

Matthew Dailis

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Experience

NASA Jet Propulsion Laboratory, Pasadena, CA (remote) – Software Developer *September 2020 - Present*

- MPSA Aerie (present)
 - o Implemented improvements to a discrete event simulator used for activity planning
 - o Interfaced with users to arrive at software designs that meet needs and are feasible to implement
- Mars Science Laboratory (present)
 - o Led development on a team modernizing a downlink analysis tools codebase for MSL
 - o Certified to independently assess the health of the Curiosity rover's robotic arm
 - o Presented on a spacecraft anomaly to project management
 - o To enable investigation of this anomaly, I optimized our data product parsing code, speeding it up by multiple orders of magnitude.
- Mars 2020 (October 2020-March 2021)
 - o Developed a flight rule checking tool for Mars 2020 teamtools to help them be ready for surface operations
- Psyche/MGSS Science Opportunity Analyzer (September 2020-September 2021)
 - o Maintaining and modernizing a legacy multimission science planning tool for MGSS and Psyche

NASA Jet Propulsion Laboratory, Pasadena, CA – MSL Software Co-op *July 2019 - September 2020*

- Developed tools to automate downlink assessment using an Elasticsearch data store
- Provided flight software and data mining support for anomaly investigations
- Tested and debugged a NOR flash memory based file system in simulator and in hardware
- Developed a patch for a software simulator to properly simulate operations on the NOR chip
- Organized, documented and maintained an organically grown web of python and bash scripts

Optimus Ride, Boston MA – Full Stack Web Co-op *July – December 2018*

- Designed and implemented an MVP for a scheduling application for a fleet of autonomous vehicles using Typescript/ReactJS backed by Express/Node, Scala Play and a Postgres database
- Developed a consistent software development and deployment workflow using Docker

Piaggio Fast Forward, Boston MA – Software Co-op *January – June 2017*

- Wrote modular programs in Python/C++ to develop features for a mobile robot using ROS on Unix
- Adapted a presentation pointer to be used naturally as a controller for the robot
- Implemented an algorithm to transform LIDAR data based on placement of mirrors using C++
- Designed an Operator Control Unit for managing a fleet using AngularJS/Web Sockets
- Organized and kept a fleet of robots operable while under concurrent development using Agile

Northeastern University, Boston MA – Tutor and Grader *Spring 2019, Fall 2017, Summer 2017, Fall 2016*

- Taught new computer science students about functional programming and software design
- Taught second-year students techniques for designing and analyzing algorithms
- Coached advanced students in compiler design and implementation techniques

SS8 Networks, San Jose, CA (remote) – Software Engineering Intern *August – December 2016*

- Collected and organized documentation on Network Software using Confluence, Jira, and Jive

NUTRONS (FIRST Robotics Team), Boston MA – Mentor *September 2015 – December 2017*

- Taught high school students Object-Oriented Programming in Java and Python
 - Guided advanced students to adapt OpenCV Machine Vision algorithms for a competition robot
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Awards

Mars Science Laboratory Individual Award: Discovery *November 2019*

- For extraordinary technical contributions to development, testing, and critical documentation in support of the MSL Flight Software Team
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Computer Knowledge

Languages: Python, Java, Typescript + ReactJS, OCaml, Scala, Bash, C, Rust, Scheme, Smalltalk, R
Database Systems: Elasticsearch, Postgres (SQL)
Software Configuration Management: Git, SVN

Education

Northeastern University, Boston MA

September 2015 – August 2020

Bachelor of Science in Computer Science

GPA: 3.7/4.0

Master of Science in Computer Science (specialization Data Science)

GPA: 3.9/4.0

Related Courses: Large Scale Parallel Data Processing, Programming Languages, Networks,

Object Oriented Design, Compilers, Operating Systems, Theory of Computation,

Algorithms, Group Theory, Probability and Statistics, Logic and Computation, Linguistics

Universidad Carlos III de Madrid, Spain (Engineering Exchange student)

January – June 2018

Related Courses: Operating Systems Design, Distributed Systems, Artificial Intelligence

Udacity Massive Open Online Classes

September 2011-May 2016

Artificial Intelligence in Robotics, Differential Equations in Action, Introduction to Computer Vision

Interests

Classical guitar, Tang Soo Do, Robotics, Soccer, French, Russian, Spanish, Ham Radio