

Rudra Gaikwad

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Education

University of Washington, Seattle, WA

Sep. 2024 – Jun. 2028

Bachelor of Science, Electrical and Computer Engineering

Relevant Coursework:

- AMATH 301
 - Applied programming and mathematics for data analysis techniques.
- EE 215, EE 201, EE 241
 - Core concepts including circuit analysis, CAD and PCB design, and basic signal processing techniques.
- Student Seaglider Center
 - Involved in a project centered around hardware and software integration of advanced sensors on autonomous seagliders, enabling enhanced sampling logic and control.

Work Experience

University Of Washington

Nov. 2024 - Present

GOBGC/SOCCOM/ARGO Float Lab Research Engineer

- Redesigned an Arduino-based battery calibration system
 - Engineered hardware modifications and modified python instrumentation scripts to integrate float propulsion (engine) current measurement.
 - Restructured sampling ranges to improve efficiency while maintaining accuracy of power consumption measurements.
 - Led the transition to an STM32-based embedded system with custom-designed PCBs for improved integration.
- Developed a Python-based communication and sampling system to interface with multiple autonomous floats simultaneously
 - Automated collection and analysis of salinity, pH, and dissolved oxygen sensor data.
 - Custom hardware rig and workflow that reduced required monitoring time and improved lab efficiency.
- Fabricated custom 3D-printed components for mounting equipment on floats.
- Designed 3D models and technical drawings to support lab workflows.
- Performed diagnostic testing and quality checks on ARGO float sensors, including pressure sensors and salinity cells.
- Conducted pre-deployment inspections and troubleshooting of float components to ensure operational reliability.

Bellevue School District

Jun. 2023 – Jul. 2023

Rocketry Summer Camp Instructor

- Co-led a rocketry summer camp for middle school students.
- Taught aerospace engineering concepts through hands-on, project-based instruction.
- Guided students in rocket design, construction, and launch activities.

Skills

- CAD, CAM/CNC Machining: Extensive experience with Solidworks, CNC routers, 3D printers, and various shop tools.
- STM32/Arduino: Interfacing and serial communication for data acquisition and control applications.
- Python, Java, C: Sensor communication scripts, data processing, and embedded systems control.
- Data Analysis: Analysis techniques including curve fitting and regression to interpret experimental and sensor data.
- PCB design: Schematic capture, component selection, and routing for embedded and sensor-based systems.
- Forklift Certification: Forklift certified for class 1,4, & 5 forklifts.