Adam Deryło

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Education

Warsaw University **Oct. 2020 – Ongoing**

Bachelor of Science in Computer Science *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 **Sep. 2017 – May. 2020**

Computer Science, Mathematics & Philosophy profile *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

Taiwan Semiconductor Manufacturing Company **Jul. 2023 - Sep. 2023**

Intern, AI Application & Platform Department *Hsinchu, Taiwan*

- AAPD-01 team responsible for automation of fab processes on various established nodes.
- Worked on improving the performance of deep learning models for photomask and die defect detection.
- Researched custom multimodal generative AI models based on BLIP2 & Stable Diffusion for bootstrapping data for DL defect detection and classification models.
- Collaborated on optimizing interference of LLM models inside rule based captioning pipelines.
- Top-8 internship performance among cohort of 80+ interns.

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 with NVIDIA | *C++, CUDA, Python* **Oct. 2022 - Present**

- GPU acceleration of image decompression in machine learning workflows.
- Constructing a CUDA kernel to enhance the decoding of data encoded using the RICE algorithm.
- Project requested by NASA data scientists that use FITS data format compressed with RICE algorithm.
- Gained hands-on experience with CUDA virtual memory management, under the guidance of NVIDIA employees.

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.

C interpreter | *Haskell, GHC, Cabal, BNFC* **Apr. 2023**

- Created an interpreter for a C-like language, called Latte.
- Implemented support for scoping, functions, multidimensional arrays, classes and many more.
- Developed a parser and lexer for the language using BNFC, employing functors to achive more elegant polymorphism.
- Utilized monad transformers to create various features such as garabage collection mechanism for the language.

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.
- 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 mock website aimed at enhancing Goldman Sachs' recruitment efforts.
- Implemented a stock market simulation game within the tight time constraints of the hackathon.
- 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)