Gavin Ford

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EDUCATION

Worcester Polytechnic Institute Worcester, MA

BS - Electrical and Computer Engineering - GPA: 3.92 AUG 2024 - MAY 2026

- Relevant coursework: RF Circuits, Embedded, Microelectronics, Calculus of Variations.

Portland Community College Portland, OR

AS - General Transfer Degree - GPA: 4.0 SEP 2020 - JUN 2024

- Gateway to College Scholar, 2020-2023.
- Member of Phi Theta Kappa Honor Society.

PROJECTS

Correlative Interferometry Radio Direction Finding (Phased Array) NOV 2024

- Designed and built a CI radio direction finding system to track a rocket up to 40,000 ft. It compares the phases on five antennas using the AD8302 chip to find incident wave direction.
- Impedance controlled PCB with LNAs, filters, power splitter, phase detectors, ADCs, and an IMU.
- Used manual calculations and Advanced Design System (ADS) to design and simulate custom LNAs and 5th order bandpass filter.

Translational Drift Combat Robot (Melty Brain) *JAN 2024*

- Designed, built, and programmed a competitive 150g combat robot that maximizes its moment of inertia by spinning the entire robot at 2900 RPM.
- Designed control PCB with IR beacon, accelerometer, and ESP32.
- Implement a Kalmen filter on a rotating reference frame.
- Achieved consistent orientation tracking and fast translation while spinning at 2900 RPM.
- Won second place at three competitions.

E-Paper Smartwatch *JUN 2022*

- Created a functional watch that displays time and information from a connected smartphone.
- Created custom schematic and PCB layout.
- Used technologies including I2C, SPI, UART, Bluetooth, and USB.
- Developed an Android companion app to update time and weather data on the watch.
- Designed and 3D printed the watch frame.

EXPERIENCE

WPI ECE Department — *TA for RF Circuit Design Class* *AUG 2025 - CURRENT*

- Tutored a class of 28 students on impedance matching, transmission line theory, and RF BJT/FETs.
- Held office hours to answer questions, clarify material content, and provide feedback.

WPI Wireless Association — *Repeater Control Operator* *FEB 2025 - CURRENT*

- Manage the W1WPI and W1YK amateur radio repeater systems.
- Set up computer networking for echolink nodes and repeater linking.

WPI Surface Metrology Lab — *Researcher* *SEP 2024 - MAY 2025*

- Tested fluid flow in machined channels with various machining parameters, and document findings.
- Programmed multiscale curvature analysis software using C++ to analyse 3D surface data.

Repair PDX — *Small Appliance Repair Technician* *JUL 2018 - AUG 2024*

- Experience troubleshooting and repairing FM radios, toasters, blenders, and fans.
- Worked efficiently with others to identify, debug, and repair broken devices.

Department of Conservation, New Zealand — *Researcher* *JAN 2025 - MAY 2025*

- Worked with a team to perform in-depth research, collect surveys, and interview experts.
- Developed a comprehensive action plan for DOC to educate the public about interacting with wildlife.

SKILLS

- Equipment used: VNAs, SDRs, oscilloscopes, network analysers, multimeters, 3D printers, CNC routers.
- CAD and simulations in Eagle, KiCAD, Ansys, Matlab, ADS, LT Spice, Desmos, Fusion 360 and OnShape.
- Micro soldering, troubleshooting, leadership, tutoring, data analysis, and documentation.
- Programming in Java, Python, C, C++, Matlab, Zig, Nix, and Bash.
- Experience with Linux, Excel, Word, PowerPoint, LaTeX, and Git.
- Amateur Extra ham radio licensed.