom Politecnico di Torino in 2022. His research focuses on the fields of Artificial Intelligence of Things (AIoT) and Neuromorphic Computing, with the goal of optimizing the execution of Artificial Intelligence algorithms on constrained hardware he engaged in close collaboration with the teams at SmartData, Politecnico di Torino and Telluride Neuromorphic Cognition Engineering.

Development Framework for the Engineering Process of edge-based AIoT sensor solutions

ABSTRACT

This research explores the development of an engineering framework for **edge-based Artificial Intelligence of Things (AIoT)** sensor solutions, addressing challenges in heterogeneous hardware and advanced paradigms like neuromorphic computing, while leveraging the benefits of edge-based solutions. Key contributions include the design of a **Heterogeneous Prototyping Platform (HPP)** that integrates software and hardware layers for the deployment of AI/ML applications.

Ongoing work includes deploying Spiking Neural Networks (SNNs) on edge devices and exploring native neuromorphic platforms such as SpiNNaker. These efforts aim to establish a **standardized engineering process** for integrating emerging AI solutions into practical IoT applications.

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