

Objective - Searching for a software / robotics internship May - August 2023 (In-Person/Remote/Hybrid). Willing to relocate if needed.

EDUCATION

Rochester Institute of Technology (5th Year)

2018 - 2024

Bachelor of Science in Robotics and Manufacturing Engineering Technology

EMPLOYMENT

CACI - Software Intern - Dahlgren, VA

May 2019 - Dec. 2021

- Full stack development for US Navy ship upgrades: Developed a C++ network translation layer to manipulate and stream live data into a PostgreSQL server, and developed UIs with JavaFX to display it.
- Wrote a SystemV Bash program to verify BIOS integrity on secure RedHat Linux systems during startup, and packaged the program for internal distribution
- Used Regex scripts to improve documentation processes, by automatically editing Ada code to conform to internal standards

ITW Hartness - Controls Intern - Greenville, SC

May 2022 - Dec. 2022

- Wrote PLC ladder logic on Allen Bradley systems for large scale integration projects
- 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 product flow with Emulate3D software

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 and C, 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, Allen Bradley PLC, ABB RobotStudio, HMI Design

FRAMEWORKS: OpenCV, JavaFX, ESP-IDF / FreeRTOS

LINUX: Arch, Red Hat, Debian

CAD: Autodesk Inventor, Solidworks, KiCAD

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

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