YUANDA DONG

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EDUCATION

M.S. in Computer Science

University of New South Wales

Sep 2021 – Dec 2022 Sydney, NSW, AU

WAM: 88.0

B.S. in Computer Science and Mathematics

University of Sydney

Mar 2018 – Jun 2021 Sydney, NSW, AU

WAM: 86.4

SELECTED SKILLS

Python

Numpy | Matplotlib | pandas | TensorFlow | SageMath | Networkx | FastAPI | CVXPY | OpenCV binding

Rust

Code in Rust | Serde | RON

C++

Code in C++ | Intel ISPC | Cuda

Web Development

HTML CSS Javascript | React | MongoDB | Railway

Maths

Algebra | Calculus | Statistics | Optimisation | Network Analysis | Numerical Analysis

Other

Java | Linux | AWS EC2 | Docker | Github Actions | Sql | Latex | Emacs Lisp | Magit!

LINKS

View this resume as an (❤ interative) WebAssembly app:
yuanda-dong.github.io/resume-as-code

View the source code:
github.com/Yuanda-Dong/resume-as-code

ABOUT ME

Aspiring software engineer with background in mathematics. Self-motivated learner, problem solver and linux hacker.

EXPERIENCE

UNSW Projects

Sep 2021 – Dec 2022 Sydney, NSW, AU

- 🔗 Implemented an "adventure" style 2D game in the terminal, which supports a generic quest system that allows players to add new quests to the game easily.
- 🔗 Implemented an Internet Relay Chat (IRC) server in Rust, that spawns a new OS thread for each client connection, and maintains the shared data in the main thread.
- 🔗 Wrote an essay summarizing convex optimization, and experimented with Boolean LP relaxation, and portfolio optimisation using CVXPY.
- 🔗 Implemented the front-end of a Kahoot clone using ReactJS. The game allows an admin to host the kahoot game, and multiple players to play.
- 🔗 Worked in a team to develop an event management platform TicketPlanet similar to Eventbrite. I worked mainly on the front-end React code, and backend logic such as search filter, recommender system.

USYD Projects

Mar 2018 – Jun 2021 Sydney, NSW, AU

- 🔗 Worked in a team to implement traffic sign detection algorithms using a combination of computer vision and neural network and tested using simulated and real-world data. I also worked on interfacing the model prediction with controlling model cars.
- 🔗 Worked with biochemistry students to apply network analysis techniques to identify critical nodes in yeast network for limiting cancer.
- 🔗 Worked in a team to built parser and intepretor for a simple imperative language μ in Java. It's similar to building a CPU instructions emulator, except that we get input as ASTs instead of instructions. We also did compiler optimisation such as unreachable code removal.

Side Projects

Dec 2022 – May 2023 Sydney, NSW, AU

- 🔗 Implemented parallel prefix-sum, and parallelised a circle rendering algorithm that utilistes the GPU in Cuda. The Code was ran on an Amazon EC2 instance.
- 🔗 Implemented a C++ library that executes tasks provided by an application in parallel using a thread pool. Conditional variables are used to prevent threads from busy waiting.
- 🔗 Implemented and analysed various numerical algorithms, such as finite difference method, QR factorisation, graph partitioning, root finding, gradient descent etc.
- 🔗 Implemented a simple linux command pstree in Rust.
- 🔗 Made a personal blogging website that uses emacs org-mode, and this resume website, both with Github Pages.
- 🔗 Implemented parts of the rasterisaiton pipeline (WIP).