



Luigi Capogrosso

POSTDOCTORAL RESEARCHER AT THE INTERDISCIPLINARY TRANSFORMATION UNIVERSITY OF AUSTRIA (IT:U)

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Education

Postdoctoral Researcher

Linz, Austria

INTERDISCIPLINARY TRANSFORMATION UNIVERSITY OF AUSTRIA (IT:U)

Aug. 2025 - Present

- Within the IT:U Smart Space Sensing and Systems Lab (S³ Lab).

Ph.D. in Artificial Intelligence (*Cum Laude*)

Verona, Italy

POLYTECHNIC OF TURIN, IN COLLABORATION WITH THE UNIVERSITY OF VERONA

Nov. 2021 - Nov. 2024

- Thesis title: "Learning-Based Methods for Enabling On-Edge, Accurate, Sustainable, and Human-Centered Intelligent Manufacturing".

M.Sc. in Computer Engineering for Robotics and Smart Industry (*Cum Laude*)

Verona, Italy

UNIVERSITY OF VERONA

2019 - 2021

- Thesis title: "Embedded Deep Learning for Computer Vision: A Case Study on Object Tracking".

B.Sc. in Computer Science

Verona, Italy

UNIVERSITY OF VERONA

2016 - 2019

- Thesis title: "Linux Kernel: Organization, Structures and Process Management".

Research Experiences

Research Fellow

Verona, Italy

UNIVERSITY OF VERONA - DEPARTMENT OF ENGINEERING FOR INNOVATION MEDICINE

Dec. 2024 - Jul. 2025

- Grant title: "Sustainability: Tools and Models for Innovation Towards Carbon Neutrality". FSE Project Code: 1001-0001-231-2024 (DGR No. 231 of 13/03/2024). Research and development of innovative strategies for achieving carbon neutrality.

Research Assistant

Verona, Italy

HUMATICS | SYS-DAT GROUP

Jan. 2021 - Aug. 2021

- Deep learning models are often computationally expensive, hindering their use in resource-constrained edge systems. During this period, my work was focused on implementing pruning and quantization optimization techniques on company confidential deep learning models.

Research Fellow

San Giovanni Lupatoto, Italy

EDALAB S.R.L.

Oct. 2019 - Dec. 2021

- Communication protocols are the foundation of Internet of Things (IoT) applications. During this period, my work was focused on implementing the Modbus, OPC-UA, and MQTT protocols inside the company's BOX-IO embedded system.

Teaching Experiences

Teaching Assistant

Verona, Italy

UNIVERSITY OF VERONA

2020 - 2025

- Course "Topics on Computer Architecture and Operating Systems (2024/2025)" of the Bachelor's degree in Computer Science.
- Course "Hardware Components Design on FPGA (2023/2025)" of the Bachelor's degree in Computer Science.
- Course "Systems Design Laboratory (2023/2024)" of the Master's degree in Computer Engineering for Robotics and Smart Industry.
- Course "Machine Learning & Artificial Intelligence (2022/2023)" of the Master's degree in Computer Engineering for Robotics and Smart Industry.
- Course "Computer Vision & Deep Learning (2022/2023)" of the Master's degree in Artificial Intelligence.
- Course "Signal and Image Processing (2022/2023)" of the Bachelor's degree in Computer Science.
- Course "Topics of Operating Systems and Networks (2020/2021)" of the Bachelor's degree in Bioinformatics.
- Course "Network Programming and Security (2020/2021)" of the Bachelor's degree in Computer Science.
- Course "Programming I (2020/2021)" of the Bachelor's degree in Computer Science.

Reviewer Experiences

JOURNALS

- 2023 - Present **International Journal of Computer Vision**, Springer Netherlands.
 2023 - Present **IEEE Internet of Things Journal**, IEEE Inc.
 2023 - Present **Future Generation Computer Systems**, Elsevier B.V.
 2022 - Present **Pattern Recognition**, Elsevier Ltd.

CONFERENCES

- 2024 - Present **Computer Vision and Pattern Recognition Conference (CVPR)**, CVF/IEEE Inc.
 2023 - Present **International Conference on Learning Representations (ICLR)**, OpenReview.
 2024 **European Conference on Computer Vision (ECCV)**, Springer.
 2023 - Present **Design, Automation and Test in Europe Conference (DATE)**, IEEE Inc.

Committees

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| 2025 | Area Chair , 23rd International Conference on Image Analysis and Processing (ICIAP). | <i>Rome, Italy</i> |
| 2025 | Ph.D. Forum Chair , 3rd International Conference on Frontiers of Artificial Intelligence (FAIEMA). | <i>Stavanger, Norway</i> |
| 2025 | Program Committee , International Conference on Omni-Layer Intelligent Systems (COINS). | <i>Madison, U.S.A.</i> |
| 2024 | Program Committee , Unifying Representations in Neural Models Workshop (UniReps) at NeurIPS. | <i>Vancouver, Canada</i> |

Honors & Awards

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|-------------|---|-------------------------|
| 2025 | Outstanding Reviewer , IEEE/CVF Computer Vision and Pattern Recognition Conference (CVPR). | <i>Nashville, U.S.A</i> |
| 2022 | Honorable Mention , ACM/IEEE ICCAD TinyML Design Contest. | <i>San Diego, U.S.A</i> |
| 2016 - 2021 | Student Excellence Grant , University of Verona. | <i>Verona, Italy</i> |

Personal Qualities & Interests

- Scientific interests** Efficient Deep Learning, Representation Learning, Multi-Task Learning, Industry 4.0, IoT, Embedded Systems.
Personal traits Ambitious, hard-working, practical, eager to learn new skills, and highly focused on goals.
Programming Python, PyTorch, C, C++.
Languages Italian, English (Certified Level B2).

Selected Publications

KairosAD: A SAM-Based Model for Industrial Anomaly Detection on Embedded Devices

- U KHAN, F FUMMI, L CAPOGROSSO 2025
 • International Conference on Image Analysis and Processing (ICIAP).

LO-SC: Local-only Split Computing for Accurate Deep Learning on Edge Devices

- L CAPOGROSSO, E FRACCAROLI, M CRISTANI, F FUMMI, S CHAKRABORTY 2025
 • International Conference on VLSI Design (VLSID).

Disentangled Latent Spaces Facilitate Data-Driven Auxiliary Learning

- G SKENDERI, L CAPOGROSSO, A TOAIARI, M DENITTO, F FUMMI, S MELZI, M CRISTANI 2025
 • International Conference on Image Analysis and Processing (ICIAP).

MTL-Split: Multi-Task Learning for Edge Devices using Split Computing

- L CAPOGROSSO, E FRACCAROLI, S CHAKRABORTY, F FUMMI, M CRISTANI 2024
 • Design Automation Conference (DAC).

A Machine Learning-oriented Survey on Tiny Machine Learning

- L CAPOGROSSO, F CUNICO, DS CHENG, F FUMMI, M CRISTANI 2024
 • IEEE Access.

Split-Et-Impera: A Framework for the Design of Distributed Deep Learning Applications

- L CAPOGROSSO, F CUNICO, M LORA, M CRISTANI, F FUMMI, D QUAGLIA 2023
 • Design and Diagnostics of Electronic Circuits and Systems (DDECS).

I-SPLIT: Deep Network Interpretability for Split Computing

- F CUNICO, L CAPOGROSSO, F SETTI, D CARRA, F FUMMI, M CRISTANI 2022
 • International Conference on Pattern Recognition (ICPR).