JAYDON HODGE

jaydonhodge@gmail.com | 443-477-8003 | GitHub.com/JaydonHodge

EDUCATION

Bachelor of Science in Computer Science & Minor in Classic and Ancient Mediterranean Studies
PENNSYLVANIA STATE UNIVERSITY - UNIVERSITY PARK, PA | GPA: 3.26 | Expected Graduation: Dec 2025

Honors : Dean's List

Relatevant Coursework:

Data Structures and Algorithms, Systems Debugging, Design and Implementation of Computer Operating Systems, Systems Programming (C), Computer Vision, Database Management Systems, Linear Programming, Game Theory, Computer Architecture and Design, Numerical Analysis, Three-Dimensional Analytic Geometry-Calculus and Vector Analysis, Object Orientation

SKILLS

Proficient Skills:

- Python, C, JavaScript, HTML/CSS
- React, Vite
- Linux(Ubuntu), BASH, Git
- Windows Subsystem for Linux
- VS Code, IntelliJ, Matlab, Mathematica, Neovim
- Agile Work, Data Preprocessing, Research Experiments

Previous Experience:

- C#, C++, TypeScript, JSON, Verilog, Assembly, SQL
- Virtual Machines, AWS, Docker
- Node.JS
- CI/CD Pipline
- Arduino

EXPERIENCE

UNDERGRADUATE RESEARCH ASSISTANT INTERN
The Human In Computing and Cognition Lab @ PENN STATE | June 2024--Present

- Lead research trials for ongoing project for National Science Foundation where participants would interact and choose whether or not to cooperate with an AI agent of my team's design.
- Coded and deployed Python scripts used for data scraping and analysis of data from research trials.
- Modified and extended the the JavaScript code used for the front-end user interface that participants of experiment interacted with.
- Conducted data analysis of the various different measurements from participants such as eye-tracking data and response time data.
- Derived and expanded Microsoft's open-source Project Malmo for the backend for AI-Human Interaction.

PROJECTS

- Designed and simulated a replicate MALLOC function, which through experimentation & prototyping was able to execute different MALLOC design philosophies such as implicit lists, explicit lists, segregated lists, splitting and coalescing. From unit testing, the final average utilization achieved was 58.5% and the final average throughput was 29518 Kops/sec.
- Replicated a local, networked, and cached MDADM storage unit for read and write operations in C with a Linux framework.
- Wrote unit tests and extensions for GNU's GDB debugger using GDB command files, Python, and Cmocka.
- Designed and simulated from start to finish a Central Processing Unit in Verilog with an ALU, cache, and registers.
- Constructed an Algebraic Calculator using Python, providing users with a versatile tool for performing various algebraic calculations such as solving for unknown variables.
- Developed a personal portfolio webpage written in HTML, CSS, and vanilla JavaScript. Hosted on GitHub Pages.
- Designed, prototyped, and developed a 2D platfomer video game written in C# under the UNITY game engine framework.