

Objective -

Searching for a full time Robotics / Automation Engineering position starting in May 2024 (In-Person/Remote/Hybrid). Willing to relocate if needed.

EDUCATION

Rochester Institute of Technology (Senior)

2018 - 2024

Bachelor of Science in Robotics and Manufacturing Engineering Technology | GPA 3.24

EMPLOYMENT

CACI - Software 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 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 on ei3 hardware
- Provisioned OPC UA servers and connections
- Implemented the PackML standard on Allen Bradley, Beckhoff and B&R platforms in Ladder Logic, Structured Text and Automation Basic
- Created an HMI for controlling the three PLCs using Maple Systems software, following the PackML HMI standard

PROJECTS

3D Printed Robots

ryanmcgee.dev/projects

- Custom swerve and mecanum holonomic drivetrains, designed in Autodesk Inventor and FreeCAD
- Controlled via Raspberry Pi and esp32 microcontroller on a PCB designed in KiCAD
- Programmed in Java, C and C++ (ROS), communicating over WiFi and Bluetooth

G2MIDI Hackathon Project

github.com/superrm11/G2MIDI

- Allows a musician to turn guitar notes into any digital instrument
- Analyzes an analog signal in the frequency domain, and translates this to digital MIDI notes
- Explores the creation of virtual MIDI devices in Linux and audio routing using the Jack C++ API

VEX Robotics Core API

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

SKILLS

PROGRAMMING: Java, C/C++, Bash, Git, Linux

FRAMEWORKS: OpenCV, JavaFX, ESP-IDF / FreeRTOS, ROS

CAD: Autodesk Inventor, Solidworks, KiCAD

HARDWARE: 3D Printing, Robotics, Mechanical design, PCB Design

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

ACTIVITIES

Computer Science House, Member

- RIT Special Interest House (SIH) program, centered around learning computer science

RIT VEXU Robotics Team, 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