

Luca Barsellotti

PHD STUDENT AT **AlmageLab** (UNIVERSITY OF MODENA AND REGGIO EMILIA)

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Education

Ph.D. in Information and Communication Technologies

Modena, Italy

AlmageLab - University of Modena and Reggio Emilia

November 2022-October 2025

- Research interests: Open-Vocabulary Semantic Segmentation and Embodied Navigation
- Supervised by Prof. Rita Cucchiara
- Funded by Leonardo

M.Sc. in Artificial Intelligence and Data Engineering

Pisa, Italy

University of Pisa

October 2019 - February 2022

- Thesis Title: "Design and implementation of a system for passive data acquisition and automatic classification of financial instruments based on Machine Learning algorithms" (in cooperation with ION Trading)
- Average Grade: 29.47/30. Final Mark: 110/110 cum laude

B.Sc. in Computer Science Engineering

Pisa, Italy

University of Pisa

September 2016 - October 2019

- Thesis Title: "Reconstruction of a spectrogram using Context-Encoder architectures based on Convolutional Neural Networks"
- Average Grade: 26.92/30. Final Mark: 110/110

Experience

Research Fellow

Pisa, Italy

CNIT and Scuola Superiore Sant'Anna

January 2022 - October 2022

- Investigating solutions for fast AI inference and offloading on resource-constrained SmartNICs.
- Development of AI-based services for networking infrastructures.

Machine Learning Intern

Pisa, Italy

ION Trading

September 2021 - December 2021

- Development of a system for automatic data retrieval from logs and storing in a document-based database.
- Implementation of a Machine Learning pipeline for the dynamic classification of financial instruments.

Publications

- [L. Barsellotti*](#), R. Amoroso*, M. Cornia, L. Baraldi, R. Cucchiara
Training-Free Open-Vocabulary Segmentation with Offline Diffusion-Augmented Prototype Generation
in *The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024
- D. Caffagni*, F. Cocchi, [L. Barsellotti*](#), N. Moratelli*, S. Sarto*, L. Baraldi*, L. Baraldi, M. Cornia, R. Cucchiara
The (R)Evolution of Multimodal Large Language Models: A Survey
in *arXiv*, 2024
- [L. Barsellotti*](#), R. Amoroso*, L. Baraldi, R. Cucchiara
FOSSIL: Free Open-Vocabulary Semantic Segmentation through Synthetic References Retrieval
in *The IEEE/CVF Winter Conference on Application of Computer Vision (WACV)*, 2024
- [L. Barsellotti](#), R. Amoroso, L. Baraldi, R. Cucchiara
Enhancing Open-Vocabulary Semantic Segmentation through Prototype Retrieval
in *International Conference on Image Analysis and Processing (ICIAP)*, 2023
- [L. Barsellotti](#), L. De Marinis, F. Cugini, F. Paolucci
FTG-Net: Hierarchical Flow-To-Traffic Graph Neural Network for DDoS Attack Detection
in *International Conference on High-Performance Switching and Routing (IEEE HPSR)*, 2023
- [L. Barsellotti](#), F. Alhamed, J. J. Vegas Olmos, F. Paolucci, P. Castoldi, F. Cugini
Introducing Data Processing Units (DPU) at the Edge
in *International Conference on Computer Communications and Networks (ICCCN)*, 2022

Activities

- Teacher of the lecture on "Image Segmentation" for the "Intensive Master AI and ML for Smart Factory" (Experis Academy)
- Reviewer for ECCV 2024 and ICIAP 2023
- Attended the ELLIS Summer School on Large-Scale AI on September 2023
- Attended the International Summer School on Machine Vision (VISMAL) on September 2023
- Participant in the NVIDIA DOCA Hackathon on March 2022

Skills

Programming

- Programming: Python (advanced knowledge), C, C++, Java (basic knowledge)
- Libraries and tools: PyTorch, NumPy, OpenCV, PyCharm, Visual Studio Code

Language & Writing

- English (Full professional proficiency)
- Italian (Native proficiency)
- German (Beginner)