Brady Chan

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EDUCATION

University of California, Santa Cruz – Jack Baskin School of Engineering **GPA: 3.67**
Bachelor of Science in Computer Science *June 2023*
Dean's Honor List: Fall 2021, Winter 2021, Spring 2021, Spring 2022

EXPERIENCE

Digital Signal Processing Software Engineer ***October 2023 - Present***
Nawcwd

- Implemented GPU-accelerated processing to optimize the construction of spectrograms from radar data. The delivered deployment featured interleaved GPU processing stages to enhance throughput and expedite the FFT execution. The final executable achieved a speedup of 83%, accompanied by comprehensive unit testing and end-to-end testing.
- Adopted noise/clutter detection algorithms to discern between tangible entities and false positives in range doppler maps. This subroutine analyzes the incoming radar pulse characteristics to determine whether or not it is random energy. This approach achieved a 36% reduction in false positives during post-preprocessing.

Artificial Intelligence Research Intern ***March 2023 – August 2023***
Osaka University

- Leveraged NSD dataset and RISE method to investigate stable diffusion and fMRI image reconstruction.
- Redesigned linear model to map fMRIs to latent representation and pipelined encoding to stable diffusion.
- Delivered final presentation to professors and researchers showcasing methodologies and findings.

Undergraduate Research Assistant ***June 2022 – September 2022***
University of California, Santa Cruz

- Adapted LSTM neural network to capture sequential patterns to learn optimal gameplay strategies.
- Developed pipeline for seamless game preprocessing and integration to model training process.

PROJECTS

Audio Visualizer | *C++* **May 2022**
Technologies Used: Git, Qt, OpenGL, Windows Audio Session API, Multithreading, Scrum

- Led 4 developers as the project lead, to create an audio visualizer utilizing Windows Audio Session API.
- Final release created using full-cycle software development including system design, release plans, implementation, sprint reports, testing, and a final release.
- Developed a multithreaded design to copy and process data from the endpoint buffer while concurrently generating visuals.

PintOS | *C* **February 2022**
Technologies Used: Git, Pthreads, Multithreading, Preemption, Mutex, Semaphore, Unix

- Developed a kernel for a low-level operating system to manage threads and the file system.
- Implemented thread preemption, thread priority, priority donation, and system calls.
- Utilizes thread safe operations to avoid race conditions and avoid possible deadlock scenarios.

Email System | *JavaScript, PostgreSQL* **November 2022**
Technologies Used: Git, React.js, Express.js, Node.js, Puppeteer, Jest, Material UI, OpenAPI

- Designed a full stack web application to allow users to retrieve emails through a user interface implemented with React and Material Ui.
- Created asynchronous RESTful API to be retrieved by the frontend via Express.js and PostgreSQL.
- Full application testing of all components between backend, frontend, and end to end.

TECHNICAL SKILLS AND ACHIEVEMENTS

- **Languages:** C/C++, Python, CUDA, x86 Assembly, HTML, CSS, JavaScript, React.js, PostgreSQL
- **Developer Tools:** Git, Conda, Jupyter Notebook, Qemu, Qt, Vim