Colin Fisher

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EDUCATION

STEVENS INSTITUTE OF TECHNOLOGY Hoboken, NJ

Bachelor of Engineering in Computer Engineering | *Minor in Quantitative Finance* Expected May 2029

GPA: 3.69/4.00 | **Honors:** Dean's List Fall 2025 & Spring 2026

Athletics: NCAA Division III Cross Country and Track & Field

Coursework: Intro to Programming (C++), Field Sustainable Systems & Sensors; in progress: Circuits & Systems, Data Structures & Algorithms

RELEVANT EXPERIENCE

Maintenance Support Specialist (Seasonal) Florham Park, NJ

Cheshire Home Jul 2026 – Aug 2026; returning Dec 2026

- Diagnosed and repaired 40+ faults on Quantum Rehab and Permobil power wheelchairs for 35 residents, including battery failures, blown fuses, broken wiring, R-net controllers, Q-Logic displays, and seat actuators.
- Partnered with the head of Occupational Therapy to design custom-fit joystick knobs and adapters for residents whose injuries generic OEM parts didn't accommodate; 15+ printed parts across 6 designs went into use in one month.
- Proposed the facility's 3D printer and trained OT staff to print and adapt designs on their own, at $0.38–$0.55 per part.
- Soldered and repaired wiring and electronics across the building, and ran RJ45 Ethernet for new Wi-Fi access points.

PROJECTS

Wheelchair CAN-Bus Joystick Emulation (Drivable Couch) Summers 2025 & 2026

Independent Project

- Converted a power wheelchair base into a drivable couch (6 mph, 15+ mile range on two 12 V batteries) by placing an ESP32 and a TJA1055 CAN transceiver inline between the joystick module and the drive controller.
- Reconfigured the R-net controller with the R-net PC Programmer to disable the seat actuators removed in the conversion, clearing the faults the chair raised when they went missing.
- Logged and decoded the joystick's CAN traffic over serial, then adapted open-source firmware to an unsupported wheelchair model so the ESP32 sends matching drive frames from a Bluetooth Xbox controller.
- Designed fail-safe operation: the couch stops if the controller disconnects or the ESP32 loses power, and the original joystick keeps working in line for manual override.

Autonomous Navigation Robot Jan 2026 – Apr 2026

Stevens Institute of Technology, team of 3

- Wrote the navigation code and wired the electronics: the robot tracked its position with LiDAR and an ArUco marker, turned toward its target coordinates, and used 3 ultrasonic sensors to avoid walls and obstacles.
- Completed the obstacle course on every graded run, finishing 1:40 under the time required for full credit.

Automatic Irrigation System Sep 2025 – Dec 2025

Stevens Institute of Technology, team project

- Wrote the ESP32 firmware and wired the hardware for a controller that waters plants automatically when soil gets too dry.
- Calibrated thresholds with dry and saturated soil and validated over 5 days of continuous logging; now in daily use at home.

Home Lab Server Cluster Aug 2026 – Present

Independent Project

- Built a Proxmox VE cluster from a repurposed laptop and 4 donated desktops, totaling 60 GB RAM and 6+ TB of storage.
- Run Home Assistant (RTSP camera, smart plugs) and Pi-hole/Unbound DNS in Linux containers, with Tailscale remote access.

ADDITIONAL EXPERIENCE

Dog Walker, Wag! Hoboken, NJ | Aug 2025 – Present

- Completed 45+ bookings with a 5-star rating across 43 client reviews.

SKILLS

Programming: C++ (Arduino, ESP32), Arduino IDE serial debugging, Linux (Proxmox), Git/GitHub

Embedded Systems & Hardware: ESP32 firmware, CAN bus (TJA1055), R-net PC Programmer, LiDAR/ultrasonic sensors, Bluetooth, soldering, multimeter

Design: SolidWorks, 3D printing (FDM)