

# Arjun Senthilvel

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## EDUCATION

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### University of Minnesota - Twin Cities

*B.S. Electrical Engineering (Expected May 2029)*

2025 — Present

- Cumulative GPA: 3.77 | Dean's List (Fall 2025)

### Coursework

- Graduate: General Algebra (MATH 8202, in progress)
- EE: Digital System Design (in progress), Signals, Circuits & Electronics; Intro to Computing Systems;
- Mathematics: Foundations (MATH 3283W); Codes, Fields, Curves

### Century College

*PSEO*

2023 — 2025

## SKILLS

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- **Programming Languages:** Python, C/C++, HTML/CSS, JavaScript, Java
- **Technologies:** Git, Docker, Linux/Unix, NumPy, SciPy, Altium, Arduino
- **Hardware:** Oscilloscopes, Multimeters, Function Generators

## PROJECTS

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### Line-following Robot PCB - 2026 Bright Manufacturing Challenge

2026

- Routed and placed copper pours for a 4-layer PCB in Altium.
- Designed trace routing to avoid sharp corners and keep paths short for manufacturability and trace density.
- Placed 9th in the first stage (out of 31 teams) and qualified for the Finals stage.

### Bluetooth-enabled Personal Contact Manager

2025

- Designed a Bluetooth-enabled personal contact manager, allowing users to transmit contact information wirelessly and view through an SPI-linked ST7789VW.
- Wrote C++ for a Particle Photon 2 to implement BLE communication, contact storage, encoding and retrieval, and display output; worked around BLE's client/server architecture for a peer-to-peer application.
- Primary programmer on a 5-person team; teammates handled enclosure fabrication, part design/selection, and integration.

### Homelab

2024 — Present

- Maintained a self-hosted physical Linux server to host 5+ services, administered over SSH.
- Deployed outward-facing services using Docker on Oracle Cloud virtual machine instances.
- Used a Tailscale mesh network to access services, and deployed Caddy for internal HTTPS access.
- Monitored host and container metrics using Beszel.

## ACTIVITIES

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### FIRST Robotics Competition

2021 — 2025

- Programmed a robot in Java to manipulate game pieces, navigate the field, and climb.
- Implemented control systems and used PID loops to keep motor and robot functionality within operational limits.
- Prototyped, designed, and fabricated various robotic components, such as launchers and scoops.

### Science Olympiad

2024 — 2025

- Led team as captain, helped organize events and competed in events such as Codebusters and Optics.
- Fabricated small robot that autonomously navigated through a course to reach a target.
- Designed laser-based testing rigs for an event requiring beam manipulation to hit a target.
- Programmed and troubleshooted the small robot and a saltwater detector, using C++.