

# Ryan McGee

# Robotics / Automation Engineer

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Searching for a full-time robotics / automation engineering position, starting May 2024.

In person / remote, willing to relocate if necessary .

## Education

### Rochester Institute of Technology (Senior)

2018-2024

Robotics and Manufacturing Engineering Technology | GPA 3.31

## Employment

### CACI - Software Engineer Intern - Dahlgren VA

May 2019 - Dec 2021

- Developed C++ programs for capturing, processing and retransmitting network data
- Created JavaFX UIs to display live data inside a PostgreSQL database
- Generated packages and created regex bash scripts for RedHat systems

### ITW Hartness - Controls Engineer Intern - Greenville, SC

May 2022 - Dec 2022

- Wrote PLC ladder logic and created HMI UIs on Allen Bradley systems for accumulation machines
- Developed algorithms to control accumulation of product on mass-flow conveyors using vision sensors
- Used AutoCAD Electrical to develop panel schematics for robotic palletizing systems
- Simulated line product flow with the Emulate3D physics engine

### ei3 Corporation - Automation Engineer Intern - Pearl River, NY

June 2023 - Current

- Created a test stand to demonstrate platform-agnostic data ingestion into cloud applications
- Provisioned OPC UA servers and connections
- Implemented the PackML standard on Allen Bradley, Beckhoff, B&R and MELSEC platforms
- Created an HMI for controlling four PLCs at once using Maple Systems, following the PackML HMI standard

## Skills

### Automation:

- Ladder Logic
- Structured Text
- B&R Automation Basic
- HMI Design
- ABB Robot Studio
- ABB SMART Certification

### CAD:

- Solidworks
- Autodesk Inventor
- KiCAD

### Programming:

- C++
- Python
- Java
- Bash
- Git
- Linux

### Frameworks:

- OpenCV
- JavaFX
- ESP-IDF
- ROS

## Projects

### 3D Printed Robots: [ryanmcgee.dev/portfolio](https://ryanmcgee.dev/portfolio)

- Custom differential, swerve and mecanum drivetrains, designed in Inventor and FreeCAD
- Controlled via Raspberry Pi, Pi Pico and esp32 microcontrollers
- Programmed in Java, C and C++ (ROS), communicating over WiFi and Bluetooth

### VEX Robotics CoreAPI [github.com/RIT-VEX-U/Core](https://github.com/RIT-VEX-U/Core)

- A custom open source C++ API for easily managing mobile robotic subsystems and utilities
- Supports feedback loops, logging, and state-machine control with a modular, object-oriented approach
- Abstracts drivetrain and manipulator subsystems for a fast-paced development environment

## Activities

### RIT VEXU Robotics Team, President and Software Lead

- A robotics team that creates two mobile robots for a game released each year, and competes against other universities
- Developing software for motion controls and asynchronous state management
- Managing the GitHub organization's 5+ active repositories with code reviews, pull requests and wiki maintenance