

Matthew Mage

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EDUCATION

Northeastern University, May 2020 — GPA: 3.5

B.S./M.S., Mechanical Engineering (Mechatronics), *Minor*, Computer Science

Honors: University Scholars Program (Full-tuition academic scholarship), Dean's List, Honors Program, AGU ESSI Executive Board, Northeastern Esports Executive Board, Northeastern Club Rocket League

Selected Courses: Intro to ML, Algorithms and Data, Object Oriented Design, Robot Mechanics & Control, Fluid Mechanics, Dynamics and Vibrations, System Analysis and Control, Heat Transfer, ME Computation (FEA)

SKILLS

Languages: Java (Dagger, Lombok), Python (TensorFlow/PyTorch, OpenCV, Pandas), JavaScript (React), C#

Other: Amazon Web Services (AWS), Machine Learning, Linux Administration

EXPERIENCE

Amazon

Software Development Engineer 1 - Bellevue, WA, June 2020 - Present

- Designed new serverless applications using AWS Lambda, SQS and CDK
- Utilized ELK stack to monitor deployed applications and build viewable dashboards
- Designed scalable architectures for processing large streaming datasets

Software Development Engineer Intern - Seattle, WA, July 2019 – December 2019

- Designed a new image generation service using NodeJS and serverless architecture (AWS Lambda, Cloudfront)
- Created and presented design documentation to senior engineers in the company
- Deployed to internal production environment on Amazon Web Services to be released publicly in the future

NEU Probabilistic Machine Learning Lab, *Research Co-op - Boston, MA*, July 2018 – December 2018

- Implemented 1-dimensional dynamical fluid and particle models for cold-spray manufacturing in Python/PyTorch
- Developed novel probabilistic deep neural networks using said cold-spray model to estimate true input conditions without human intervention, including data exploration, cleaning and analysis
- Wrote a academic research paper that was submitted to the Army Research Lab as the end result of the research

Rhombus Power, *Consultant (Machine Learning) - Mountain View, CA*, January 2018 – June 2018

- Created a web interface for the U.S. Air Force's QuANTUM-ARGOS data project using Python/JavaScript, and presented work at the Pentagon to senior leadership in 3 separate briefings
- Built gradient boosting machine learning models for various problems posed by Air Force senior leadership, including developing methods for preventing loss of skilled personnel

NASA Ames Research Center, *Research Co-op - Mountain View, CA*, July 2017 – December 2017

- Lead research project on image super-resolution methods for satellite imagery to provide higher resolution projections for climate research
- Performed primary research, testing, data collection/analysis in GIS software (GDAL-Python, QGIS)
- Used deep convolutional learning methodologies to increase resolution of satellite data by up to 4x

PROJECTS

- calculated.gg: Rocket League Replay Analysis and Machine Learning Site
 - Lead Developer, Backend/DevOps/ML, over 10k active users and 15 million games collected
 - Used Python, PostgreSQL, React/Typescript, PyTorch; hosted on Google Cloud
- Salties: A Distributed Deep Reinforcement Learning Robot for Rocket League
 - Used: Python, Tensorflow, Flask, PostgreSQL (SQLAlchemy)