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 metrics pipeline and infrastructure and deployed to 100s of production robotic workcells, worked with AWS (IoT, Lambda, Cloudwatch, Kinesis, CDK)
- 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 (DynamoDB, IoT, Cognito, Lambda, SNS)

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, OpenCV, Android Studio, AWS, SQLite

Projects

Swarm Carrier Capstone | Software Lead — Jun '19 - May '22

Python, C++, ROS2

- Designed and field tested large octocoptor 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

DeepFlight | CS4100 — Dec '20

Python, Unreal Engine

- Developed a double DQN to train a UAV to fly through an obstacle course given depth images
- Used reinforcement learning environment with OpenAI Gym and Tensorflow, simulated in Unreal Engine