Lovro Rabuzin

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Born: 25.09.1999

EDUCATION

Jul 2024 Ongoing	***ETH Zürich, Institute of Machine Learning* - PhD Candidate in Computer Science** **Topic:** Novel algorithms on spatial omics for cancer biomarker discovery and hypothesis generation **PI:** *Valentina Boeva*
Sep 2021 May 2024	***ETH Zürich* - MSc in Computer Science** GPA: 5.66/6.0 **Major:** *Machine Intelligence* **Minor:** *Data Management* **Master thesis:** Graph Neural Network-Driven Analysis of Cellular Organization for Non-Small Cell Lung Cancer Precision Oncology
Jul 2018 Jul 2021	***FER, University of Zagreb, Croatia* - BSc in Computing** GPA: 4.88/5.0 **Bachelor thesis:** Semantic Segmentation of Neoplasms in Magnetic Resonance Images using Deep Convolutional Neural Networks

WORK EXPERIENCE

Sep 2022 Jan 2023	***Unit8 SA* - Data Engineer Intern** • Built a library for analysis of **Spark** plans on column level for tracking data lineage using **Python** • Maintained and upgraded a data ingestion, processing and analysis pipeline for measuring business key performance indicators using **Azure**, **Databricks** and **PowerBI**

TEACHING EXPERIENCE

Feb 2026 Aug 2026	***ETH Zürich* - Teaching Assistant - Big Data for Engineers** • Held tutorials and exercise sessions for students taking the course • Wrote and graded parts of the exam
Sep 2024 Feb 2026	***ETH Zürich* - Head Teaching Assistant - Machine Learning for Genomics** • Taught a lecture on methods for analysis of spatial omics data • Held tutorials and exercise sessions for students taking the course • Administrated and graded student paper presentations • Wrote and graded parts of the exam
Feb 2025 Aug 2025	***ETH Zürich* - Teaching Assistant - Computational Intelligence Lab** • Held tutorials and exercise sessions for students taking the course • Graded student research papers • Wrote and graded parts of the exam

CONFERENCE PRESENTATIONS

Dec 2025	***Exploring Augmentation-Driven Invariances for Graph Self-supervised Learning in Spatial Omics* - Workshop on Unifying Representations in Neural Models @ NeurIPS** • Poster presentation showcasing results of a paper accepted to PMLR of the UniReps workshop.
Sep 2025	***GRASS-MIL: Graph-based Representation and Analysis of Spatial Structures with Multiple Instance Learning* - Basel Computational Biology Conference** • Poster presentation showcasing preliminary results of ongoing PhD research
Sep 2024	***Spatial Omics Analysis for Hypothesis Generation Using Graph Neural Networks to Explore Cellular Organization in Non-Small Cell Lung Cancer* - scverse Conference, Munich, Germany** • Poster presentation showcasing preliminary results of ongoing PhD research

Jun 2024	***Spatial Omics Analysis for Hypothesis Generation Using Graph Neural Networks to Explore Cellular Organization in Non-Small Cell Lung Cancer* - Spatial Omics Conference, Ghent, Belgium** • Poster presentation showcasing preliminary results of ongoing PhD research

Conference Service

Sep 2025	***Reviewer* - Workshop on Unifying Representations in Neural Models @ NeurIPS** • Reviewed submissions for the UniReps Workshop at NeurIPS 2025

Publications

Dec 2025	***Exploring Augmentation-Driven Invariances for Graph Self-supervised Learning in Spatial Omics* - Workshop on Unifying Representations in Neural Models @ NeurIPS** • **Lovro Rabuzin**, Michel Tarnow, Valentina Boeva • `https://openreview.net/forum?id=3riPC1Y2Jb`
Dec 2025	***DeepCAST-GWAS: Improving the Discovery of Genetic Associations Using Deep Learning-Based Regulatory SNP Prioritization* - bioRxiv pre-print** • **Lovro Rabuzin**, Konstantin Heep, Sophie Sigfstead, Valentina Boeva • `https://www.biorxiv.org/content/10.1101/2025.11.27.690924v1`
Sep 2024	***NeRFmentation: NeRF-based Augmentation for Monocular Depth Estimation* - Workshop on Synthetic Data for Computer Vision @ NeurIPS** • Casimir Feldmann, Niall Siegenheim, Nikolas Hars, **Lovro Rabuzin**, Mert Ertugrul, Luca Wolfart, Marc Pollefeys, Zuria Bauer, Martin R. Oswald • `https://doi.org/10.48550/arXiv.2401.03771`

Scholarships, Honours and Grants

Dec 2024 Dec 2027	***ETH Grant* - ETH Zürich** • Supporting PhD research on *Decoding NSCLC: novel algorithms for spatial omics to reveal key structural patterns for cancer biomarker discovery and hypothesis generation*
Oct 2024	***ETH Medal* - ETH Zürich** • Awarded in recognition of an outstanding Master's thesis at ETH Zürich • Granted to top Master's theses demonstrating exceptional academic merit and innovation
Oct 2018 Jul 2021	***STEM Scholarship* - Croatian Ministry of Science and Education** • Scholarship awarded to students with outstanding grades in university entrance exams • In subsequent years, awarded to top-performing students in their respective undergraduate programmes
Nov 2019 Nov 2020	***Dean's list award "Josip Lončar"* - FER, University of Zagreb** • For excellent achievements in the second year of undergraduate studies • Awarded to the top 1% of all students in the study programme

Languages

Croatian	Native speaker	
English	CEFR level C2 - TOEFL score 119	22 Nov 2020
German	CEFR level C1 - DSD II	14 Feb 2018