

0.1 Personal server management March 2021 - Today

Side project

Run an Ubuntu server on Raspberry pi 4.

Run a real time discord translator bot using PAPAGO and google translator APIs for two years in a server with 30k users.

Developed a bot can search programming problem from a site and run a python code in a discord.

- Restricted some functionality for security.

- Supports input that reads input like standard inputs.

Developed an automated youtube live/twitter space archiver that detects youtube live/twitter space from channels.

Developed a video editor running with text file by ffmpeg with simple custom language.

Developed a system that gets a log from network attached storage(NAS) and parses it to summarize user accesses.

Developed an email notification system for server access and other projects.

0.2 Deapocalypse March 2023 - Today

Indie Game Development

Factory building shooter game.

Planed to sale on steam market.

0.3 Revist the Supernodal Floyd Warshall algorithm November 2023 - December 2023

Side project

Implemented the Supernodal Floyd-Warshall algorithm from the paper <https://dl.acm.org/doi/10.1145/105555.105556>.

78 times fasters than a Floyd-Warshall algorithm with a single thread.

17 times fasters than a Floyd-Warshall algorithm with multiple threads with other optimization techniques.

Utilized entire threads with OpenMP.

Source is open on the github repository <https://github.com/programelot/Supernodal-Floyd-Warshall>

0.4 Matrix multiplication on GPU July 2022 - September 2022

Side project

Developed 11 matrix multiplication algorithms on CPU and GPU.

Estimated and compared performance of each algorithms.

Utilized the shared memory on GPU.

Implemented Strassen's algorithm and Winograd's algorithm.

Source is open on the github repository <https://github.com/programelot/MatrixMultiplicationhtt>

0.5 BackRomii July 2022

Indie Game Development

Developed an escape game from auto generated maze with first person view.

- Used recursive division method to generate maze.

Optimized the game by developing an off culling algorithm.

Developed a path finding algorithm.

Developed in two weeks like game jam.

Game has been released on the web. <https://aintmos.itch.io/backromiihttps://aintmos.itch.io/bac>

1162 views and 292 downloads happened.

0.6 Research about PGO September 2021 - February 2023

Master's Thesis

Developed a tool chain that does a profile-guided-optimization for processing-in-memory on the simulator.

Developed a simple language that programmer can define offloading heuristic outside of the tool-chain.

**0.7 Research about Kronecker algebra September
2019 - December 2019**

Bachelor's Capstone project

Evaluated kronecker algebra computation on the cloud environment.

Received 1st price between other capstone projects

**0.8 Projection based AR Evaction Simulator (PARES)
March 2019 - June 2019**

Bachelor's Capstone project

Developed an AR evacuation simulator using a projector and the kinect.

Received 1st price between other capstone projects