Blake Charlton

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Skills

Languages	Python, JavaScript, HTML, CSS, Java, Unix shell, and SQL.
Technologies	Linux, Git, JSON, XML, Jupyter, Flask, Elasticsearch, AWS, Docker, and Jenkins.

Professional Experience

NASA Jet Propulsion Laboratory

Software Engineer, APR Consulting Inc. — April 2022 - Present

- Served as the Subject Matter Expert for ground software tools used by Engineering and Science Operation team members.
- Worked with Engineering Operations stakeholders to design and enhance tools used in day-to-day operations of the Perseverance rover, including Dockerized Flask APIs deployed in an EC2 instance and Python scripts running on Red Hat Enterprise Linux 8 machines.
- Led effort to update tools to support Mars 2020 transition to Simple Planner mode, an artificially intelligent flight software paradigm that allows the Perseverance rover to operate with some autonomy.
- Automated and enhanced Sequence Integration Engineer (SIE) processes, resulting in a 25% reduction in the SIE timeline, or 3 engineering hours daily.
- Integrated Elasticsearch, implemented multithreading, and automated various tasks to improve performance.

NASA Jet Propulsion Laboratory

Software Engineer, Intern — March 2021 - August 2021

Software Engineer, Columbus Technologies and Services Inc. — August 2021 - April 2022

- Served as the Subject Matter Expert for ground software tools used by Sequence Integration Engineers (SIEs), Science Plan Integrators (SPIs), and Tactical Uplink Leads (TULs) on the InSight Mission.
- Utilized Python, Java, JavaScript, HTML, CSS, and proprietary NASA language, APGEN, to update and fix ground software tools used in the InSight SIE, SPI, and TUL processes.
- Completed significant enhancements, saving operators time and increasing operational safety. Solved multiple problems that had been plaguing the operations team for years.

NASA Jet Propulsion Laboratory

Software Engineering Intern — June 2019 - August 2019

- Worked with the Mission Planning, Sequencing, and Analysis (MPSA) testing team to automate various test processes, including documentation generation, image comparison, and updating statuses of test results.
- Created methodology of centralizing all data used in the documents needed by the MPSA team.
- Used Python scripts and Confluence, Jira, and TestRail APIs to scrape JSON data needed in the automatically generated documents.
- Implemented an image comparison tool for existing Robot Framework automated tests.
- Parsed XML documents containing test results and automatically uploaded the statuses to TestRail.

Education

Ohio State University

B.S. in Computer Science and Engineering, Cum Laude. — August 2017 - May 2021

Awards

Simple Planner 1 Deployment and Ops Team Award - JPL — 2024

- For significant achievement in completing the Simple Planner 1 roll out into surface operations.

Voyager Award - JPL — 2023

- For taking over the SIE tools for Mars 2020 with limited training and knowledge transfer.