Federico Gerardi

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Education

ETH Zurich, Project Mobility — Mar 2026 – June 2026
- **Thesis:** A Foundation Model for Shapegraphs Transitions for more accurate Expected Threats Analysis in Soccer

University of Oslo, Erasmus+ Exchange — Aug 2025 – Dec 2025
- **Coursework:** Advanced Deep Learning for Image Analysis, Fog and Cloud Computing, Models of Concurrency

Sapienza University of Rome, M.Sc. in Computer Science (in English) — Sept 2024 – Present
- Average: 29 / 30
- **Coursework:** Data Science, Artificial Intelligence, Computer Systems

Sapienza University of Rome, B.Sc. in Computer Engineering — Sept 2021 – Oct 2024
- **Thesis:** Custom Wireless Joystick Development with Arduino and Linux Integration

Experience

LeadTheFuture, Mentee — Remote, Italy
- Selected among top Italian STEM students (<20% acceptance) for mentorship by professionals from Silicon Valley and CERN. — Oct 2025 – Present

Microsoft & FabLab, Computer Vision Engineer (Project Internship) — Rome, Italy
- Implemented computer vision algorithms for **object detection and recognition** in robotic navigation — Mar 2025 – May 2025

DigiLab Sapienza, Research Assistant — Rome, Italy
- Conducted research in **AI, NLP, and Computer Vision** applied to Cultural Heritage — Dec 2024 – Present

Publications

Language Modeling for Epigraphs: a BERT model for EDR's Latin Epigraphs text completion — Sep 2025
Olmo Ceriotti, ***Federico Gerardi***, Saverio Giulio Malatesta, Silvia Orlandi
DOI: 10.1109/IEEE-CH65308.2025.11279443

Research Projects

Graph Attention Networks for Interpretable Expected Goals Analysis in Soccer — 2025
- Developed a Graph Attention Network with a novel attention mechanism to predict and interpret expected goals in soccer using PyTorch and StatsBomb data.

Shapegraphs Python Library for Tactical Role Inference in Soccer — 2025
- Implemented a Python library for creating and manipulating shape graphs to infer tactical roles in soccer, inspired by Brandes et al. (2025)

SOFA: Step-on-Foot Analyzer for Football Refereeing — Link 2025
- Built an automated system using YOLO and segmentation models to detect "step-on-foot" fouls in soccer, minimizing referee subjectivity. Supervised by Prof. Marco Raoul Marini.

Technical Skills

Programming Languages: Python, C++, C, Java, JavaScript/TypeScript
Machine Learning & Computer Vision: PyTorch, TensorFlow, scikit-learn, OpenCV
Data Management: SQL, Pandas,
Tools & Platforms: Docker, Git/GitHub, Linux, LaTeX, Jupyter, NumPy, Matplotlib

Languages

Italian: Native
English: Cambridge B2
French: A2
German: A1