David F. Vella

248-760-4439 · davella@umich.edu
7000 Willowing Oak Dr, White Lake, MI
https://www.davidvella.me

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 in 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 in 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 GPU Power Management Tool *Jun 2020*
- Developed software that forces GPU into low power state when not in use improving battery life on laptops with Nvidia graphics cards. Implemented in C and developed in a Linux environment

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*