

# Andrew Vernier

amverni@umich.edu

amverni.github.io

Ann Arbor, MI

## SUMMARY

Result driven software engineer experienced in developing user interfaces and object-oriented programming. Passionate about web development, autonomy, and robotics. Seeking an opportunity to apply these skills, learn from sophisticated technical challenges, and have fun developing cutting edge technology.

## EDUCATION

### University of Michigan

Master of Science in Engineering – Computer Science and Engineering

GPA: 4.00 / 4.00

Bachelor of Science in Engineering – Computer Science

*Minor in Multidisciplinary Design*

GPA: 3.94 / 4.00

Ann Arbor, MI

Jan. – Dec. 2020

Sep. 2016 – Dec. 2019

## EXPERIENCE

**Amazon.com, Inc.** | *Software Development Engineer Intern* | Seattle, WA

May – Jul. 2020

- Designed large scale audit tool to track historical data to allow users to easily query and visualize changes to the data (Java).
- Enabled continuous deployment of tool by leveraging industry leading DevOps practices.
- Applied AWS cloud computing technologies to handle high throughput traffic. The tool is currently handling over 500 transactions per second.

**Garmin International** | *Software Engineer Intern* | Olathe, KS

May – Aug. 2019

- Developed graphical representations of in-activity metrics for use on multiple smartwatch devices (C).
- Implemented privacy mode to hide GPS data from external use in order to comply with military regulations while still allowing all on-device features to remain intact for best user experience (C).

**Garmin International** | *Software Engineer Intern* | Novi, MI

Apr. – Aug. 2018

- Designed framework for automated GUI testing of automotive navigation application via simulating interactions between the application and the client's API (C++).

**University of Michigan** | *Graduate Student Instructor – Web Systems* | Ann Arbor, MI

Aug. 2020 – present

- Teaching students web development concepts and mechanisms for scaling such as AWS technologies.
- Coordinating logistics for exams and lab quizzes for new remote learning settings.

**Crowds and Machines Lab** | *Researcher* | Ann Arbor, MI

Jan. 2019 – May 2020

- Conceptualized metrics for measuring entanglement of conversations to prove effectiveness of machine learning to disentangle conversations in a new domain using minimal human effort (Python).
- Achieved 30% increase in accuracy of image annotation tool that recreates 3D scenes from 2D images for training autonomous vehicles by improving user interface to lessen cognitive load on users (JavaScript).
- Fabricated a test harness for guiding design of generalizable image annotation tools and testbeds and facilitating the verification of such tools; work was published and presented at UIST 2019.

**Michigan Mars Rover Team** | *Autonomous Navigation Member* | Ann Arbor, MI

Sep. 2017 - present

- Built simulator for autonomous navigation system and integration testing (Vue, TypeScript, HTML, CSS).
- Instituted state machine implementation for autonomous mode of the rover allowing program to grow in complexity as competition tasks became more challenging without reducing maintainability (C++).
- Coded path planning algorithms for autonomous search and obstacle avoidance tasks (C++).

## LEADERSHIP

**Michigan Mars Rover Team** | *Software Technical Advisor* | Ann Arbor, MI

Jun. 2019 – present

- Utilized GitHub workflow tools to enhance project management and aid migration to remote work.
- Taught general and team specific software topics via one-on-one mentoring and group presentations.

**Michigan Mars Rover Team** | *Autonomous Navigation Lead* | Ann Arbor, MI

Mar. 2018 – Jun. 2019

- Planned projects to meet team's design requirements and financial and temporal restrictions.
- Delegated work amongst 17 undergraduate students with varying programming experience.
- Directed team's competition strategy and made high pressure decisions during timed autonomy task.
- Led team to third place finish and best score in team history for autonomy task.