Donovan Crowley

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Education

Case Western Reserve University **Cleveland, OH**
- B.S.E in Electrical Engineering & B.S. in Computer Science - GPA: 4.0 Aug. 2024 - May 2028
- Relevant Coursework: Data Structures, Circuits, Logic Design, Discrete Math, Algorithms, Operating Systems
- Qualified as a top 50 programmer in the 2025 CWRU RFB Programming Competition April 2025

Avon Old Farms, Avon, CT - GPA: 4.2/4.3 (Valedictorian) Sept. 2020 - May 2024
- Colatella Family Scholarship
- Harvard Book Award
- AP Scholar with Distinction

Professional Experience

Titan Pool Services Inc., Head Lifeguard with Pool Operating License 2021 - 2024
- Built a Remotely Operated Vehicle (ROV) to clean pools, improving efficiency and reducing service downtime
- Supervised a team of 6 lifeguards, ensuring safety and enhancing customer satisfaction for 150+ daily patrons
- Repaired integral pool equipment such as pipes, variable speed (VS) pumps, and chlorinators by identifying faults, performing priming procedures, and restoring functionality to minimize customer disturbances

Projects

Vertical Take-Off And Landing
- Programmed and implemented a sophisticated computer vision system in a drone using an ESP32 camera with a Hough Circle Transform detection algorithm for object detection and precise targeting that sends data to a ground station via a WiFi connection
- Designed and integrated a servo-controlled payload-dropping mechanism controlled by the ESP32, optimizing the drone's ability to deploy a certain number of water bottles on a specific target
- Placed first at the 2025 VFS Design-Build-Vertical-Flight Competition
- *Utilized*: C++, Python, ESP32, MATLAB

Electric Vehicle + Data Monitor
- Improved the vehicle's performance by redesigning and optimizing the circuit to improve reliability and functionality
- Incorporated a speedometer and multimeter to display the speed of the car and the voltage remaining in the batteries, improving race performance
- Supported crucial repairs and tooling implementation by developing detailed CAD models, circuit systems, and engineering drawings
- Contributed to the team's success, securing a third-place finish at the Lime Rock Park Electrathon Competition through meticulous driving and problem-solving
- *Utilized:* Multimeter, Autodesk Fusion 360

Remotely Operated Vehicle
- Conceptualized, 3D modeled, and fabricated a fully custom robot equipped with an intricate circuit and filter system to execute critical tasks at a pool
- *Utilized*: Python, Arduino, SolidWorks, Raspberry Pi

Harvard Rocket Propulsion Group (HRPG) Liquid Oxygen (LOX) Engine
- Collaborated with HRPG to static test a high-performance LOX and ethanol rocket engine by constructing a stable base and assembling the electronic system
- Designed and wired a monitor system to track the thrust, pressure, and temperature of the engine, ensuring safe and reliable testing
- *Utilized:* Arduino, Autodesk Fusion 360

Skills

Programming Languages: Python, C++, Java, Node.js, HTML, CSS, JavaScript, MATLAB, Arduino
Software: Autodesk Fusion 360, Origin, SolidWorks