Luigi **Capogrosso**

Postdoctoral Researcher at the Interdisciplinary Transformation University of Austria (IT:U)

Linz, 4040, Austria

(+39) 338 941 3284 | luigi.capogrosso@it-u.at | www.capogrosso.eu | Luigi Capogrosso

Education

Postdoctoral Researcher

Linz, Austria

Interdisciplinary Transformation University of Austria (IT:U) — *Aug. 2025 - Present*

- Research interests: Efficient Machine Learning, Learning-Enabled Cyber-Physical Systems, and Representation Learning.

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".

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.
2023 - Present **European Conference on Computer Vision (ECCV)**, Springer.
2023 - Present **Design, Automation and Test in Europe Conference (DATE)**, IEEE Inc.

Industry Experiences

Research Fellow

Verona, Italy

Confindustria Verona — *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.

Committees

2026	**Special Session Chair**, IEEE Sensor Applications Symposium (IEEE SAS).	*Vitória, Brazil*
2025	**Area Chair**, 23rd International Conference on Image Analysis and Processing (ICIAP).	*Rome, Italy*
2025	**Ph.D. Forum Chair**, 3rd International Conference on Frontiers of Artificial Intelligence (FAIEMA).	*Stavanger, Norway*
2025	**Program Committee**, International Conference on Omni-Layer Intelligent Systems (COINS).	*Madison, U.S.A.*
2024	**Program Committee**, Unifying Representations in Neural Models Workshop (UniReps) at NeurIPS.	*Vancouver, Canada*

Honors & Awards

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

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).