

Joshua ("Yo-soo-uh") Hall

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EDUCATION

University of Washington, College of Engineering

Bachelor of Science in Electrical & Computer Engineering

Dean's List, DTC (Direct-to-college) admission to College of Engineering

Seattle, WA

Expected June 2027

PROFESSIONAL EXPERIENCE

Panasonic Avionics Corporation

Electrical Aircraft Integration Engineering Intern

Bothell, WA

June 2026 - September 2026

- Incoming Summer 2026

Washington Aerial Robotics

Avionics Sub-team

Seattle, WA

April 2025 - Present

- Leading full redesign of an electronic speed control, utilizing STM32 hardware and STM developer boards
- Responsible for drafting PCB schematics and constructing new part assemblies within KiCad for prototyping
- Currently involved in custom drone PCB design, integrating flight controller hardware and on-board processing
- Constructed new PCB's via soldering surface-mount devices and prototyping ESC hardware using perfboards

New Community

Audio/Visual Engineering Intern

Maple Valley, WA

June 2025 - September 2025

- Partnered with leadership to transform vision into actionable A/V requirements for a new facility
- Decommissioned legacy facilities, including teardown of electrical wiring, signal cabling, and A/V subsystems
- Performed hardware management of legacy facility including lifecycle assessments for e-cycle and resale
- Reconfigured analog and digital signal paths to reduce failure points and improve reliability
- Maintained campus-wide networking services for NAS devices and assisted employees with cloud operations
- Performed comprehensive A/V system performance validation to ensure worship center readiness
- Consolidated large-scale hardware storage, performing rigorous testing on all electrical equipment

PERSONAL PROJECTS

Autonomous Line-Following Robot

September 2025 - December 2025

- Led a team to build a fully-functional robotic car that follows a line on the ground using custom-built hardware
- Designed, printed, and soldered a custom PCB sensor to track color differences on a surface
- Installed and configured motors, SPID control, and PCB hardware to an Adafruit Motor Shield and Arduino
- Created and printed 3D-modeled hardware additions using PrusaSlicer and Autodesk Fusion 360

ADS-B Antenna & Tracking System

March 2025 - Present

- Designed, built, and sustained a personal ADS-B tracking system for commercial & military aircraft
- Constructed a quarter-wavelength antenna to pick up the 1090MHz frequency from which aircraft emit
- Harnessed Raspberry Pi hardware and software, using the terminal to decode ADS-B signals
- Verified ADS-B system ability to track and display up to 50 simultaneous aircraft over 150 nautical miles away
- Tuned specific antenna placement to maximize distant signals and ensure exceptional data quality
- Configured system to send tracking data to Flightradar24, enhancing their tracking coverage

Yagi-Uda Directional Antennas

April 2026 - Present

- Constructing 2 antennas capable of broadcasting a local 2.4GHz WiFi band to a fixed location over 100ft
- Designed and optimized antenna director spacing, sizing, and count via 4nec2 to optimize gain
- Utilizing ESP32 and Arduino IDE to transmit WiFi origin and broadcast extended network at new locations
- Drafting antenna mounting system to fix antennas to create a reliable, directional WiFi hotspot

ADDITIONAL INFORMATION

Interests: Aircraft Technology, Computer Architecture, Sound Design, Hardware Design

Relevant Coursework: Calculus I-II-III-IV, Linear Algebra, Java I-II-III, Computer Hardware Skills, AC Circuit Theory, Differential Equations, Python for Signal Processing, Semiconductor Design, Digital Logic Design

Software Skills: MATLAB (Novice), Excel, Word, KiCad, Fusion 360, VSCode (Java, Python), LTSpice, 4nec2

Hardware Skills: Raspberry Pi, PCB Design, Arduino, Oscilloscopes, Waveform Generators, Antenna Construction