Ben Kunkle

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Software Tools: vim Git Linux Vercel NextJS **Languages:** Python Rust Typescript Java C Go Lua

Experience

Millipyde *Research Project* | https://digitalcommons.calpoly.edu/theses/2374/

Skills Team Work, Collaboration

Description Worked with a partner to develop benchmarks for Millipyde, a library that uses AMD ROCm to add GPU-backed arrays to python. Compared the benchmarks against similar tools CuPy and OpenCV-cuda

Ant Simulation *Personal Project* | https://nebsite.website/modules/ant-sim/index.html

Skills Algorithms, Rust, Game Dev, Simulation, Research

Description Simulating date retreival in peer-to-peer (P2P) networks with a system inspired by ants

- Conducted research on P2P networks inspired by ant pheromone systems and developed a visual simulation of the algorithm.
- Developed a toolkit for benchmarking the program after each improvement to measure and verify progress
- Created a comprehensive report documenting the research and design process, including a live demonstration of the program using WebAssembly.

Wave Function Collapse *Personal Project* | https://wfc-tau.vercel.app

Skills Algorithms, Prototyping, Haskell, Rust

Description Implementation of Wave Function Collapse, the constraint based bitmap generation algorithm created by Maxim Gumin.

- Implemented algorithm in Haskell, as well as Rust.
- Extended the original algorithm to process wang tiles.
- Compiled the Rust implementation to WASM and built a web viewer for the project using SolidJS

Camp Towering Pines For Boys *Camp Counselor* | Summers of 2021, 2022, and 2023

Skills Leadership, Responsibility, Accountability

Description Six week overnight camp in Northern Wisconsin. I was personably responsible for a cabin of 10-15 boys aged 14-16 each summer.

Smaller Projects

Skills Solving Problems, Exploring/Experimenting

Description I love working and playing with computers and look for excuses to do both

- Created Goclone, a cli tool that uses rclone for backing up files to Dropbox to save battery.
- Developed a resume generation system using TOML, LaTeX, and Jinja2 to separate formatting and content, allowing for quick iteration, fine-grained control, and versioning.
- Enjoyed college course on Systems Programming, where projects were built from scratch in C, including a word frequency counter using a trie, Huffman encoding/decoding and simplified versions of GNU Tar, Talk, and Uniq.

Education

California State Polytechnic University

Pursuing Bachelor of Science Degree in Computer Science - Sept 2021 to present

Notable Completed Courses Data Structures, Computer Architecture, Systems Programming, Algorithms, Proj-Based Obj-Oriented Programming and Design, Programming Languages, Theory of Computation

Current Courses Intro to Computer Security, Knowledge Discovery from Data, Graph Theory, Intro to Hardware Security