

Joshua Liu

630-864-0029 | joshualiu21@gmail.com | <https://www.linkedin.com/in/joshua-liu-10572a210/> | github.com/jowsh60

EDUCATION

University of Wisconsin-Madison

B.S. in Computer Science and Data Science · 3.67/4.00 GPA

Madison, WI

May 2026

EXPERIENCE

Student Researcher

UW BADGER Lab

June 2025 – Present

Madison, WI

- Translated control software for a 2-DOF robotic ankle (plantar flexion & eversion) from Python to C++, improving execution speed and maintainability for real-time experiments
- Migrated system architecture from ROS 1 to ROS 2, improving modularity, speed, and maintainability of sensor and motor control nodes
- Integrated C++ motor control logic with ROS 2 nodes for hardware testing, ensuring reliable communication and precise actuation of dual-motor ankle mechanism in a lab environment.

Avionics Director at Wisconsin Space Program

University of Wisconsin - Madison

September 2023 – June 2025

Madison, WI

- Managed Avionics department among 3 separate rocket projects to delegate work including airbrake design, flight software, and engine control
- Implemented C++ code on an Adafruit ESP32 Feather to control a rocket's airbrake deployment using sensor data from the flight computer to ensure that it precisely reaches 10,000 feet
- Communicate with onboard instruments to retrieve flight data for logging and radio telemetry with ground station

Full Stack Developer Intern

RT New Ventures

May 2024 – August 2024

Chicago, IL

- Created user interface for browser-based GPT-powered synchronous interview app using ReactJS and TailwindCSS
- Organized and implemented backend endpoints that provided recruiter and candidate information management

PROJECTS

GigaFit Fitness Lifestyle Tracker | *ReactJS, ExpressJS, Node.js, PostgreSQL*

May 2024 – Present

- Implemented a RESTful ExpressJS API used to communicate with the frontend interface and PostgreSQL database, and nutrition APIs
- Engineered a Model Context Protocol (MCP) server to facilitate user-AI agent interactions, connecting multiple API endpoints for dynamic data retrieval
- Added features including diet and lifestyle tracking and numerous customizable graphs to emphasize and visualize long-term growth

Radio Controlled Model Airplane

February 2023 – August 2023

- Modeled and fabricated a V-Tail airplane model from scratch using foam-core board and other electronic components to communicate with control surfaces and radio transmitter
- Conducted multiple test flights with different airfoils, and identifying areas for optimization regarding maneuverability, weight reduction, and range

AWFLE Word Game | *HTML/CSS, Javascript, PHP*

January 2022 – October 2022

- Developed challenging variation of Wordle game and designed new interactive interface to fit rule changes
- Designed multiple iterations of code to accommodate upgraded server technologies to improve performance and user experience.
- Gained over 1000+ players utilizing SEO techniques such as keyword optimization and fast UX

TECHNICAL SKILLS

Relevant Coursework: Intro to Operating Systems (C), Intro to Algorithms, Computer Graphics (JS), Elementary Matrix and Linear Algebra, Programming III (Java), Machine Organization and Programming (C, IA-32 Asm.), Data Science Programming II (Python), Data Science Modeling II (R), Intro. to Discrete Mathematics, Probability and Mathematical Statistics I

Languages: Java, Python, Javascript(Node.js, React.js, Express.js), PHP, HTML/CSS, Mathematica