Eros Fanì

📅 July 13, 1997   ✉ efani@bcamath.org   🌐 erosfani.github.io   in LinkedIn   ○ Github

Professional and teaching experience

Research Fellow Software Engineer
BASQUE CENTER FOR APPLIED MATHEMATICS (BCAM)

Bilbao, Spain
Nov 2024 – Present

- Lead developer, **Act.AI project** (PI: Prof. N. Quadrianto)

MSc thesis supervisor
POLYTECHNIC UNIVERSITY OF TURIN (POLITO)

Turin, Italy
Sep 2023 - Oct 2024

- Topic: Clustered Federated Learning
- Resulted in a publication at **ICML25**

Teaching Assistant
POLYTECHNIC UNIVERSITY OF TURIN (POLITO)

Turin, Italy
A.Y. 2022/23

- Graduate courses: Machine Learning and Deep Learning ○ Advanced Machine Learning ○ Data Analytics and Artificial Intelligence ○ Web Applications I
- Undergraduate course: Computer Science

MSc thesis supervisor
POLYTECHNIC UNIVERSITY OF TURIN (POLITO)

Turin, Italy
Sep 2022 - Jul 2023

- Topic: Federated Visual Geo-Localization
- Resulted in a publication at **FedVision @ CVPR 2024**

Teaching collaborator as an undergrad
POLYTECHNIC UNIVERSITY OF TURIN (POLITO)

Turin, Italy
A.Y. 2018/19

- Undergraduate courses: Algorithms and Programming ○ Mathematical Analysis I ○ Mathematical Analysis II

Education

Ph.D. candidate in Computer and Control Engineering
POLYTECHNIC UNIVERSITY OF TURIN (POLITO)

Turin, Italy
Nov 2021 - present

- Thesis title: "**Addressing Heterogeneity in Federated Learning for Real-world Vision Applications**"
- Advisor: Prof. B. Caputo · Polytechnic University of Turin (PoliTo)
- Defense expected: **summer 2025**

ELLIS Ph.D. program - Academic track
EUROPEAN LABORATORY FOR LEARNING AND INTELLIGENT SYSTEMS (ELLIS)

Turin, Italy
Nov 2021 - present

- Primary Host: Prof. B. Caputo · Polytechnic University of Turin (PoliTo)
- Exchange Host: Prof. N. Quadrianto · University of Sussex (UoS)

Visiting period at the University of Sussex for the ELLIS Exchange
UNIVERSITY OF SUSSEX (UOS), EUROPEAN LABORATORY FOR LEARNING AND INTELLIGENT SYSTEMS (ELLIS)

Brighton, United Kingdom
May 2024 - Oct 2024

- Research Advisor: Prof. N. Quadrianto · University of Sussex (UoS)

Visiting period at ELLIS Alicante
ELLIS ALICANTE, EUROPEAN LABORATORY FOR LEARNING AND INTELLIGENT SYSTEMS (ELLIS)

Alicante, Spain
Sep 2024

- Research Advisor: Prof. N. Oliver · ELLIS Alicante

MSc in Data Science and Engineering
Polytechnic University of Turin (PoliTo)
- Final grade: **110/110 cum laude**
- Thesis title: **On the Challenges of Class Imbalance in Federated Learning for Semantic Segmentation**

Turin, Italy
Oct 2019 - Oct 2021

BSc in Computer Engineering
Polytechnic University of Turin (PoliTo)
- Final grade: **108/110**

Turin, Italy
Oct 2016 - Jul 2019

Young Talent Project
Polytechnic University of Turin (PoliTo), CRT Foundation
- Study program of excellence open only to the 2% top-tier students admitted to the PoliTo for the A.Y. 2016/17

Turin, Italy
Oct 2016 - Jul 2019

High school diploma
Liceo Scientifico Statale M. Curie
- Final grade: **100/100 cum laude**

Giulianova, Italy
Sep 2011 - Jul 2016

Additional courses

Warm up your muscles: a ten-stage marathon to become the protagonist of your financial future ↗
Museo del Risparmio, Intesa San Paolo

Feb 2025 - Apr 2025

Fundamentals of Reinforcement Learning ↗
Coursera, University of Alberta

Feb 2022

Sample-based Learning Methods ↗
Coursera, University of Alberta

Jan 2022

Security Soft Start ↗
ONstairs Academy

Jun 2020

Attended schools and programs

Mediterranean Machine Learning (M2L) Summer School
AI Education Foundation

Thessaloniki, Greece
Aug 2023

ELLIS Doctoral Symposium 2021
University of Tübingen, Max-Planck Institute for Intelligent Systems

Tübingen, Germany
Oct 2021

Vodafone IoT Academy
Vodafone, Polytechnic University of Turin (PoliTo)

Turin, Italy
Jan 2020 - Jul 2020

Summer Orientation School Sant'Anna
Scuola Superiore Sant'Anna

Volterra, Italy
Jun 2015

Summer School for Experimental Sciences
Gran Sasso National Laboratories (LNGS) of the Italian National Institute for Nuclear Physics (INFN)

Assergi, Italy
Jun 2014

Publications

E. Fanì, et. al. "*Resource-Efficient Personalization in Federated Learning With Closed-Form Classifiers*". IEEE Access, 2025

IEEE Access

A. Licciardi, ..., **E. Fanì**, et. al. "*Interaction-Aware Gaussian Weighting for Clustered Federated Learning*". Forty-second International Conference on Machine Learning, 2025.

ICML25

E. Fanì, et. al."*Accelerating Heterogeneous Federated Learning with Closed-form Classifiers*". Forty-first International Conference on Machine Learning, 2024.

ICML24

M. Dutto, ..., **E. Fanì**, et. al. "*Collaborative Visual Place Recognition through Federated Learning*". FedVision Workshop in Conjunction with the IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2024.

FedVision CVPR24

E. Fanì, et. al. "*Fed3R: Recursive Ridge Regression for Federated Learning with strong pre-trained models*". International Workshop on Federated Learning in the Age of Foundation Models in Conjunction with NeurIPS, 2023. FL@FM NEURIPS23

E. Fanì, et. al. "*FedDrive v2: an Analysis of the Impact of Label Skewness in Federated Semantic Segmentation for Autonomous Driving*". 5th Italian Conference on Robotics and Intelligent Machines, 2023. I-RIM23

D. Shenaj*, **E. Fanì***, et. al. "*Learning Across Domains and Devices: Style-Driven Source-Free Domain Adaptation in Clustered Federated Learning*". IEEE/CVF winter conference on applications of computer vision, 2023. WACV23

L. Fantauzzo*, **E. Fanì***, et. al. "*FedDrive: Generalizing Federated Learning to Semantic Segmentation in Autonomous Driving*". IEEE/RSJ International Conference on Intelligent Robots and Systems, 2022. IROS22

*Equal contribution.

Pre-print

G. D. Németh, **E. Fanì**, et. al. "*Diversity-Driven Learning: Tackling Spurious Correlations and Data Heterogeneity in Federated Models*", 2025.

Peer-reviewing

Conference on Neural Information Processing Systems (**NeurIPS**)	2025, 2024
European Conference on Artificial Intelligence (**ECAI**) • Invited as Program Committee Member	2025
IEEE/CVF Computer Vision and Pattern Recognition Conference (**CVPR**)	2025
Transactions on Machine Learning Research (**TMLR**)	2024
European Conference on Computer Vision (**ECCV**) • Awarded as **Outstanding Reviewer**	2024
IEEE International Conference on Development and Learning (**ICDL**)	2023
European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD**)	2023
IEEE International Conference on Robotics and Automation (**ICRA**)	2023
Learning from Limited and Imperfect Data workshop of the European Conference on Computer Vision (**L2ID-ECCV**)	2022
IEEE Robotics and Automation Letters (**RA-L**)	2022

Honors, awards and achievements

Outstanding Reviewer award at ECCV24 Sep 2024
EUROPEAN CONFERENCE ON COMPUTER VISION 2024, EUROPEAN COMPUTER VISION ASSOCIATION (ECVA)

Scholarship award for the participation to the Mediterranean Machine Learning (M2L) Summer School Aug 2023
AI EDUCATION FOUNDATION

• Selected as one of the **top 10 students** among 805 applicants (top 1.25%) and 180 participants (top 5.55%)

Granted the WACV23 registration fee waiver Nov 2022
IEEE/CVF WINTER CONFERENCE ON APPLICATIONS OF COMPUTER VISION 2023

Two-times RoboMensa National Winner 2015 - 2016
MENSA ITALIA – THE HIGH I.Q. SOCIETY

• Logic Contest · **1st place** in both Individual and Teams categories

Two-times National Finalist at the Italian Mathematics Olympic Games in Teams 2015 - 2016
Italian Mathematical Union

Three podiums at the RomeCup Rescue Secondary National Finals 2014 - 2016
Digital World Foundation
- **1st** place (2016) – **2nd** place (2014, 2015)

National Finalist at the Italian Informatics Olympic Games 2015
Ministry of Instruction, University and Research (MIUR)

National Finalist at the Mathematical Games of the Mediterranean 2013
Italian Academy for the Promotion of Mathematics

Languages

Italian - native

English - full professional proficiency

Spanish - elementary proficiency

Coding skills

Python, C, PyTorch, Numpy, Scikit-Learn, WandB, Matplotlib, HTML, HTML5, HTML Bootstrap, CSS, Jax, FedJax, Haiku, Flax, Flower, Java, C++, Bash, Matlab, Javascript, ReactJS, Vite, PHP, R, Apache Spark, Apache Hadoop