Wojciech Fica

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Education

2018–2022 **MSc in Computer Science**, *University of Wrocław*, Poland
- Expected graduation: 2022. (Previously suspended studies with the purpose of finishing MSc in Mathematics first.)

2019–2021 **MSc in Mathematics**, *University of Wrocław*, Poland
- Completed studies with GPA 4.94. Final exam grade: 5.0 (scale: lowest 2.0, highest 5.0).
- Thesis: On the favourite points of a random walk in a random environment (RWRE).
  - **Obtained a new result** - found limit distribution of the number of visits to the favourite points of a RWRE.

2015–2018 **BSc in Joint Studies in Computer Science and Mathematics**, *University of Wrocław*, Poland
- Completed studies with GPA 4.87. Final exam grade: 5.0 (scale: lowest 2.0, highest 5.0).
- Thesis: The expected value of the total weight of a minimum spanning tree of a random complete graph.

2012–2015 **High School Diploma**, *14th High School in Wrocław*, Poland
- Finished CS/Maths/English profiled class in the best high school in Poland (2013).
- Final exams grades: CS - 100%, Maths - 96%, English - 94%.

Work Experience

Jul 2021 – Oct 2021 **Software Engineer Intern**, *Google*, Zürich

I continued on my previous year's work on answering knowledge queries in Assistant.
- Built a framework, in **C++** and **Python**, for headroom analysis and testing of new answering strategies.
- Designed and implemented a large scale data pipeline (**MapReduce**).
- Further improved latency of knowledge queries on a significant part of traffic. Impact accounts for 24% of the team's goal for the quarter.

Jul 2020 – Sep 2020 **Software Engineer Intern**, *Google*, Zürich

I worked on infrastructure responsible for answering knowledge queries in Assistant.
- Prepared Assistant infrastructure (**C++**) for experiments with query understanding and fulfilment strategies.
- Improved latency and quality of answers on a large part of queries.

May 2019 – Sep 2019 **Software Engineer Intern**, *Google*, Zürich

I worked on transliterating people's names and mining data from Knowledge Graph.
- **TensorFlow** and **C++** for building ML models to improve transliteration of names between different scripts and annotating names in documents and queries.

Jul 2018 – May 2019 **Software Engineer**, *Facebook*, London

I worked on detecting abuse of Facebook platform by malicious users.
- **Python**, **SQL** and **Haskell** for building new detection systems and improving existing ones.
- **Hack (PHP)** and **React JS** for improvements in review tools.

Jul 2017 – Oct 2017 **Junior Software Engineer**, *AXIT - (now part of Siemens)*, Wrocław

I implemented a monitoring system which collects statistics of running services, most code in **Java**. I also worked on updating internal messages format so that a software update does not cause version incompatibilities.

Oct 2016 – May 2017 **Part-time Teacher**, *1st High School in Jelenia Góra*

Part-time job. Teaching students C++, algorithms and data structures.

Skills and Projects

Tech **Modern C++ with STL**, I use modern C++ at work. Completed two university courses in programming in C and C++, I also do **competitive programming** in C++.

Artificial Intelligence, 3 University courses: **Machine Learning**, **Neural Networks and Deep Learning** and **AI for Games**. An example of a final project was to reproduce and discuss results presented in 'Word translation without parallel data' by A. Conneau et al. Skills: **Python, NumPy, TensorFlow**.

Stochastic finance, Completed two university courses on Stochastic Financial Mathematics and Quantitative Finance. Delivered 5 talks/ projects on pricing of various options. Main focus on BS model, finite difference method, uncertain volatility and martingale measures.

OCaml, Project - Proof checker implementation that supports first order logic and axioms. It can also fill gaps in a proof.

Advanced Monte Carlo methods, Project - Applications of MC methods to problems in queuing theory.

Prolog, Project - a cross **compiler** of a toy language similar to ALGOL 60.

Other (1) Good software design, problem solving and debugging skills - confirmed by superb feedback from my previous internships.

(2) Excellent communication and collaboration skills - my last internship required significant amount of collaboration between me and other stakeholders.

(3) Algorithms, Data Structures, OOP, Bash, Probability Theory, Functional Analysis, Haskell, Git, Mercurial

Achievements

Studies 27th place in **ACM Central Europe Regional Contest 2016**. (63 teams from 7 countries)

Talenty Foundation scholarship holder 2015/16, 2016/17 and 2017/18.

The University of Wrocław Rector's scholarship holder (2015–2018 and 2019-2021)

High School Finalist of **Polish Olympiad in Informatics** (2015)

High School 13th place in international mathematical competition Náboj 2015. (219 teams from 7 countries)

Hobbies

Hiking, Math puzzles