

Gavin Ford

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PROJECTS

E-Paper Smartwatch

JUNE 2022

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

Melty Brain Combat Robot

JANUARY 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 Kalman filter on a rotating reference frame
- Achieved consistent orientation tracking and fast translation while spinning at 2900 RPM
- Won second place at three competitions

EXPERIENCE

Repair PDX — Volunteer

JULY 2018 - PRESENT

- Experience troubleshooting, and repairing many small electronic appliances
- Worked efficiently with other fixers to repair complex issues

De La Salle Robotics Team — Coach

OCTOBER 2022 - FEBRUARY 2024

- Taught skills in programming, robot design and problem solving to a diverse student base

Benson Robotics Club — Team Captain

SEPTEMBER 2019 - JULY 2023

- Won first place awards in design and programming
- Challenged teammates to improve by encouraging first principles and innovative designs
- Designed functional mechanisms using Fusion 360 and Onshape
- Manufactured parts using 3D printer, CNC router, and lathe
- Trained a neural network to recognize objects in an image
- Programmed advanced sensor algorithms for the robot to navigate automatically
- Documented all work in an engineering notebook

EDUCATION

WPI

Worcester, MA

AUGUST 2024 - CURRENT

- Bachelor of Science
- Electrical Computer Engineering Major
- Graduating 2026

PCC Associates of Science

Portland, OR

SEPTEMBER 2020 - MARCH 2023

- GPA: 4.0
- Received HS diploma and Associates of Science with highest honors
- Gateway to College Scholar, 2020-2023
- Member of Phi Theta Kappa Honor Society

SKILLS

- PCB design using Eagle and KiCAD
- Troubleshooting electronic devices
- Programming in Java and C++
- Six years of CAD experience with Fusion 360 and Onshape
- Experience using 3D printers, CNC routers, soldering irons, Multimeters, oscilloscopes, and Network Analysers.
- Several years experience with Linux operating systems
- Mathematical modeling in Desmos

LANGUAGES

- Studying ASL
- Toki Pona