Aleksandra Świerkowska

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Experience

Technical University of Munich 10/2024-present
Research and Teaching Assistent
(Quantum Computing)

Leibniz-Rechenzentrum (LRZ) 10/2023-09/2024
Student Assistant
Developing LLVM passes optimizing quantum circuits
(C++/LLVM/Research)

Munich Quantum Instruments 05/2023-06/2023
Working Student
Developing software for single-photon detector
(C/C++/Network Sockets/SSPD)

Quadrature 07/2022-09/2022
Systems Engineering Intern
Managing configuration of Linux services and exploring
methods of vulnerabilities detection
(Linux/Systemd/Salt/Jinja/Wazuh)

Schneider Electric 10/2021-03/2022
Python Development Intern
DevOps and backend programming
(Linux/Python/FastAPI/Bash)

Facebook 06/2021-09/2021
Production Engineer Intern
Extending servers troubleshooting system
(Linux/Python/Apache Thrift/Mercurial)

Antmicro 07/2020-04/2021
Intern
Programming board with a FPGA SoC module,
working on LiteX BIOS development
(Linux/C/Python/FPGA/VHDL/Vivado/RTOS)

Education

Technical University of Munich 04/2022–07/2024
M.Sc. Informatics
Master's Thesis: "Multi-Objective Circuit Optimizations in
the Munich Quantum Software Stack"

Poznan University of Technology 10/2018-02/2022
B.Eng. Computing
Bachelor's Thesis: "Design and Implementation of AWS
Voice Service Extension with Selected Built-In Features"

Publications

A. Świerkowska, J. Echavarria, L. Schulz, and M. Schulz, "Achieving Pareto-Optimality in Quantum Circuit Compilation via a Multi-Objective Heuristic Optimization Approach" *IEEE International Conference on Quantum Computing and Engineering (QCE)*, Montreal, Canada, to appear, 2024.

Extra activities

Leader of TinyML section 03/2021-09/2021
GHOST academic club
Managing a grant project for 15 students,
focused on developing a speech and object
recognition system on Arduino Nano 33
BLE Sense
(Tensorflow Lite/Python/C/C++/AI)

IT for SHE Volunteering Program 10/2020
Preparing workshops for primary school students
(Leadership/Teaching)

Awards and programs

CuValley Hack 2022
1st place out of 15 teams from Poland 03/2022
https://github.com/jkarolczak/slag-temperature-cu-valley-hack-2022

Hackyeah! 2021 - "Best place for … everything?"
2nd place out of 10 teams from Poland 12/2021

Intel and Perspektywy Education Foundation New
Technologies for Girls Scholarship
1 of 25 girls chosen out of over 800 10/2021

Google Women in Tech Mentoring Program
1 of 31 students chosen across Poland 09/2021-11/2021

Facebook Women @ EMEA Virtual Hack 2021
3rd place out of 18 teams from EMEA 07/2021
Leader of 5 people team

BEST Hacking League - AI Hackathon
1st place out of 20 teams from Poland 04/2021
https://github.com/Zuzanna-Trafas/bhl-ai-hackathon

Rector of Poznan University of Technology
Scholarship for 10% of the best students 2020-2022