Shengtao Yao

New York | sy3535@nyu.edu | +1-551-331-3581 | Shengtao Yao | FlappyBob

Education

New York University *Sept 2022 – May 2026*

BA in Computer Science and Mathematics

- GPA: 3.87/4.00
- **Coursework:** Operating system, Parallel computing, Applied Internet Technology, Intro to Robotics Intelligence, Probability and Statistics
- **Teaching Assistant:** Operating system by prof. Jocelyn Chen

Experience

Software Development Engineer *Shanghai, China*

Huawei Technologies Co., Ltd., Shanghai, China *June 2024 – Aug 2024*

*Manage resource pools and provide interfaces to **L2RAT**(Level 2 Radio Access Technology Software)*

- Designed and implemented a solution to map application models to fixed CPU IDs, adding logging for validation in simulated Board Baseband Unit communication, improving system efficiency by reducing excessive CPU usage.
- Implemented process control mechanisms to clean up zombie processes and optimized CPU allocation through virtual CPU pools, reducing CPU idle time by **25**% and improving system throughput.
- Developed clear interfaces to monitor performance data of hot functions generated from Linux tool **perf**, providing efficient tools for system developers in group and improving debugging readability.

Skills

Languages: C/C++, Java, Python, R, Javascript

Web Frameworks: Express.js, React.js

ML libraries and Frameworks: Scipy, Numpy, Pandas, Scikit-learn, Pytorch

Projects

tsh shell *tsh*

A customized Unix shell implemented in C

- Enable users to manipulate running processes using commands like **fg**, and **bg**. It allows jobs to move between foreground, background, and stopped states.
- Handle signals like **SIGCHLD**, **SIGINT**, and **SIGTSTP** to manage process lifecycle. Synchronize processes and reap terminated jobs while allowing command evaluation.
- Implemented user-level functions like **wc**, **ls**, and **pipe**, improving overall usability.

NYU Discuss *NYU Discuss*

A fully functioning discussion website, currently deployed in NYU Courant server

- Develop **RESTful** APIs to support full CRUD (Create, Read, Update, Delete) operations for users, posts, and comments.
- Implement user authentication with password validation and **JWT-based** stateless session management, ensuring that only authorized users can access protected resources
- Design database models with integrated validation using the **Validator** library, ensuring data integrity in user inputs

Weensy OS *Weensy OS*

A small OS implemented in Assembly, C (not releasing code for class rubrics)

- Develop kernel-level process scheduling to efficiently manage context switching and execute runnable pro-

cesses.

- Build comprehensive virtual memory management functions, page table checks, ownership validation, and memory mapping visualization, finally supporting 2 MB physical and 3MB virtual memory