

David F. Vella

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EDUCATION

University of Michigan, Ann Arbor, MI

Aug 2019 – Dec 2022

Bachelor of Science in Engineering - BSE, Computer Science

GPA: 3.96 / 4.00

Relevant Coursework:

EECS 281 - Data Structures and Algorithms

- Algorithm analysis and O-notation; searching, sorting, recursive, and graph algorithms
- Fundamental data structures including; stacks, priority queues, hash tables, search trees, and graphs

ENGR 100 - Intro Autonomous Systems

- Worked on a team to design control algorithms enabling a quadcopter to autonomously navigate a maze
- Hands on experience with PID controllers, digital and analog filters, IMU's, ultrasonic and LiDAR sensors

EXPERIENCE

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

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

Radio Control Aircraft Flight Controller

Apr 2020

- Developed and implemented control algorithms in C++ for autonomous cruise, takeoff, and landing
- Wrote software libraries for digital signal processing, IMU computation, and I2C device communication

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 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

Languages: C, C++, Python, MATLAB, JavaScript, HTML/CSS

Technologies: Git, Bash, SSH, Flask, Jinja2, Nginx

Platforms: Windows 10, Linux, AVR

IDE: Visual Studio Code, Arduino, Vim

ACTIVITIES

Michigan Ski Club

Aug 2019 – Present

Piano

2006 – Present