

Samuel Anes

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EDUCATION

Carnegie Mellon University

Bachelor of Science in Electrical and Computer Engineering

Selected Coursework: Intro to Electrical and Computer Engineering, Calculus in Three Dimensions, Concepts of Math

Pittsburgh, PA

Graduating May 2030

Homeschool, Stanford Online High School (Graduated June 2026)

GPA: Weighted: 4.4 / Unweighted: 3.97

Selected Coursework: AP Physics C: Electricity & Magnetism, AP Physics C: Mechanics, Linear Algebra, Harvard CS50x

Sudbury, MA

SAT: 1530 ACT: 35

SKILLS

Programming Languages: Python, Java, C, C++, SQL, JavaScript, HTML, CSS, Svelte

Software & Tools: GitHub, Android Studio, OnShape, Arduino, Altium Designer, 3D Printers, CNC Machines

ENGINEERING EXPERIENCE

Carnegie Mellon Formula SAE Electric Team (September 2026-Present)

Driverless Controls Subteam Member

Pittsburgh, PA

September 2026-Present

- Developed a regenerative braking algorithm and validated it against real-world vehicle data using Python and Matplotlib, informing controls development for the FSAE Endurance event.

FIRST Tech Challenge Team #2845 (September 2022-April 2026)

Team Captain | FIRST Dean's List Semi-Finalist

Tampa, FL

September 2024-April 2026

- Rebuilt the team's Java software architecture into a modular command-based framework supporting sequential and parallel execution, enabling concurrent subsystem control during autonomous routines.
- Developed three-wheel + IMU odometry with periodic computer vision sensor fusion corrections and integrated the localization with a PID-based point-to-point robot navigation for autonomous field movement.
- Developed OpenCV computer-vision pipelines using HSV color segmentation, contour filtering, and geometric constraints to detect game elements and estimate their position relative to the robot.
- Developed a data-driven launcher velocity model by regressing target distance against measured AprilTag image area, automatically selecting launch velocity for autonomous scoring across varying distances.

Sabacc: Open Source Multiplayer Full-Stack Web Application

Project Founder and Leader

April 2024-Present

- Built and deployed a real-time multiplayer web application serving 1,000+ users, using Svelte, Flask, SQL, and WebSockets for reactive UI, backend game logic, persistence, and low-latency gameplay.
- Architected an object-oriented backend supporting multiple game variants through shared abstractions, and migrated between SQLite and PostgreSQL while maintaining persistent game data.

Embedded Projects

- Built an Arduino-based remote-control sailboat using XBee wireless communication, servo actuation, custom perfboard electronics, and 3D-printed mechanical components.
 - Designed a capacitive-touch Arduino speedcubing timer with sensor calibration and 3D-printed enclosure.
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EXTRACURRICULARS

Eagle Scout, Scouting America

January 2019-Present

Amateur Extra, FCC Licensed Amateur Radio Operator

May 2022-Present

Competitor, World Cube Association

January 2023-Present

Stanford Online High School Team Member, World Economics Cup

April 2025-July 2025

Black Belt, Aidan Murray Martial Arts

2019-Present