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 CUDA api to optimize the construction of spectrograms. The delivered deployment featured interleaved GPU processing stages to enhance throughput and expedite the FFT execution. The final executable achieved a speedup of 63%, accompanied by comprehensive unit testing and end-to-end testing.
- Adopted noise/clutter detection algorithms to discern between tangible entities and false positives. 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