

# David F. Vella

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## EDUCATION

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### University of Michigan, Ann Arbor, MI

*Aug 2019 – Dec 2022*

Bachelor of Science in Engineering - BSE, Computer Science

*GPA: 3.97 / 4.00*

#### Relevant Coursework:

Data Structures and Algorithms, Computer Organization and Assembly Language, Autonomous Systems, Programming and Elementary Data Structures, Digital Logic Design, Electronic Circuits

## EXPERIENCE

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### All Covered IT Services, Farmington Hills, MI

*May 2020 – Aug 2020*

Deployment Team Member

- Worked on a team to install software on a variety of platforms including Windows 10, macOS, iOS
- Developed shell scripts that interact with inventory system APIs to automate workflows

### FIRST Robotics FRC Team #67, Milford, MI

*Jan 2015 – Apr 2019*

Electrical and Controls Lead

- Led students through the design and assembly critical electrical system components
- Hands on experience with PWM, CAN, Encoders, IMU's, and cameras for robotics applications

## PROJECTS

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### Linux System Monitor Application

*Aug 2020*

- Created an application for monitoring CPU temperature and fan speed on Linux machines using Qt
- Implemented algorithms in C++ for efficient real time plotting of sensor data

### Flight Controller for Radio Controlled Aircraft

*Apr 2020*

- Designed a complete embedded control system. Wrote software libraries to interface I2C/UART devices
- Developed and implemented control algorithms in C++ for autonomous cruise, takeoff, and landing

### Lightweight IMU Software Library

*Mar 2020*

- Developed a software library to compute orientation from raw gyroscope and accelerometer sensor data
- Implemented quaternion math operations in C++ to accurately track orientation in real time

### Snake Game Web Application

*Dec 2019*

- Implemented snake in a Flask web app with Python backend and JavaScript/HTML/CSS frontend
- Designed an API allowing the game client to post scores to a leaderboard for friendly competition

## SKILLS

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**Computer Languages:** C++, C, Python, MATLAB, Verilog, Javascript, HTML/CSS

**Technologies:** Git, Bash Shell, GCC, GDB, SSH

**Platforms:** Ubuntu Linux, Windows 10, ARM, Arduino

**IDEs:** Visual Studio, Visual Studio Code, MATLAB, Vim

## ACTIVITIES

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Michigan Ski Club

*Aug 2019 – Present*

Piano

*2006 – Present*