

# Ben Anderson

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## LEADERSHIP EXPERIENCE

### Computer Science Capstone

Portland, OR

Capstone Project Lead

Jan 2023 – Jun 2023

- Developed a rear-wheel-drive torque vectoring system for a Formula SAE racecar with theoretical simulations resulting in a 1% to 8% yaw rate correction depending on steering angle.
- Lead a team of 7 students in creation of differing sub-products of the torque vectoring system using agile development with weekly scrum meetings.
- Created a simulation with pre-defined power ratio values for the STM32 microcontroller, resulting in a ~75% reduction in development time by enabling quick power ratio calculations based on user input rather than using on-board movement sensors in pursuit of a closed-loop system.

## WORK & PROJECT EXPERIENCE

### Viking Motorsports

Portland, OR

Team Member

Nov 2021 – Jun 2023

- Built a functional traction control system using STM32F446RE Microcontrollers.
  - Collaborated with electrical engineers to incorporate 200 pulse per revolution wheel encoders to calculate car velocity from frequency.
  - Cooperated with software engineers to transfer data using protocols such as I2C, USART, and CAN.
- Developed a Python simulation for the 2022 E274 electric Formula SAE car to incorporate PID traction control.
  - Used the Pacejka tire model in combination with mathematical constants and characteristics of the car to determine an ~8% optimal slip ratio for asphalt and concrete surface types.
- Diagnosed and resolved complex car complications leading up to the FSAE competition, enabling the team to achieve optimal performance and secure 29<sup>th</sup> place out of 58 participating teams.

### Clackamas Community College

Oregon City, OR

Information Technology Intern

Oct 2018 – Apr 2019

- Worked closely with a team of two colleagues to provide timely and efficient IT support across the college campus, addressing and resolving an average of ~10 technical queries weekly.
- Contributed to the ticket backlog to reduce pending tickets from ~200 to 7 during my time there.
- Monitored a range of phone services to coordinate services with colleagues.

## EDUCATION

### Portland State University

Portland, OR

Bachelor of Science – Computer Science

Sept 2020 – Aug 2023

- Involved in Formula SAE at Viking Motorsports (*see above*).
- Computer Science became an easy fit following my personal work in experimentation of electronics and software along with my involvement in philosophical ideas.

### Clackamas Community College

Oregon City, OR

Bachelor of Science Transfer – Computer Science Transfer

Sept 2018 – Jun 2020

- Began pursuing Mechanical Engineering while at Clackamas before transitioning into Computer Science to develop further my curiosity in a field I have always had passion for.

## SKILLS & INTERESTS

**Skills:** C++ | C | Java | Python | Rust | TypeScript | Git | Linux | CI/CD | Embedded Software | Scrum | Agile Methodologies | Unit Testing | Eclipse | Communication Protocols | HTML/CSS | JavaScript |

**Work Interests:** Embedded software development, back-end and front-end software.

**Personal Interests:** Tuning cars using embedded systems, weightlifting, photography, skiing, tennis, mountain biking.