

Sandro Paradžik

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research experience

CaCTüs Intern: MPI for Biological Cybernetics

Tübingen, July – September 2024

- Applied dynamic mode decomposition (DMD) to analyze calcium imaging data from zebrafish larvae brains, aiming for data-driven discovery of functional subnetworks.
- Extracted significant spatiotemporal patterns, notably oscillatory dynamics in the optic tectum potentially reflecting winner-take-all circuit mechanisms.
- Demonstrated DMD's advantage in capturing coupled spatial and temporal neural dynamics compared to traditional methods (e.g., PCA, ICA, DFT).
- Contributed to research within the RoLi Lab (Drs. Drew Robson & Jennifer Li), supervised by Dr. Sophie Aimon.
- Selected for a competitive program with a 1.35% acceptance rate in 2024.

PSI Project Participant: ANNT

Sarajevo, July – December 2023

- Investigated uncertainty quantification techniques, including approximate Bayesian computation (ABC) and history matching (HM), for agent-based models in a UROP-like project.
- Critically reviewed scientific literature and presented findings on UQ approaches.
- Organized by Association for the Advancement of Science and Technology (ANNT). Supervised by Dr. Kenan Šehić.

industry experience

Math Expert: Mercor

October 2024 – Present

- Training LLM models (correcting their responses and providing solutions on which these models can be trained on) to solve math problems, covering high school to olympiad level problems.

AI/ML Intern: One Thousand

Berlin, February – April 2025

- Developed and maintained components for automating business document processing (e.g., invoices, offers) workflows using Python, FastAPI, and LLM APIs.
- Applied prompt engineering techniques for structured information extraction from documents.
- Contributed to short-term projects including predictive modeling for demand forecasting and automated web data gathering for lead generation support.
- Utilized Git for version control and gained practical experience with software development practices in a fast-paced startup environment.

education

BSc in Theoretical Computer Science: University of Sarajevo

Expected Graduation: July 2025

selected teaching and mentoring

Lecturer: Math School for Gifted Students

Sarajevo, 2022 – Present

- Regularly deliver lectures and problem-solving sessions on advanced mathematics to prepare high-school and middle-school students for competitions; also serve as a lecturer during math camps held twice a year.
- Organized by The Association of Mathematicians of Sarajevo Canton.

Tutor: MetaMath

2022 – Present

- Tutoring on advanced mathematical concepts and competition problem-solving techniques for the MetaMath training program (supported by Croatian Mathematical Society).

selected awards from math competitions

Mediterranean Mathematics Competition (Peter O'Halloran Memorial): Bronze	2021
Federation of Bosnia & Herzegovina: Ranked 2nd	2021
Mediterranean Mathematics Competition: Honorable Mention	2019
Federation of Bosnia & Herzegovina: Ranked 1st	2019
Mediterranean Mathematics Competition: Bronze	2018
Federation of Bosnia & Herzegovina: Ranked 3rd	2018

skills

- research, teaching, creative problem solving, technical communication, analytical thinking
- programming.....
- Python, C++, Git, \LaTeX
- languages.....
- Bosnian (native, also Croatian and Serbian), English (C1)