

Simone Alberto Peirone

ELLIS PHD STUDENT · ARTIFICIAL INTELLIGENCE

Politecnico di Torino, Turin, Italy

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Introduction

I am a last year PhD Student in Artificial Intelligence at Politecnico di Torino, under the supervision of **Prof. Giuseppe Averta**. I am mostly interested in building **egocentric video understanding** models that mimic the compositionality and hierarchy behind human reasoning skills. I am currently visiting EPFL, under the supervision of **Prof. Pascal Frossard**, exploring the intersection of video understanding and **concepts learning**.

Education

École polytechnique fédérale de Lausanne (EPFL)

Lausanne, Switzerland

VISITING PHD STUDENT

March 2025 - present

- **Supervisor:** Prof. Pascal Frossard

Politecnico di Torino

Turin, Italy

ELLIS PHD STUDENT

November 2022 - present

- Developed video understanding models that extract knowledge from various egocentric vision tasks in a reusable format, using Graph Neural Networks (GNNs). Studied different aspects of domain generalization in action recognition.
- **Programme:** National PhD Programme in Artificial Intelligence
- **Thesis title:** Egocentric Vision for Advanced Human-Robot Cooperation
- **Supervisors:** Prof. Giuseppe Averta, Prof. Barbara Caputo

Politecnico di Torino

Turin, Italy

M.SC. COMPUTER ENGINEERING

2020 - 2022

- **Thesis title:** EGO-T³: Test Time Training for Egocentric Videos
- **Supervisors:** Prof. Barbara Caputo, Doct. Mirco Planamente, Doct. Chiara Plizzari
- **Final mark:** 110/110 cum Laude

Politecnico di Torino

Turin, Italy

B.SC. COMPUTER ENGINEERING

2017 - 2020

- **Final mark:** 110/110 cum Laude

Publications

PUBLISHED

Peirone, S. A.^{*}, Goletto, G.^{*}, Planamente, M., Bottino, A., Caputo, B., & Averta, G. (2025). Egocentric zone-aware action recognition across environments. **Pattern Recognition Letters**, 188, 140-147. [Page] [Paper] [Code]

Peirone, S. A., Pistilli, F., Alliegro, A., & Averta, G. (2024). A backpack full of skills: Egocentric video understanding with diverse task perspectives. In Proceedings of the IEEE/CVF **Conference on Computer Vision and Pattern Recognition (CVPR)** (pp. 18275-18285). [Page] [Paper] [Code]

Planamente, M., Plizzari, C., **Peirone, S. A.**, Caputo, B., & Bottino, A. (2024). Relative norm alignment for tackling domain shift in deep multi-modal classification. **International Journal of Computer Vision**, 132(7), 2618-2638. [Paper]

PRE-PRINTS

Peirone, S. A., Pistilli, F., & Averta, G. (2025). HiERO: understanding the hierarchy of human behavior enhances reasoning on egocentric videos. [Paper] [Code]

Peirone, S. A., Pistilli, F., Alliegro, A., Tommasi, T., & Averta, G. (2025). Hier-EgoPack: Hierarchical Egocentric Video Understanding with Diverse Task Perspectives. [Paper] [Paper] [Code]

UNDER REVIEW

Nasirimajd, A., Plizzari, C., **Peirone, S. A.**, Ciccone, M., Averta, G. & Caputo, B. (2025). Domain Generalization using Action Sequences for Egocentric Action Recognition.

Professional Experience

- 2018-2020 **Full stack developer (part-time)**, Leonardo Web S.r.l, Manta (Italy)
2017 **Summer Internship**, KYOCERA Document Solutions España, Las Rozas De Madrid (Spain)

Awards, Fellowships, & Grants

- 2025 **IscrC “EgoProc” grant (56k compute hours)**, CINECA
2023 **EPIC-Kitchens UDA Challenge, CVPR 2023**, 2nd place
2017 **Talenti Neodiplomati**, Selection-based summer internship abroad
2016 **Gara Nazione di Informatica (GNI)**, 2nd Place

Teaching Experience

- Spring 2025 **Machine Learning and Deep Learning**, Teaching Assistant
Fall 2024 **Advanced Machine Learning**, Teaching Assistant
Fall 2024 **Data Analysis and Artificial Intelligence**, Teaching Assistant
Fall 2024 **Algoritmi e Strutture Dati**, Teaching Assistant
Spring 2024 **Machine Learning and Deep Learning**, Teaching Assistant
Fall 2023 **Algoritmi e Strutture Dati**, Teaching Assistant

Co-Supervised M.Sc. Students

- 2025 **Mattia Sabato**, Applications of Topological Deep Learning in Video Understanding
2025 **Federico Castriotta**, Learning the hierarchy of human activities in multi-view scenarios
2023-2024 **Domenico Mereu**, MARE-Graph: Multimodal Action Recognition in Egocentric video with Graph Neural Network
2024-2024 **Giuseppe Atanasio**, HIMU-MAE: Exploiting Head-mounted Inertial Measurement Unit with Masked Autoencoders for Egocentric Vision
2023-2024 **Amirshayan Nasirimajd**, Sequential Domain Generalisation for Egocentric Action Recognition

Outreach And Community Engagement

CONFERENCE ABSTRACTS / SHORT PAPERS

- June 2025 **Learning reusable concepts across different video understanding tasks**, Simone Alberto Peirone, Francesca Pistilli, Antonio Alliegro, Tatiana Tommasi and Giuseppe Averta *Nashville, USA*
Extended Abstract presented at the *EgoVis* and *Visual Concepts* workshops (CVPR 2025)
June 2025 **Reasoning on hierarchical representation of human behavior from Ego-videos**, Simone Alberto Peirone, Francesca Pistilli and Giuseppe Averta *Nashville, USA*
Extended Abstract presented at the *EgoVis Workshop* (CVPR 2025)
Sept. 2024 **Egocentric zone-aware action recognition across environments**, Simone Alberto Peirone, Gabriele Goletto, Mirco Planamente, Andrea Bottino, Barbara Caputo, Giuseppe Averta *Milan, Italy*
Extended Abstract at *FOCUS Workshop* (ECCV)
June 2024 **A Backpack Full of Skills: Egocentric Video Understanding with Diverse Task Perspectives**, Simone Alberto Peirone, Francesca Pistilli, Antonio Alliegro and Giuseppe Averta *Seattle, USA*
Invited CVPR Paper at *EgoVis Workshop* (CVPR 2024)
June 2024 **Test Time Adaptation for Egocentric Vision**, Simone Alberto Peirone, Mirco Planamente, Barbara Caputo and Giuseppe Averta *Seattle, USA*
Short paper at the *3rd National Conference on Artificial Intelligence (Ital-IA)*

SUMMER SCHOOLS

July 2025 **International Computer Vision Summer School**, Computer Vision for Spatial Intelligence *Scicli, Italy*
Sept. 2023 **ELLIS Summer School**, Large-Scale AI for Research and Industry *Modena, Italy*

PEER REVIEW

CVPR, ICCV, ECCV, NeurIPS, BMVC
IEEE International Conference on Robotics and Automation (ICRA)
IEEE Transactions on Emerging Topics in Computing (TETC)
IEEE Transactions on Multimedia (TMM)

ACADEMIC SERVICE

ELLIS (European Lab for Learning & Intelligent Systems) PhD Recruiting Committee, Evaluator (a.y. 2024-25)