Robert Orlikowski

SOFTWARE ENGINEER

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Technical Skills

Programming	C, C++, Python, Go, Ocaml, SQL, Bash, JavaScript
Frameworks	Pytorch, FastAPI, GoogleTest, React
Tools	Git, GitHub Actions, Gitlab CI/CD, GDB, Make, CMake, Docker
Other	Linux administration, applied math, basics of electronics,

Experience

Dolby Laboratories

- Living Room Electronics C/C++, March 2024 - Present

Education

University of Wrocław:

- BSc joint individual studies in Mathematics and Computer Science 2020-2024.

Mathematics Key courses:

- Real Analysis I,II,III, Probability, Statistic, Stochastic modeling, Numerical Analysis, Advanced differential equations 1, Abstract Algebra, Advanced linear algebra 1, linear algebra 2, Discrete Mathematics

Computer Science Key courses:

- Compilers Construction, Operating Systems, Computer Architecture, Programming Drivers for Linux, Computer Networks, Practical aspects of computer networks, Neural Networks and Natural Language Processing, Machine Learning, Databases, Algorithms and data strutures, Programming methodologies, Logic for informatics

Courses Online:

- CMU 10-414: Deep Learning Systems, CMU 15-445 Database System, MIT 6.824: Distributed Systems, MIT 6.180 Operating System Engineering

Projects

StreamingLite | C++, STL, Cmake, GoogleTest

- Streaming database system.
- Single Node, embedded database.

Xi Compiler | Ocaml, Dune, Ocamllex, Menhir

- Lexer and parser in ocamllex and menhir.
- Bidirectional typechecker.
- Code generator translating AST into intermediate low level language.
- Register allocation algorithm that allow languange to be executed on real architecture with finite amount of registers.
- Live variable analysis optimalization.

Raft Consensus Algorithm | Go

- Distributed consensus algorithm.
- Replicated state machine, Leader election, Log replication.

Diffusion model for image denoising | Python, Pytorch

- Written as part of 3 person team, project for deep learning course.
- Implemented sampling algorithm based on sciencific papers, Trained model on google cloud using TPU's

Deep learning framework | Python, Numpy

- Cpu only deep learning framework using numpy as backend.
- Functionalities: Autograd on N-dimensional Matrices, SGD with momentum and Adam optimizers, Dataloader, Custom weight initialization.

About Me

I'm a math and computer science student at the University of Wroclaw. I'm interested in machine learning, databases, applied math, and system programming. In my free time, I enjoy playing sports, digging into open-source projects, learning about history, and watching old movies.