



Davide Nadalini

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WORK EXPERIENCE

01/11/2024 – CURRENT Bologna, Italy
RESEARCH FELLOW ARCES - UNIVERSITÀ DI BOLOGNA

01/11/2021 – CURRENT Bologna, Italy
PHD STUDENT POLITECNICO DI TORINO, UNIVERSITÀ DI BOLOGNA

Development and optimization of methodologies and backend for On-Device Learning on multicore RISC-V Parallel Ultra-Low-Power (PULP) devices. Main developer and maintainer of the open-source project PULP-TrainLib (<https://github.com/pulp-platform/pulp-trainlib>).

Website <https://www.pulp-platform.org/>

01/03/2024 – 31/08/2024 Lugano, Switzerland
VISITING STUDENT USI-SUPSI IDSIA - ISTITUTO DALLE MOLLE DI STUDI SULL'INTELLIGENZA ARTIFICIALE

Research and development of a computer-vision-based On-Device Learning pipeline for adaptive autonomous navigation of nano-sized drones equipped with Ultra-Low-Power RISC-V multi-core microcontrollers.

Address Via la Santa 1, Lugano-Viganello, CH-6962, Lugano, Switzerland

01/04/2021 – 31/10/2021 Bologna, Italy
RESEARCH FELLOW ARCES - UNIVERSITÀ DI BOLOGNA

Mixed Precision training of Deep Neural Networks (DNN) models for mobile applications. Design and optimization of computational kernels and primitives for DNNs for Multicore Ultra-Low-Power (MCU-class) RISC-V and ARM-based devices.

EDUCATION AND TRAINING

09/2018 – 03/2021
MASTER'S DEGREE - ELECTRONICS ENGINEERING Alma Mater Studiorum - Università di Bologna

Final grade 110/110 | **Thesis** Mixed Precision Online Learning on a Parallel Ultra Low Power Platform

09/2012 – 07/2018
BACHELOR'S DEGREE - ELECTRONICS AND TELECOMMUNICATIONS ENGINEERING Alma Mater Studiorum - Università di Bologna

Final grade 97/110 | **Thesis** Modulatore Phase-Shifted per Z-Source Full-Bridge Inverters

PUBLICATIONS

[**Structured Sparse Back-propagation for Lightweight On-Device Continual Learning on Microcontroller Units**](#)

Write here the description...

Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition

2024
[**Compressed Latent Replays for Lightweight Continual Learning on Spiking Neural Networks**](#)

DOI: 10.48550/arXiv.2407.03111

2023

[Reduced Precision Floating-Point Optimization for Deep Neural Network On-Device Learning on MicroControllers](#)

DOI: 10.1016/j.future.2023.07.020

Future Generation Computer Systems

2022

[PULP-TrainLib: Enabling on-device training for RISC-V multi-core MCUs through performance-driven Autotuning](#)

2021

[A TinyML Platform for On-Device Continual Learning With Quantized Latent Replays](#)

DOI: 10.1109/JETCAS.2021.3121554

● **CONFERENCES AND SEMINARS**

25/03/2024 – 27/03/2024 Av. de les Corts Valencianes, 60, 46015 València, Spagna
Design, Automation and Test in Europe (DATE) Conference 2024

On-Device Continual Learning tutorial presenter at a sector-leader conference.

Link <https://date24.date-conference.com/embedded-tutorial/et02>

26/06/2023 – 28/06/2023 Marriott Hotel, Amsterdam, Netherlands

TinyML EMEA Innovation Forum

Link <https://www.tinyml.org/event/emea-2023/>

05/06/2023 – 06/06/2023 USI Lugano, West Campus, Lugano, Svizzera

10 Years of PULP

Link <https://pulp-platform.org/10years/>

10/07/2022 – 14/07/2022 Moscone Center West, San Francisco, California, USA

Design Automation Conference (DAC)

Link <https://www.dac.com/>

03/07/2022 – 07/07/2022 Doryssa Seaside Resort, Pythagorion, Samo, Grecia

SAMOS XXII Conference

Link <https://samos-conference.com/wp/>

● **LANGUAGE SKILLS**

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user