RYAN MCGEE

SOFTWARE / ROBOTICS ENGINEER

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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 | GPA 3.11

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