

Luca Barsellotti

PHD STUDENT IN COMPUTER VISION AT AIMAGELAB

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I am a PhD Student at AlmageLab (University of Modena and Reggio Emilia) under the supervision of Prof. Rita Cucchiara. My main research area is Multimodal Learning in Computer Vision, with a focus on Open-Vocabulary Semantic Segmentation and Vision-Language Robot Navigation.

Education

PhD in Information and Communication Technologies

AIMAGELAB • UNIVERSITY OF MODENA AND REGGIO EMILIA

Modena, Italy

Oct. 2022 - Ongoing

- Research interests: Open-Vocabulary Semantic Segmentation, Vision-Language Robot Navigation
- Supervised by Prof. Rita Cucchiara

MSc in Artificial Intelligence and Data Engineering

UNIVERSITY OF PISA

Pisa, Italy

Oct. 2019 - Feb. 2022

- Avg. Grade: 29.47/30 • Final Mark: 110/110 cum laude • Equivalent GPA: 4.0/4.0
- Thesis Title: "Design and implementation of a system for passive data acquisition and automatic classification of financial instruments based on Machine Learning algorithms"

BSc in Computer Science Engineering

UNIVERSITY OF PISA

Pisa, Italy

Sep. 2016 - Oct. 2019

- Avg. Grade: 26.92/30 • Final Mark: 110/110 • Equivalent GPA: 3.5/4.0
- Thesis Title: "Reconstruction of a spectrogram using Context-Encoder architectures based on Convolutional Neural Networks"

Publications

- [L. Barsellotti](#), R. Bigazzi, M. Cornia, L. Baraldi, R. Cucchiara
Personalized Instance-based Navigation Toward User-Specific Objects in Realistic Environments
currently under review, 2024 2024
Under review
- D. Caffagni*, F. Cocchi*, [L. Barsellotti*](#), N. Moratelli*, S. Sarto*, L. Baraldi*, L. Baraldi, M. Cornia, R. Cucchiara
The Revolution of Multimodal Large Language Models: A Survey
in *Findings of the Association for Computational Linguistics (ACL Findings)*, 2024 ACL Findings 2024
Bangkok, Thailand
- [L. Barsellotti*](#), R. Amoroso*, M. Cornia, L. Baraldi, R. Cucchiara
Training-Free Open-Vocabulary Segmentation with Offline Diffusion-Augmented Prototype Generation
in *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024 CVPR 2024
Seattle, Washington
- [L. Barsellotti*](#), R. Amoroso*, L. Baraldi, R. Cucchiara
FOSSIL: Free Open-Vocabulary Semantic Segmentation through Synthetic References Retrieval
in *Winter Conference on Application of Computer Vision (WACV)*, 2024 WACV 2024
Waikoloa, Hawaii
- [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 ICIAP 2023
Udine, Italy
- [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 HPSR 2023
Albuquerque, NM
- [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 ICCCN 2023
Virtual

Experience

Research Fellow

CNIT PNTLAB • SCUOLA SUPERIORE SANT'ANNA

CNR Area, Pisa, Italy

Jan. 2022 - Oct. 2022

- Research interests: Deep Learning for resource-constrained SmartNICs, Network Traffic Analysis, Autonomous Driving Drones

Machine Learning Engineer Intern

ION TRADING

Pisa, Italy

Sep. 2021 - Dec. 2021

- Machine Learning and Data Engineering for the classification of financial instruments

Skills

Libraries	PyTorch, NumPy, OpenCV, Pandas
Tools	PyCharm, VSCode, Slurm, Git
Programming	Python (advanced), C++, Java (basic)
Languages	English (fluent), Italian (mother tongue), German, Spanish (basic)

Activities

TEACHING

Feb. 2024 **Lecturer**, *Deep Neural Network Architectures for Segmentation*, Intensive Master: AI and ML for Smart Factory [Remote](#)

CERTIFICATES

Jul. 2024	International Computer Vision Summer School (ICVSS) , presenting my CVPR 2024 paper <i>Training-Free Open-Vocabulary Segmentation with Offline Diffusion-Augmented Prototype Generation</i>	Scicli, Italy
Sep. 2023	ELLIS Summer School on Large-Scale AI , presenting the project <i>Per-Object Distance Estimation: A Quantitative Comparison</i>	Modena, Italy
Sep. 2023	International Summer School on Machine Vision (VISMACH) ,	Padova, Italy
Jul. 2022	Italian Qualification to Practice as Engineer , University of Pisa	Pisa, Italy
May 2022	First Principles of Computer Vision , Specialization Modules: <i>Camera and Imaging, Features and Boundaries, 3D Reconstruction, Visual Perception</i>	Coursera
Mar. 2022	NVIDIA DOCA Hackathon , Participant	Remote

REVIEWING

Conferences	BMVC (2024), ECCV (2024), IROS (2024), ICIAP (2023)
Journals	Pattern Recognition (2024), TOMM (2023), AI Communications (2023)