

# Isaac Wu

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## Experience

### Research Assistantship for Robotics Lab Development

Autonomous, Robotics, & Connectivity Lab (PI: Sep Makhsoos)

January 2026 – Present

Seattle, WA

- Will be developing an advanced robotics course with a focus on autonomous navigation and controls systems.

### Sample Analysis and Support Division Intern

Innovative Semiconductor Solutions

June – September 2025

Vancouver, WA

- Mastered and implemented advanced sample preparation methodologies for high-resolution microscopy analysis.
- Attained preparative microscopy skills operating Dual-Beam Electron Microscopes to prepare lamellas for imaging.
- Gained experience in the semiconductor industry, contributed to 14% reduction in processing times.

### Lead Software Engineer

Husky Robotics Team

September 2023 – Present

Seattle, WA

- Elected Lead of the Software Team on Husky Robotics, leading group of 15+ programmers.
- Worked in conjunction with 7 related subsystems to enhance custom-made Mars Rover to compete nationally (URC, CIRC).
- Responsible for developing C++ Rover codebase for use on Jetson Orin NX, web-based control interface made with **React**, and a virtual simulation using **Unity** for testing.
- Developing and implementing inverse kinematics, autonomous navigation, robust wireless communication, and hardware-accelerated image encoding for sophisticated control over our rover.

### Software Engineering Intern

Cartogram

June – August 2021

Bellevue, WA

- Hired to be a full-time software engineering intern for an indoor mapping company working to make traversing unfamiliar indoor locations easier by using Bluetooth beacons and software to create GPS-like interfaces that will guide users to internal locations.
- Worked on solving location drifting—when a user's location would become inaccurate over time; added smart movement checking (determining if user is standing still/walking/running), boosting accuracy by as much as 70%.

### Software Lead

Titan Robotics Club (Competes in FIRST challenges)

August 2021 – June 2023

Bellevue, WA

- Led groups of 10-14 programmers per year in perfecting our robot's capabilities, helped more than 15 new members become acclimated to the FIRST program, created brand new projects to control and interface with retired robots, documented algorithms and won awards for software development.
- Developed **Java** programming skills, learned separate team libraries, created subsystem diagnostic unit tests, notated routines, aided with extensive fine-tuning of controls systems.
- Communicated and led 4 other drive team members as team's Drive Team Coach (2021-2023): held practices 3 times a week for 2+ hours and held competition strategy meetings with over a hundred robotics teams.

## Projects

### brAInstorm

October 2024

- Developed full-stack web app that organizes users' thoughts in snippets of text or audio on a whiteboard and generates summaries of those thoughts, along with similar works for inspiration.
- Used OpenAI's **Whisper** trained on Intel's Tiber AI Cloud, leveraged Intel's AI PCs to tune and quantize our Multi-Modal LLM.
- Built backend on **FastAPI** with a RAG pipeline to push content to a **Perplexity** AI agent.
- Won** UW's DubHacks' Intel-Sponsored AI Track for building cutting-edge AI applications with Intel-optimized software.

### Personal Website

June 2024 – Present

- Built from scratch using **React**, **Vite**, and **TypeScript** to showcase projects and demonstrate web development skills.

### Webatro

June – September 2024

- Developed a full-fledged web-based video game from scratch using **React**, **Vite**, and **TypeScript**.
- Made extensive use of hooks and custom reducers to track game state

### SafeScroll Chrome Extension

October 2023

- Created an extension that automatically blurs sensitive and potentially triggering content, including text and images.
- Won** at UW's DubHacks Annual Hackathon out of **600+** contestants for creative concept/name.
- Used **HTML**, **Tailwind CSS**, **JS**, and **JSON** for the extension & website, trained a **ML model** with **Python**.

## Education

### Computer Engineering

Grad. June 2027

University of Washington

Seattle, WA

- Notable Coursework: Robotics and Control Systems, Data Structures and Parallelism, Operating Systems, Embedded Systems, Computer Networks, Signal Conditioning

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## **FIRST Robotics** (Jr. FLL, FLL, FTC, FRC) *September 2012 – June 2023*

- Actively participated in FIRST WA robotics since the 2nd grade. Became increasingly proficient with multiple departments of robotics (software, engineering, documentation, communication).
- Titan Robotics Club (High School team, participates in FIRST challenges) *August 2019 – June 2023 (750+ hours)*
  - ✓ Software Lead (2021–2023): Led groups of 10-14 programmers per year in perfecting our robot's capabilities, helped more than 15 new members become acclimated to the FIRST program, created brand new projects to control and interface with retired robots, documented algorithms and won awards for software.
  - ✓ Software Team (2019–2023): Developed **Java** programming skills, learned a separate team library, created subsystem diagnostic **unit tests**, notated routines, aided with extensive fine-tuning.
  - ✓ Drive Team Coach (2021–2023): Communicated and led 4 other drive team members, who operate the robot during competitions, held practices up to 3 times a week for 2+ hours and strategy meetings with over a hundred other teams.
- Appointed as team's Drive Team Coach (2021-2023),