Jacob Henry Haarberg

360-601-5422 | Jacob.Haarberg@outlook.com | linkedin.com/in/jacobhaarberg | jacobhaarberg.dev

Seeking Summer 2027 Electrical Engineering internship

Education

Washington State University Vancouver — Expected May 2028
B.S. Electrical Engineering (Junior Standing)

Clark College — August 2023 – June 2026
A.S. Electrical Engineering With Honors — *Cumulative GPA: 3.6/4.0*

- **Full-Time College (2024–2026):** Vice President's List (All Quarters)
- **Running Start (2023–2024):** AA Transfer Coursework (45+ credits completed in High School)

Projects

50W Tube Amplifier & High-Voltage Power supply | *Spice, Analog, Power* — June 2025 – February 2026
Images available at: jacobhaarberg.dev/tubeamp/

- Simulated and evaluated DC operating points, AC response, and transient behavior in LTspice to analyze circuit performance before hardware construction.
- Designed and built a multi-rail linear power supply providing six output rails, including 270–420 V DC and adjustable 20 to 50 V DC bias, using filtering and voltage-doubling circuits.
- Integrated high-voltage power and analog amplifier stages, selecting components and refining circuit layout, transformer orientation, and grounding to mitigate electrical noise.
- Applied high-voltage safety practices and performed hardware validation to assess circuit operation and verify the completed design.

Arduino-Based Occupancy Counter | *Embedded C++, Sensor Integration, Display* — March 2025 – April 2025

- Programmed an Arduino in C++ using a multistage state machine to process ultrasonic sensor data for real-time bidirectional room occupancy tracking.
- Designed and 3D printed a custom 2-digit RGB 7-segment display with driver code to render digits and trigger color-coded maximum occupancy alerts.

Work Experience

Aquatics Staff Supervisor | *City of Vancouver, Vancouver, WA* — Dec 2025 – Present
Lifeguard and Swim Instructor — *Dec 2024 – Dec 2025*

- Supervises a team of 3–5 staff members, manages swim lesson execution, and ensures safety compliance via titration pool water chemistry analysis.
- Authors structured, detail-oriented operational incident reports and daily logs.

Relevant Coursework

In Progress (Fall 2026): Electronic Devices and Applications (ECE 325); Principles of Solid State Devices (ECE 349); Probability & Statistics for Engineers (STAT 360); Professional and Technical Writing (ENGL 402).

Completed: Electrical Circuits; Electrical Circuits & Signals; Signals & Systems; Digital Logic Design; Computer Organization & Architecture; Calculus I–IV; Linear Algebra; Differential Equations; Engineering Physics I–III.

Technical Skills

Test Equipment: Oscilloscope, Digital Multimeter, Function Generator, LCR Meter, VNA
Software: LTspice, MATLAB, Octave, Microsoft Suite
Programming: C, C++, PIC18 Assembly, Arduino, PIC
Hardware: Through-Hole and SMD Soldering, Circuit Assembly and Testing
License: FCC Amateur Radio General Class (KM7FWX)