

# Joshua Field

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## Education

**Northeastern University** | BS & MS in Computer Engineering

May '22

*Boston, MA | GPA: 3.88*

**Courses:** Field Robotics, GNSS Signals, Mobile Robotics, Assistive Robotics, Parallel Processing, AI, Machine Learning, Robotics Sensing & Navigation, Object Oriented Design, Computer Vision

**Activities:** Northeastern Unmanned Aerial Vehicles (Founding Member, Software Lead)

**Awards:** Gorlov Prize for Innovation (1st Place Capstone Project), Dean's List, Eagle Scout, NASA Space Apps Hackathon - Boston (1st Place)

## Experience

**Amazon Robotics** | Software Development Engineer I

Aug '22 - Jan '23

*Boston, MA | Java, AWS, Typescript*

- Developed features for robotic workcells to orchestrate the movement of material throughout a warehouse
- Designed and implemented a metrics pipeline and infrastructure using AWS to monitor robotic workcells
- Contributed to team code reviews and supported customers with on-call responsibilities

**Amazon Robotics** | Software Development Engineer Co-op

Jan '21 - Jun '21

*Boston, MA | Python, Java, AWS, Typescript*

- Developed a package singulation detection solution, using Tensorflow to classify images of packages
- Fully integrated the project with AWS (Sagemaker, GreengrassV2, Lambda, Cloudwatch)

**California Institute of Technology** | Software Engineer 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 the remaining useful life, and failure root cause
- Implemented supervised predictive maintenance classification and unsupervised anomaly detection models
- Built an Android app to monitor the sensor network with a backend of SQLite & AWS

**Scientific Systems Company Inc.** | Software Engineer Co-op

Jan '19 - Jun '19

*Woburn, MA | C++, Python, MATLAB*

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

## Skills

**Languages:** C++, Python, MATLAB, Java, Typescript **Familiar with:** C

**Applications:** ROS/ROS2, Gazebo, Tensorflow, Numpy, Pandas, OpenCV, Android Studio, AWS, SQLite

## Projects

**Swarm Carrier Capstone** | Software Lead

Jun '19 - May '22

*Python, C++, ROS2*

- Designed and field tested large octocopter UAV for deployment and recovery of multiple UAVs
- ROS2 and PX4/RTPS architecture to support multi vehicle communication, simulation and path planning
- Implemented autonomous free fall catching and precision landing with OpenCV ArUco markers

**Autonomous Car Algorithms** | EECE7150

Apr '22

*Python, C++, ROS*

- Calibrated and collected data from fully equipped autonomous car sensors (GPS, IMU, Cameras, LIDAR)
- Studied & compared modern perception and localization algorithms on collected data (ORB-SLAM, LeGO-LOAM, etc.)