

# Swara Seshadri

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## EDUCATION

### University of Washington, Seattle

Bachelor of Science in Computer Science, Minors in Political Science & Neural Engineering

Expected June 2027

GPA: 3.59

- Interdisciplinary Honors Program; Dean's List Recipient
- Relevant Coursework (Through Spring 2026): Linear Algebra; Calculus 1-3; Systems Programming (C++); Hardware/Software Interface (C, Linux, Vim); Data Structures & Parallelism; Embedded Systems; Machine Learning; Physical Computation, Probability & Statistics

## TECHNICAL SKILLS

**Languages/Frameworks:** C/C++, Java, Python, Assembly, JavaScript/TypeScript, React

**Tools:** MS Office (Word, Excel etc.), Version Control & Git, MATLAB, Arduino, Raspberry Pi, Vim, VS Code, Linux

**Misc. Skills:** Academic Writing, Signal Processing, Teamwork, Problem-solving, Communication, Organization

## RELEVANT EXPERIENCE

### Software Controls Engineer | Advanced Robotics UW

Oct. 2024 – Present

- Developing controls in C++ for robotic systems within a large-scale GitLab repository (**75,000+ lines of code**).
- Developed & tuned PID control loops for 6 DOF robotic differential wrist/arm, lift, and launcher subsystems to reducing overshoot & steady state error, improving placement accuracy in autonomous routines
- Implemented driver Heads-Up Display in C++ to visualize system telemetry in real time using UART communication and serialization.
- Collaborate with mechanical & electrical subteams to debug embedded systems & ensure reliable system operation.
- Placed **3rd** at the 2025 RoboMaster North America competition.

### Undergraduate Researcher | UW Ubicomp Lab

June 2025 – Present

- Enhancing household devices to improve accessibility for users with limited mobility.
- Built mesh processing pipeline using Trimesh in Python to automatically generate augmented CAD files.
- Implementing OpenCV and computational geometry algorithms to analyze object contours, textures, and shapes.
- Developed computational pipelines and embedded device augmentations with CAD & 3D printing to improve accessibility for users with limited mobility, integrating hardware and software solutions.

## PROJECTS

### Kairos | Python, EEG Signal Processing, Machine Learning, AWS

Sept. 2025 – Present

- Designing experimental procedures to analyze how variables such as attention and stimuli affect signal patterns.
- Collecting data to train & implement k-means clustering model to correlate between EEG data & focus states.
- Exploring AWS cloud storage solutions to securely store and process EEG data for scalable analysis.
- Developing a web app to visualize real-time attention metrics and biofeedback insights.

### BLIP | Python, HTML, CSS, TypeScript/React, Figma, OpenAI/Together.AI APIs

Aug. 2025 – Sept. 2025

- Contributed to BLIP, a system for identifying and visualizing unintended consequences of technology.
- Explored UI/UX prototypes in Figma and React, and modified Python scripts for backend data processing.
- Utilized OpenAI/Together.AI APIs to process & analyze data.

### Neurofeedback System | MATLAB, EEG Signal Processing

Sept. 2022 – Feb. 2023

- Developed neurofeedback prototype for Tourette's syndrome; published in the Journal of Student Research.

## ADDITIONAL EXPERIENCE

### Editor | UW Grey Matters Journal

Sept. 2025 – Present

- Revising neuroscience articles ensuring accessibility of complex scientific topics to general audiences.
- Currently working on an article regarding how neural visual processing can be applied to perception models in autonomous vehicles

### Undergraduate Researcher | UW Tech Policy Lab

Mar. 2025 – Present

- Authoring paper on behavioral economics in tech regulation; coordinated lab events with **100+** attendees.