Adam Deryło

+48 698 608 344 a.m.derylo@gmail.com linkedin.com/in/adamderylo github.com/aderylo

Education

Technical University of Munich **Oct. 2024 – Ongoing**
Masters of Informatics *Munich, Germany*

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

Warsaw University **Oct. 2020 – Jul. 2024**
Double degree: BSc in Computer Science & BSc in Cognitive Science *Warsaw, Poland*

- Top-rated CS undergraduate program in Poland according to the 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 **Sep. 2017 – May. 2020**
Computer Science, Mathematics & Philosophy profile *Warsaw, Poland*

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

Experience

Amazon **Jun. 2024 - Sep. 2024**
Software Engineering Intern — AWS CDK, Typescript, React, Python *Madrid, Spain*

- NintAi, applied science team, responsible for providing ML modles for visual navigaiton.
- Developed and deployed a UI for a ML inference platform, which facilitates image search at Amazon.
- Implemented UI infrastructure using AWS CodePipeline, CodeBuild, API Gateway, Lambda, SIGV4 Auth, ect.
- Established end-to-end testing with NightwatchJS and Selenium Grid, integrating it into the CI/CD pipeline.

Taiwan Semiconductor Manufacturing Company **Jul. 2023 - Sep. 2023**
Software Engineering Intern — Pytorch, Huggingface, Scikit-learn, Python *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.
- Ranked in the top 8 out of 80+ Interns in the final competition.

Goldman Sachs **Jun. 2022 - Aug. 2022**
Summer Analyst | Redis, Java, Procmon, Golang *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 **Jul. 2021 - May. 2022**
Software Engineer Intern | Python, Postgre, Git, SQL, Pytorch *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 **Mar. 2021 - Apr. 2021**
Spring Intern | Nielsen, Ipsos, Bain's overlay for MS Office *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, SLURM, Wandb* **Nov. 2023 - Oct. 2024**

- Collaborated on computational neuroscience research at the Nencki Institute of Experimental Biology.
- Co-developed a novel reinforcement learning model of the dopaminergic circuit.
- Conducted experiments on HPC cluster, using SLURM for scheduling and Wandb for monitoring.

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 hassles 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, Quemu, 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

- Rock climbing varsity team.
- Bain & Company Champions Class 2023.
- Laureate of the 31st National Philosophy Olympiad.

Skills

Programming Languages: C/C++, Python, Typescript, Haskell, Go, Bash, Lua, System Verilog
Technologies: Nvim, Qemu, Git, Linux, Tmux, Gdb, CMake, CDK, React
Natural languages: English (C2), Polish (Native), Spanish (B1), German (A1)