

Michael Rawding

Robotic and Machine Learning Engineer

Secret Clearance

www.mikerawding.com

EDUCATION University of Delaware, *Bachelor's of Science in Computer Engineering - Computer Science & Cybersecurity Minors*

August 2016 - May 2020

GPA: 3.19

EXPERIENCE

SURVICE Engineering Company, Aberdeen, MD — Robotics Software Engineer

August 2020 - Present

Directly contracted to Army Research Laboratory(ARL) to develop state-of-the-art autonomy for Unmanned Aerial Systems (UAS). Lead of machine learning for the UAS autonomy team at Army Research Laboratory. Leadership responsibilities include leading many meetings if the primary government customer is not able to attend. Machine learning algorithms developed include object detection networks, pose detection, geolocalization, and regression neural networks for state estimation on resource constrained hardware. Responsible for managing several GitLab repositories with many active users and forks. Conducts problem solving of day-to-day challenges that arise from flight testing in the field by exercising a breadth of understanding in sensors, weather environments, networking, central processing unit (CPU) optimization, memory consumption, and Linux kernel parameters. Developed and implemented many camera drivers to publish imagery through ROS2 networks including unique image transports using H264, and H265 encoding for efficient compression and Real Time Streaming Protocol (RTSP) servers. Developed in Unity Game Engine for high-fidelity physics and graphical simulations. Perform data analytics on imagery and telemetry data collected in experiments.

Hologic, Inc., Newark, DE — Electrical Engineering Intern

June 2019 -August 2019

Responsible for programming and simulating VHDL Hardware Description Language (VHDL) that was implemented into Field Programmable Gate Arrays (FPGAs) for hardware control and Double Data Rate 3 (DDR3) First in-First out (FIFO) buffers. Performed data analysis to optimize thermal controls and PID response system for mammography detector for superior X-ray quality.

Saint Mark's High School, Wilmington, DE — Basketball Coach

November 2017 - February 2020

Provided coaching and guidance to freshman high school students. Maintained strong leadership experience as well as excellent time management and scheduling skills. Was responsible for managing practice sessions and planning/executing game strategy to a team of twelve students.

Awards and Publications

- Member of Eta Kappa Nu - the Electrical and Computer Engineering Honor Society
- University of Delaware Presidential Scholarship, Diamond State Scholarship, Chubb Foundation Scholarship
- Two publications for the Army Research Laboratory (Only available to DoD Agencies)

Wilmington, DE 19806

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PROGRAMMING SKILLS

Expert Areas

Classical Computer Vision

Machine Learned Computer Vision

Neural Network Design and Adaptation

Object and Pose Detection

Prediction Networks and Graph Neural Networks

Unmanned Aerial Systems Autonomy

ROS2

High-Level Languages

7+ years of expert experience Python

7+ years of expert experience C++

4+ years of expert experience C# for Object Oriented Programming

3+ years of expert experience in JavaScript for NodeJS and React

Low-Level Languages

7+ years of expert experience Python

7+ years of expert experience C++

4+ years of expert experience C# for Object Oriented Programming

3+ years of expert experience in JavaScript for NodeJS and React

Environments And Systems

Expert in Linux

Expert in Docker Container Deployment

PyTorch, Tensorflow, OpenAI Gym

Unity and Unreal Game Engines