Brandon Wong

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Education

University of California, Berkeley Aug 2021 – May 2025
Bachelor of Arts in Computer Science *GPA: 4.0*

- **Coursework**: Data Structures, Efficient Algorithms, Computer Architecture, Operating Systems, Linear Algebra, Computational Music, Computer Graphics

Skills

Languages: Python, C, C++, Java, Rust, Node, HTML/CSS, JavaScript, Bash/Shell, OpenGL
Libraries: SvelteKit, React, Express, Flask, MongoDB, NumPy, Pandas, PyTorch
Tools: Linux/Unix, Git, CMake, Unit Testing, Docker, Jira, Jenkins, Docker, Splunk

Experience

Software Engineer Intern May 2024 – August 2024
Tesla – Vehicle Software *Palo Alto, CA*

- Added support for Cyber Truck, and all models with rear displays on the internal testing infrastructure written in **Python**, used by **250+** engineers daily
- Implemented a **Python** module that enables engineers to quickly access rear display activity of a car, which involved analyzing a **C++** firmware codebase and using the Splunk API, shaving roughly **66%** of debugging time involving rear displays
- Integrated performance reports with a Jira bot to generate reports for **50+** drive notes per week, using **Python** and Jenkins API, saving **15-30 minutes per** issue investigation

Fullstack Engineer and Data Scientist Intern Jun 2023 – Aug 2023
HookTheory (Music Software Startup) *San Francisco, CA*

- Applied trie data structure to represent **50k+** chord progressions and songs in **Python** and **JavaScript**, allowing song progression generation via sampled probability distribution
- Optimized algorithms using pruning techniques, reducing script runtime from **90-120 min to 6-7 min**
- Collaborated in a pair to design and build a map interface using React.js and MapBoxGL, organizing **50k+ data points**, to be scaled to **500k+ users**

Projects

StarDust | *C++, OpenGL* Apr 2024 – May 2024

- Delivered a 3D interactive simulation of a supernova, forked from a bare-bones N-body simulation written in **C++**, alongside 3 teammates
- Integrated SPH (smoothed particle hydrodynamics) into the repository's N-body physics engine
- Designed, wrote, pipelined the shaders involved in volumetric rendering and color-to-particle mappings using **GLSL**, greatly increasing the aesthetic value in the simulation

Pintos OS | *C, x86 assembly, Docker, Linux, Git* Sep 2023 – Dec 2023

- Applied knowledge about concurrency concepts, including data races, locks, and semaphores, to design and implement complex features involving multiple threads
- Debugged a large, complex code base and wrote unit tests in **Perl** and **C** for quality assurance
- Collaborated with 3 other students in pair programming as well as planning out and writing design docs

NumC | *C* Apr 2023 – May 2023

- Accelerated 2D convolutions with data-level and thread-level parallelism with SIMD Intel Intrinsics and OpenMP, achieving a **9.6438x overall speedup** from staff solution, **surpassing 87%** of submissions on computations involving randomized matrices
- Implemented a multi-process distributed memory model using Open MPI