University of Messina, Italy
Department of Mathematical and Computer Sciences,
Physical Sciences and Earth Sciences

Subject: Internship Proposal

ID	PTI_EN_Bruneo Dario_09/03/2026 10.22.18
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Project Supervisor

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Project Co-Supervisor

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Project details

Title	Edge AI for Embedded Systems: Porting and Optimization of Machine Learning Algorithms on Microcontroller Platforms
Detailed description: This internship focuses on Edge AI, the deployment of machine learning models on resource-constrained embedded hardware. The intern will work on the full porting pipeline — from training ML models (e.g., for anomaly detection) in Python using TensorFlow or PyTorch, to deploying optimized versions on STM32 microcontrollers using STM32Cube.AI and Edge Impulse. Key activities include applying compression techniques such as quantization and pruning to meet the strict memory and power constraints of MCUs, profiling runtime performance, and validating inference directly on target hardware. The goal is to achieve real-time, energy-efficient on-device inference with no cloud dependency.	
Duration (month – max 12)	6
Duration (hours)	50
Open positions	2

Internship Skills

Technical requirements: Macchine learning basics, Python programming, C programming

Other skills	