Connor Bramham

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PROJECTS AND SKILLS

- **Ard Engine:** Building a 3D game engine from scratch with Rust. Large project built over 7 years. A video demonstration and multiple articles are available in my portfolio.
    - Created a GUI editor, allowing users to create 3D levels in real time without code.
    - Designed a scheduler to automatically multi-thread engine systems, saving time that would be spent identifying dependencies by hand.
    - Created a build tool that generates code used by shaders and the engine which ensures that data structure layouts and bindings are identical between the CPU and GPU.
    - Created an abstraction layer for the Vulkan API to simplify graphics programming.
    - Made a CLI tool to convert 3D models and images into a format optimized for the engine.
- **PMO Benchmarking (2023):** Capstone Project; Created and modified benchmarks in C, C++, and Python to measure performance of persistent memory objects with a small team.
    - Automated benchmark result runs using a Python script, saving the team time during testing.
    - Converted “Mnemosyne-gcc” (a large Linux persistent memory library written in C and C++) to use our sponsor's API which helped find bugs in their API.
    - Managed the project and communicated with our project sponsor, ensuring our deliverables were finished on time for their paper.
- **Facebetter (2022):** Created a live chat web application with other social networking features on a team using a MERN stack. Responsible for the live chat feature and other API endpoints.
    - Developed a prototype of the live chat feature in one day, enabling the front end team to get started quickly.
    - Created a data format verification utility used by all API endpoints that helped the front end team detect problems with their code.
- **Automated Greenhouse (2019):** Created an automated greenhouse using an Arduino in C++.
    - Automated watering system that pumps water based on soil moisture.
    - Designed and built a solar tracker to optimize power generation from solar panels.
    - Created a command system to help debug and override system behavior.
- **Published in SIAM SIURO (2018):** Wrote a paper with peers describing an original induction proof of the threshold decomposition property of median filters. (DOI: 10.1137/18S017120)

EDUCATION

University of Central Florida — **Aug. 2019 - Aug. 2023**
BS, Computer Science — *Orlando, FL*

- **Honors:** summa cum laude (3.98 GPA), President’s Honor Roll
- **Related Courses:** Processes of Object Oriented Software Development; Concepts of Parallel and Distributed Processing; Computer Architecture.

WORK EXPERIENCE

Socrates Preparatory School — **Nov. 2017 - Aug. 2021**
IT Specialist — *Oviedo, FL*

- Created a program for the RaspberryPi to display images and video for the reception room.
- Built a database program used by administration to track student progress and achievements.