Elisabetta Fedele

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Education

Sep 2021 – present
Master in Computer Science, *ETH Zürich*
- Major in **Machine Intelligence** and Minor in **Theoretical Computer Science**.
- **Courses**: Algorithmic Game Theory, Algorithms Lab, Randomized Algorithms and Probabilistic Methods, Graph Theory, Computational Intelligence Lab, Generative Visual Models, Advanced Machine Learning, Machine Perception, Computer Graphics, Computer Vision, NLP.
- **Anticipated graduation date**: May 2024 (with the possibility to extend the student status until September 2025).

Sep. 2018 – Jun. 2021
Bachelor in Computer Systems Engineering, *Politecnico di Milano*
- Final grade: 110/110 *cum laude*.
- **Selected courses**: Probability and Statistics, Mathematical Analysis I and II, Linear Algebra, Algorithms and Principles of Theoretical Computer Science, Software Engineering.

Research Experience

Jul. 2023 – Sep. 2023
Research Intern, *EPFL*
- Advised by Prof. Alessandro Chiesa and part of Compsec Lab.
- I worked on the time-space tradeoff of the sumcheck protocol.
- We found a new family of algorithms that, by interpolating between the best time-efficient and the best space-efficient algorithms, greatly improves the practical performance of the protocol.

Mar. 2023 – Jun. 2023
Semester Project Student, *Google Zürich*
- Co-advised by Dr. Francis Engelmann, Dr. Federico Tombari, and Prof. Marc Pollefeys.
- We leveraged the capabilities of CLIP to expand the task of 3D instance segmentation to an Open-Vocabulary setting.
- Resulted in a publication at **NeurIPS 2023**.

Publications

Ayca Takmaz*, **Elisabetta Fedele***, Robert W. Sumner, Marc Pollefeys, Federico Tombari, Francis Engelmann. OpenMask3D: Open-Vocabulary 3D Instance Segmentation. *Advances in Neural Information Processing Systems (**NeurIPS**)*, 2023.

Dimitri Von Rütte*, **Elisabetta Fedele***, Jonathan Thomm*, Lukas Wolf*. FABRIC: Personalizing Diffusion Models with Iterative Feedback. *Under review*, 2023.

Teaching Experience

Feb. 2023 – Aug. 2023
Machine Perception, *ETH Zürich*
- Authored lecture notes for the course.

Sep. 2020 – Jan. 2021
Fundamentals of Computer Science, *Politecnico di Milano*
- Tutored an undergraduate class of 250 students during the coding laboratory.

Academic Projects

Sep. 2022 - Dec. 2022
Ray tracing renderer, *ETH Zürich*
- I implemented a ray tracing renderer in C++ for the course of *Computer Graphics*.

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* authors contributed equally

May 2022 - Jul. 2022	**Sentiment Analysis of Tweets**, *ETH Zürich*
	○ Group project for the course of *Computational Intelligence Lab*.
	○ We compared performance of BERTweet, LSTM on Word2Vec embeddings and FastText and we finetuned BERTweet to achieve an accuracy of 92.04%.
	○ Code available here.
Apr. 2022 - Jun. 2022	**3D Human Pose and Shape Estimation from RGB Images**, *ETH Zürich*
	○ Group project for the course of *Machine Perception*.
	○ We implemented a modified version of PARE in PyTorch, with a HR-NetV32 backbone, achieving an error of 57.5 PA-MPJPE.
	○ Report available here.

Honors & Awards

2023	**NeurIPS 2023 Scholar Award**, *NeurIPS*
2023	**Summer@EPFL Fellowship**, *EPFL*
2022-2023	**Scholarship for Sardinian students**, *Regione Sardegna*
2020-2021	**Merit-Based Scholarship**, *Politecnico di Milano*
2019	**Scholarship for Sports Merits**, *Politecnico di Milano*
2019	**Best Freshmen Prize**, *Politecnico di Milano*

Languages and Skills

Languages: Italian (native), English (fluent), French (basic), German (basic).

Computer Skills: Python, Java, C, C++, MATLAB, Git, LATEX, PyTorch, TensorFlow, Open3D.

Extracurricular activities

2022 - present	**Sailing Instructor Diploma - Level I**, *Italian Sailing Federation*
2006–2019	**Professional Optimist and 420 sailor**, Cagliari/Mandello del Lario
	○ Member of the **Italian Sailing Team** from 2012 to 2019.
	○ Competed in 6 **World Championships** and in 4 **European Championships**.
	○ Awarded **Best Italian Female Sailor** by *Tutto Vela* for the year 2014.