FILIP KOVAČEVIĆ

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EDUCATION

Institute of Science and Technology Austria *2024 - present*
PhD in Computer Science and Mathematics
Supervisor: Marco Mondelli

Department of Mathematics, ETH Zürich *2021 - 2024*
Master in Mathematics, with Distinction GPA: 5.81/6.00
- *ETH-D Scholarship, full study and living costs covered*

Faculty of Mathematics, University of Belgrade *2017 - 2021*
Bachelor of Mathematics - Theoretical Mathematics and Applications GPA: 10.0/10.0
- *Award for Best Students of Faculty of Mathematics*
- *Scholarship for Exceptionally Gifted Students*

WORK AND RESEARCH EXPERIENCE

Department of Computer Science, ETH Zürich, Research Assistant *Zürich, Feb 2024 - Aug 2024*
Worked on theoretical foundations for fairness-accuracy trade-off in the high-dimensional setting, towards exploring regularization in the multi-objective optimization setting.

Microsoft Development Center Serbia, Software Engineer Intern *Belgrade, Jul 2020 - Oct 2020*
Worked on online machine learning audio denoising as part of the Office Media Group. Additionally, contributed to problem preparation and review for an international algorithmic programming competition Bubble Cup.

PUBLICATIONS

F. Kovačević, Y. Zhang, M. Mondelli, *Spectral Estimators for Multi-Index Models: Precise Asymptotics and Optimal Weak Recovery,* COLT, 2025

T. Wegel, **F. Kovačević**, A. Tifrea, F. Yang, *Learning Pareto manifolds in high dimensions: How can regularization help?*, AISTATS, 2025

STUDENT PROJECTS

Lovász theta function and Paley graphs, supervised by Daniil Dimitriev and Prof. Afonso Bandeira *2023*
Explored the behavior of the Lovasz theta function of localisations of Paley graphs. This resulted in formulating a conjecture for Lovász number of random circulant graphs, later successfully explored by the group.

Bloch Kato Conjecture, Master Thesis, supervised by Prof. Sarah Zerbes *2022-2023*
Wrote a compact exposition on the generalization of the famous millennium problem - the Birch and Swinerton-Dyer conjecture. This exposition also covered an introduction to Euler Systems, used to tackle parts of the conjecture.

TEACHING EXPERIENCE

Department of Mathematics, ETH Zürich, Teaching Assistant *Zürich, Feb 2022 - Jan 2024*
Held exercise sessions for the courses Linear Algebra, Group Theory, and Galois Theory.

Petnica Science Center, Teaching Associate *Valjevo, Mar 2019 - 2024*
Organized and delivered lectures on advanced mathematical topics for high school students. Also, supervised student research projects from conception to presentation, and coordinated team-building workshops.

Faculty of Mathematics, University of Belgrade, Teaching Assistant *Belgrade, Sep 2020 - Jan 2021*
Organized and held exercise sessions for the course Linear Algebra.

SKILLS

Programming Languages and Frameworks
C/C++, Python, PyTorch, Sage, Latex.