

# Casey Midgley

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## SKILLS

### ▪ **Robotics & Machine Control**

End-to-end design and deployment of complex robotics systems, including mechanical, electrical and software.

*7 years*

### ▪ **Solid Modeling & Manufacturing**

Extensive Solid Modeling, Simulation and CAM, in Fusion 360 and SolidWorks with experience in DFM fundamentals.

*6 years*

### ▪ **3D Printing**

Custom design, build and operation of high-performance FDM 3D printers.

*10+ years*

### ▪ **Software Engineering**

Design and implementation of software systems on embedded (C, C++, ESP32/STM32) and full stack / cloud systems.

*7 years (4 years embedded)*

## EXPERIENCE

### Intellisplash LLC

May 2025 – August 2025

- Implemented C++ controller for embedded STM32 I2C automation card for aquatic automation solution.
- Identified and resolved two serious hardware issues; solution tested and integrated into latest card revision.

## EDUCATION

### Worcester Polytechnic Institute

August 2022 – Current

- Robotics Engineering & Computer Science (Dual majors, Graduating December 2026)
- Secretary of Collab Lab (Former President and VP): Student run lab for creative exploration in technology
- Coursework includes Unified Robotics I-IV, Software Engineering, Object Oriented Programming, Algorithms, Electrical and Computer Engineering, and Embedded Computing.

## PROJECTS

### Designed, Built and Competed with Custom Design Combat Robot

- Modular approach enables repairs in 1/10<sup>th</sup> the time (under one minute to replace any component).
- Open sourced and adopted by prominent members of the combat robotics community.

### Custom High-Speed 3D-Printer

- Increased performance of stock Voron V0 by 8 times with custom gantry and hotend design
- Printing a “Benchy” reduced from 40 minutes to 7.5 minutes with high quality.

### Autonomous ROS based Robot

- Fully autonomous operation using Slam, frontier detection & exploration with fault recovery

### Formula Hybrid + Electric Autonomous Conversion – Goat Fast Racing

- Transitioning existing student-built competitive racing EV from manual to fully autonomous operation.
- Leading development of driverless architecture for sim & real-life perception and controls pipelines.
- Implementing custom redundant perception pipeline (Stereo Vision, Lidar, GPS, IMU, GNSS).
- Designing & programming STM32 watchdog board for critical safety infrastructure.

### Full Stack Serverless Application

- Managed 4-person team using stack including AWS Lambda, AWS RDS, AWS S3; React, Next.js.