

Daniel Paleka

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Work Experience

- **Microsoft** **Belgrade, Serbia**
Aug 2018 - Oct 2018
Software Engineering Intern in the SQL Server team
I built a prototype implementation of data streaming into SQL Server through Apache Kafka, using mostly C++. My other work included a project of data serialization using the Avro format. I was also a problem setter for the Bubble Cup competition.
- **Stype CS** **Zagreb, Croatia**
Apr 2018 - June 2018, Dec 2018 - Apr 2019
Software Engineering Intern in R&D, part-time
I optimized performance-critical parts of Stype's camera tracking, object recognition and sensor fusion software, using the OpenCV library in C++. I used well-known computer vision algorithms for relative pose estimation and noisy data cleaning. I also implemented many features in the Qt interface of Follower (object tracking system) product.
- **Photomath** **Zagreb, Croatia**
Mar 2017 - Sept 2017, Dec 2017 - Mar 2018
Software Engineering Intern
I was a part of a small team that developed Photomath's graphing calculator. I have also contributed to test automation of the expert systems. Technologies I learned included git, object-oriented C++, and an internal functional programming Haskell-like language.

Education

- **ETH Zurich** **Switzerland**
Sept 2019 -
Master of Mathematics, GPA 5.91/6.0
Awarded Master Scholar Programme scholarship from the ETH Foundation.
 - Semester Paper: **Neural Network Robustness via Linear Programming** (Python, PyTorch, Gurobi)
 - Master Thesis (in progress): **Injectivity and Related Phenomena in Neural Networks**
 - Coursework focused on optimization, randomized algorithms, machine learning, and data science.
 - Teaching assistant for Mathematics of Machine Learning and Foundations of Reinforcement Learning.
- **University of Zagreb** **Croatia**
Sept 2016 - Jul 2019
Bachelor of Mathematics, GPA 4.8/5.0

Awards and Honors

- **Mathematics Competitions**.....
 - **International Mathematical Olympiad 2014, 2015, 2016** – three SILVER MEDALS
 - **European Mathematical Cup 2015** – FIRST PLACE
 - **Vojtěch Jarník International Mathematical Competition 2018** – THIRD PLACE
 - **Croatian National Mathematical Competition 2014, 2016** – FIRST PLACE
- **Programming and Data Science Competitions**.....
 - **ACM-ICPC Central Europe 2018** – SECOND PLACE (team) – qualified for the **2019 ICPC World Finals**
 - **Mozgalo 2018** – FIRST PLACE (team) – large machine learning competition for Croatian students

Technical skills

- C++, Python (PyTorch), \LaTeX , git, Arch Linux, problem solving, optimization, machine learning

Outreach

- **Young Gifted Mathematicians "Marin Getaldić"**, Jan 2015 – Jan 2018
I co-organized a week-long math summer camp for over 100 Croatian and international high school students.
- **International Mathematical Olympiad – training the Croatian team**, Dec 2016 - Jun 2019
I held over 60 three-hour exercise sessions with talented high-school students, and was the team leader for RMM 2019.
- **Croatian Open Competition in Informatics, Croatian IOI TST, CEOI 2021**, Sept 2017 – Sept 2021
I created or helped prepare over 40 problems for serious competitive programming contests.