

Brody Little

brodylittle011@gmail.com ❖ (269)910-9883 ❖ Hancock, MI ❖ github.com/bord-o

SKILLS & INTERESTS

Languages (Frameworks): Python (Flask, Django, NumPy/Pandas), Rust, C, Java, MATLAB, OCaml, Javascript (React, Node), HTML/CSS (Bootstrap), SQL, Bash

Software: VSCode, MS Office, Active Directory, Autodesk Inventor, ANSYS, COMSOL, Git

Operations: Hardware, Linux/BSD Administration, Networking, Virtualization (KVM, ESXI), Docker, Unikernels

Interests: Functional Programming, Simulation, Self-Hosting, Mathematics, Machine Learning

PROJECTS [public at <https://www.github.com/bord-o>]

LED Headlamp Digital Irradiance Testing & Design Tool: Digital design tool built for Covestro Materials to simulate the thermal performance of LED headlamps exposed to sunlight magnified through a headlamp's LED lens. This tool can predict the surface temperature of the heat sink based on the angle of the sun using ray tracing and heat transfer simulation. **(COMSOL Multiphysics, ANSYS Workbench, Autodesk Inventor, MATLAB)**

Chip8 Emulator: An implementation of the Chip8 virtual machine with graphics in OCaml. Aiming to minimize external dependencies, with a focus on functional code. **(OCaml)**

LittleBox: A Flask file sharing web application, implementing basic file sharing functionality similar to Imgur.com, with automatic cleanup of old files. **(Python Flask, PostgreSQL, Docker, Oracle)**

Chess Game PGN Compression: The design and implementation of an algorithm and encoding for compressing/decompressing PGN chess game databases, built to rival both the speed and compression ratio of the current compression scheme used by the popular chess website Lichess.com. Currently, achieving 89% space savings with a novel binary encoding. **(Rust, Python)**

Chess: A chess program implementing legal move generation, using only C's standard library. **(C, GNU Make)**

Finance: A web app implementing an interactive virtual portfolio supporting buying and selling stock using the IEXcloud financial API. **(Python Flask, SQLite, HTML/CSS)**

Muser: A CLI program integrating the Spotify API with the GNOD Music Map website to provide music recommendations based on artists or tracks and download recommendations with YouTube. **(Python)**

WORK EXPERIENCE

Mindhome

Sept 2022 – Jan 2023

Full Stack Developer Intern

Remote

- Smart Home startup using AI to create a service home concept
- Spearheaded the migration of the entire ecommerce platform from shopify to Medusa.js
- Organized and consolidated R&D codebases and forks using GitHub
- Learned and implemented headless ecommerce architecture using Medusa.js, Next.js, and Typescript
- Used Kanban boards to adhere to Agile development practices

Nulle Technology Solutions LLC

June 2021 – May 2022

Co-Owner, Technical Lead

Hancock, MI

- Personal/Corporate computer hardware repair, troubleshooting, and subcontracted IT
- Learned server administration, storage redundancy technology, and digital forensics/data recovery
- Installed and configured both network and customer facing hardware for small businesses including network setup, active directory, and Office 365

Serra Toyota

May 2018 – Sept 2018

Technician

Traverse City, MI

- Vehicle maintenance, hardware repairs, and troubleshooting
- Learned about modern ECU CAN bus technology and ECU diagnostics
- Carried out maintenance and basic repairs under high stress with rigorous time constraints

EDUCATION

Michigan Technological University

Sept 2018 – Dec 2022

B.S. Mechanical Engineering

Houghton, MI

- Networking/Computing Club, Chess Club

OpenCourseware

Dec 2020 – Present

Computer Science

Online

- Harvard CS50, Stanford Data Structures and Algorithms

Kalamazoo Valley Community College

Sept 2016 – May 2018

Mathematics

Kalamazoo, MI

- High School dual-enrollment