Joshua Field

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Education

Northeastern University | Candidate for BS, MS in Computer Engineering

Boston, MA

GPA: 3.78 | **Graduation Date:** May 2022 | 4th Year

Courses: Mobile & Assistive Robotics | Parallel Processing | AI | Machine Learning | Robotics Sensing & Navigation | Object Oriented Design | Computer Vision

Activities: AerospaceNU | NUAV Project Lead

Awards: Dean's List | NASA Space Apps Hackathon - Boston (1st Place) | Eagle Scout

Experience

California Institute of Technology | Software Engineering Intern — Summer '18, '19 & '20

Pasadena, CA | Python, Java, AWS, Arduino, SQLite

- Developed a smart maintenance sensor network that monitors the treatment of waste water using an Arduino & Raspberry Pi
- Created predictive maintenance regression and classification models to predict the remaining useful life, and most likely root cause of a given failure
- Implemented unsupervised anomaly detection models using clustering and autoencoder methods
- Coded an Android app to monitor the sensor network with a backend of SQLite & Amazon Web Services (DynamoDB, IoT, Cognito, Lambda, SNS)

Scientific Systems Company Inc. | Software Co-op (Autonomy Group) — Jan '19 -Jun '19

Woburn, MA | C++, Python, MATLAB

- Developed collaborative autonomy software for path planning missions, focusing on algorithm development and simulation testing
- Worked on and tested in simulation Multi-UAV RF localization algorithms & software
- Created a graphical interface to visualize simulation log output using wxPython

Skills

Programming: C++, Python, MATLAB, Java **Familiar with:** C, C#

Libraries: OpenCV, Scikit, Pandas, Keras

Technology: ROS, Android Studio, AWS, Unity, SQLite, Simulink, SolidWorks

Projects

AeroNU Software — '19 - Present

Python, C++, OpenCV, ROS

- Created a complete Behavior Tree library for mission planning
- Developed an autonomous platform with Dronekit & ROS to perform complex missions
- Successfully tested a mission for localizing a rocket in a field using RF sensors on a drone.
- Worked on precision landing with ArUco markers

AeroNU AlphaPilot — Spring '19

Python, OpenCV, ROS

- Worked on quadrotor path planning and control models for racing in the FlightGoggles simulator
- Created an object classifier with a YOLOv3 architecture to recognize flight gates