

ADAM DERYŁO

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EDUCATION

Technical University of Munich

Masters of Informatics

Oct. 2024 – Ongoing

Munich, Germany

- Best technical university in Germany according to the QS ranking.

Warsaw University

Double degree: BSc in Computer Science & BSc in Cognitive Science

Oct. 2020 – Jul. 2024

Warsaw, Poland

- Top rated CS undergraduate program in Poland according to QS ranking.
- 1st-year modules: Functional Programming, OOP, C, Introduction to AI, Linear Algebra.
- 2nd-year modules: Adv. Algorithms, Databases, Computer networks, Web Apps, Statistics, NLP.
- 3rd-year modules: Distributed systems, Concurrency theory, Security of computer systems.
- Rector's scholarship for academic achievements.

2SLO High School

Computer Science, Mathematics & Philosophy profile

Sep. 2017 – May. 2020

Warsaw, Poland

- Top-4 rated high school in Poland according to Perspektywy ranking.
- Laureate of the 2018 Polish Olympiad in Philosophy for high school students.
- Scholarship for outstanding academic achievements.

EXPERIENCE

Amazon

Software Engineering Intern — AWS CDK, Typescript, React

Jun. 2024 - Sep. 2024

Madrid, Spain

- Developed and deployed a web application for an ML inference platform, responsible for image search at Amazon.
- Implemented UI infrastructure using AWS services (CodePipeline, CodeBuild, API Gateway, Lambda), ensuring seamless integration with authentication and resolving cross-origin issues.
- Established end-to-end testing framework with NightwatchJS and Selenium Grid, integrating it into the CI/CD pipeline.
- Utilized AWS CDK for infrastructure as code, improving deployment efficiency and monitoring capabilities.

Taiwan Semiconductor Manufacturing Company

Software Engineering Intern — Pytorch, Huggingface, Scikit-learn, Python

Jul. 2023 - Sep. 2023

Hsinchu, Taiwan

- AI Application and Platform Development Team responsible for the automation of fab processes.
- Developed custom BLIP2 based model for photomask defect classification and dataset bootstrapping.
- Prototyped the application of Stable Diffusion models for rapidly bootstrapping rare photomask defect data.
- Ranked in the top 8 out of 80+ Interns in the final competition.

Goldman Sachs

Summer Analyst | Redis, Java, Procmon, Golang

Jun. 2022 - Aug. 2022

Stockholm, Sweden

- Global reconciliations team, daily processing of 80+ mln trade & position data entries.
- Collaborated on optimizing caching performance and reliability of data loading processes.
- Worked on extending database performance limits with intelligent cache priming based on Change Data Capture.
- Developed Redis cache monitoring tool suite to speed up emergency debug and development cycle.

ReSpo.Vision

Software Engineer Intern | Python, Postgre, Git, SQL, Pytorch

Jul. 2021 - May. 2022

Warsaw, Poland

- 40+ sprints under the Scrum development framework in a rapidly growing team.
- Worked on a back-end implementation of a betting hints generator that withstood 100k API calls daily.
- Created a deep learning NLP module using architectures such as BERT.
- NLP module tackled the problem of context-dependent noun declination in Slavic languages.

Bain & Company

Spring Intern | Nielsen, Ipsos, Bain's overlay for MS Office

Mar. 2021 - Apr. 2021

Warsaw, Poland

- Supported a consulting team in the area of wood market data analysis.
- Collaborated on a business case under the supervision of a dedicated mentor.

PROJECTS

- Bachelor thesis at Nencki Institute** | *Python, Pytorch, Tianshou* **Nov. 2023 - Oct. 2024**
- Collaborated on computational neuroscience research at the Nencki Institute of Experimental Biology.
 - Enhanced a novel reinforcement learning model of the dopaminergic circuit.
 - Developed and optimized learning rules for Spiking Neural Networks, improving convergence of SNN based agents.
 - Contributed to extensive literature review done by the research team.
- Bachelor thesis at NVIDIA** | *C++, CUDA, CMake, Python* **Oct. 2022 - Jun. 2023**
- Worked with NVIDIA DALI team on accelerating image decompression in ML astronomy workflows.
 - Contributed module to the open-source DALI library, improving the performance of the FITS decoder.
 - Devised a testing & profiling pipeline to allow for benchmarking various CUDA kernel optimizations.
 - Showcased the result by rewriting NASA Coronal Hole Semantic Segmentation pipeline and achieving 70% speedup.
- ELF Binary Reconstruction Tool** | *C++, Assembly, ELF Format, Reverse Engineering* **Feb. 2024 - Apr. 2024**
- Developed a program to reconstruct relocation tables and symbols from stripped ELF executables.
 - Implemented heuristic algorithms for function boundary detection and instruction classification.
 - Designed solution for i386 architecture binaries compiled for Intel Quark microcontrollers.
 - Such reconstruction allows for modifying parts of compiled code without hassels of full decompilation.
- Hearts Game Server** | *C, TCP/IP, Multithreading, Protocol Design* **Apr. 2024 - May 2024**
- Implemented a TCP server for Hearts game, directly using system calls for networking needs .
 - Developed robust serialization and deserialization of socket data with timeout mechanics.
 - Created a flexible game engine capable of handling various Hearts rule variations.
 - Applied concepts from Beej's Guide to optimize server performance.
- Deep Neural Networks** | *Python, Pytorch, Tensorboard* **Nov. 2023 - Jan. 2024**
- Recreated implementations of 4 breakthrough ML papers from scratch.
 - Implemented following papers from scratch:
 - "The Reversible Residual Network: Backpropagation Without Storing Activations"
 - "PaDiM: a Patch Distribution Modeling Framework for Anomaly Detection and Localization"
 - "Attention is all you need"
 - "Bigger, Better, Faster: Human-level Atari with human-level efficiency"
 - Scored highest mark awarded to the best 5% of course participants.
- C interpreter** | *Haskell, GHC, Cabal, BNFC* **Apr. - Jun 2023**
- Created an interpreter for a C-like language, called Latte.
 - Implemented support for scoping, functions, multidimensional arrays, classes and many more.
 - Utilized monad transformers to create various features such as garabage collection mechanism for the language.
- Minix OS** | *C, Qemu, Bash, rsync* **Apr. - Jun. 2023**
- Developed various custom features for the Minix OS, including modifying the kernel.
 - Implemented theoretically optimal scheduler, improving the performance of the system.
 - Devised an add-on for the virtual file system which introduced file exclusivity mechanism.
- BEST hacking league** | *React, Python, OpenAI Playground* **Apr. 2023**
- Earned 2nd place in a hackathon organized by the Board of European Students of Technology.
 - Developed a voice assistant for Warehouse 4.0 workers.
 - Extended LLM knowledge base by leveraging a NoSQL database, improving query handling for warehouse layout.
 - Devised intelligent prompting for a voice assistant, improving context awareness and user experience.
- Distributed alerting system** | *Grpc, Google Cloud Platform, Python* **Nov. 2022 - Jan. 2023**
- Developed scalable microservice system for monitoring services and running complex alerting routines.
 - Utilized GRPC, PubSub queues, Cloud SQL and other tools to satisfy SLO requirements for 10k services.
 - Project supervised by Google employees.
- Goldman Sachs EMEA 2022 Hackathon** | *Python, Flask, Git* **Nov. 2022**
- Achieved first place during a challenging 24-hour hackathon.
 - Designed and implemented a web portal aimed at enhancing Goldman Sachs' recruitment efforts.
 - Implemented a stock market simulation game as one of the features.
 - Contributed to the development of a 3D render for a physical token with a link to the portal.

N-dimensional labyrinth solver | *C, Valgrind, Cmake, Git*

Jun. 2022

- Developed a high-performance traverser for multidimensional mazes/large graphs.
- Utilized most memory efficient solution by incorporating 2-bit BFS algorithm.
- Implemented arbitrary large integer type to facilitate enormous labyrinths and showcase memory efficiency.

Concurrent Unix-like directory | *C, Pthreads, Helgrind, Cmake, Git*

Jan. 2022

- Implemented add-ons to the file system, which allowed for concurrent creation, deletion and movement of files.
- Utilized tailored-made readers-writers lock with Latest Common Ancestor writer locking.

Enhancing Splay Tree for pattern search | *C++, Catch2, Cmake, Bash, Git*

Dec. 2021

- Developed an algorithm for efficient search of patterns in DNA sequence.
- Utilized a splay tree data structure enhanced with attributes updated through lazy propagation.

EXTRACURRICULAR

Member, Bain & Company Champions Class 2023

2nd Place, PSDC 2020 debating championship, preliminary stage to World Schools Debating Championship.

Laureate, 8/1000+ in the 31st National Philosophy Olympiad

SKILLS

Programming Languages: Python, Java, C/C++, JavaScript, R, Ocaml, Go, SQL

Technologies: Git, Fedora/Ubuntu/Debian, Jira, Redis, Docker, Pydantic, React, Cloud Run

Natural languages: English (C2), Polish (Native), Spanish (B1)