

# JAYDON HODGE



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## 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

- **Relevant Coursework:** Data Structures and Algorithms, Systems Debugging, Operating Systems, Systems Programming, 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

### Masters of Science in Data Science

JOHNS HOPKINS UNIVERSITY | Start Date: Fall 2026 | Expected Graduation: Fall 2028

## SKILLS

### Proficient Skills:

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

### Previous Experience:

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

## WORK EXPERIENCE

### UNDERGRADUATE RESEARCH ASSISTANT

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 preprocessing 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 platformer video game written in C# under the UNITY game engine framework.