JOHN MCAVOY

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EDUCATION

Bachelor of Science, Electrical and Computer Engineering September 2015 - May 2020
Rowan University, Glassboro, NJ, GPA: 3.658/4.000, Cum Laude, Rowan Scholars Program

TECHNICAL SKILLS

Bash | C | C++ | C# | Docker | Elm | Java | JavaScript | MATLAB | Node.js | PHP | Python | Rust | SQL | Swift | Verilog
Software Engineering, Linux Development, Full-stack Development, Embedded Systems, PCB Design, Product Engineering

TECHNICAL PROJECTS

Clean Room Environmental Chamber, *Product Development Engineering Senior Clinic* September 2019 - May 2020

- A novel environmental chamber for the Rowan ECE clean room for storing solder paste and FR1 boards.
- Consulted with a client to create a project scope, WBS, requirements and specifications, high-level and low-level design.
- Electrical design consists of two ATmega644PA MCUs, Peltier element, and solenoid-controlled pneumatic system.

A-Team Server, *A-Team, Server Administer / Full-Stack Developer* January 2018 - May 2020

- Linux server running a Rust back end, an Elm front end, and MySQL database in separate Docker containers.
- Hosts web applications for the Rowan Engineering department to track equipment loans, manage safety tests, and manage chemical inventories.

Micromouse, *Rowan RAS* September 2018 - May 2020

- Maze solving robot for IEEE Micromouse competition. Won first place at IEEE Region 2 Student Activity Conference 2019.
- Consisted of a custom PCB, STM32F405 microcontroller, time of flight lidar distance sensors, 3D printed chassis, and embedded programming done in Rust.

ProfHacks Website, *Rowan IEEE, Project Lead* September 2018 - May 2020

- Node.js-based website for Rowan IEEE's annual 24-hour Hackathon.

Autonomous Quadcopter, *Rowan RAS* September 2017 - December 2019

- Fully autonomous drone capable of navigating to waypoints, dropping a payload, and detecting targets with image recognition.
- Integrates a fight controller, SOC image processing, navigation sensors, a custom PCB, and a custom designed and manufactured aluminum frame. Capable of 1 hour of continuous flight.

Nanofiber Testing Apparatus, *Product Development Engineering Junior Clinic* January 2019 - May 2019

- A custom, heated tensile stretching apparatus for a client researching the strength of electrospun nanofibers.
- Consulted with a client to create a project scope, WBS, electrical design, and web-based user interface.

Augmented Reality Using Structured Light (ARSL), *ARSL Junior Clinic* September 2018 - December 2018

- A novel image processing method for creating an AR environment using projected light and a camera.
- Developed MATLAB, C++, and Android proof of concept applications using the ARSL method.

Lab Log Tool, *Harris Corporation, Project Lead* May 2018 - September 2018

- Developed a web application used by FAA employees to record lab logs, schedule lab times, and generate metrics.
- Back-end: Linux server running a Node.js web server, a Postfix mail server, and MySQL database.

WORK EXPERIENCE / INTERNSHIPS

ECE Consultant, Rowan Apprentice Engineering Team (A-Team) January 2018 - May 2020
Systems Engineering Intern, Innovative Defense Technologies (IDT) May 2019 - August 2019
Datacom Intern, Harris Cooperation May 2018 - September 2018
Chemical Engineering Lab Assistant, Rowan University February 2017 - September 2017
Data Entry and QA Intern, Siegfried USA, LLC June 2016 - September 2016
VR Development Intern, Virtual Reality Center, Rowan University May 2016 - August 2016

PROFESSIONAL SOCIETIES/AWARDS

Rowan University IEEE Student Branch (Rowan IEEE), Service Chair, Webmaster, Student Member of the Month
Robotics and Automation Society Student Branch (Rowan RAS), Vice President, Project Coordinator Chair
Engineers Without Borders Student Branch, Webmaster