James Rockett

jr.rockett@gmail.com • 541-633-9223 • github.com/jrrockett

OBJECTIVE

To obtain a full-time Software Engineering position starting Summer 2021.

EDUCATION

M.S. Computer Science GPA: 4.0
Georgia Institute of Technology *May 2021*
B.S. Aerospace Engineering, Astronautics GPA: 3.41
California Polytechnic State University, San Luis Obispo *June 2018*

Completed Relevant Coursework/Independent Study

- Advanced Operating Systems, Graduate Introduction to Operating Systems, High Performance Computer Architecture, Machine Learning, Robotics: AI Techniques, CLRS Algorithms, UCSD's Data Structures, MIT's Introduction to Computer Science and Programming

TECHNICAL SKILLS

Proficient In: Python, C, C++, Javascript, SQL, Git, Postgres, Kafka, Docker, AWS (EC2, ECS, S3), gRPC, Protocol Buffers, React, Scikit-Learn, Keras, Matlab, Unix CLI (bash)

ENGINEERING INTERNSHIPS

Kollective – Data Engineering Intern *Bend, OR – Fall 2019*

- Architected Kafka/Postgres/S3 ETL pipeline to preserve customer preferences associated with delivery records
- Implemented the pipeline requiring two Kafka consumers in their respective applications
- Communicated between applications using Postgres notify/listen events
- Optimized Postgres queries to mitigate database load and increase application throughput
- Stored results in AWS S3 in compressed columnar (.parquet) format to optimize future lookups
- Deployed containerized applications to AWS ECS using Docker and Jenkins for CI/CD
- Profiled and characterized customer usage time series data via preprocessing and unsupervised learning techniques

InEnTec Inc. – Engineering Intern *Richland, WA – Summer 2017*
Cv International – Engineering Intern *Bend, OR – Summer 2016*

RELEVANT EXPERIENCE

Systems Programming Projects

- Implemented a multi-threaded file transfer protocol framework on top of C TCP sockets
- Created a proxy server/cache system for the multithreaded file transfer framework using POSIX shared memory and message queues
- Implemented a weakly consistent, multithreaded distributed filesystem using the gRPC/protocol buffer framework in C++

Machine Learning Projects

- Compared, optimized and analyzed supervised learning methods such as decision trees, KNN, neural networks, SVM's, and boosted decision trees on multiple datasets
- Compared and analyzed randomized optimization techniques such as hill climbing, simulated annealing, genetic algorithms, and MIMIC as optimizers for a neural network
- Compared and analyzed k-means and EM clustering methods on multiple datasets in (un)supervised environments
- Conducted EDA in the form of feature selection and transformation using PCA, ICA and clustering techniques

AI Techniques for Robotics Projects

- Implemented Kalman and particle filters to localize virtual robots with noisy measurements
- Maintained virtual tank pressure through varying rocket flight stages using PID control
- Implemented A* and Theta* algorithms to plan virtual warehouse robot paths in discrete and continuous environments
- Implemented simultaneous localization and mapping (SLAM) to navigate a noisy robot around an unknown environment

Cal Poly Aerospace Senior Design Project

- Computationally analyzed range capabilities of space based optical imaging systems for IR and visible wavelengths
- Simulated near earth object (asteroid) population to optimize the performance of a space based imaging system
- Supported preliminary design reviews at SSL, NASA JPL, Northrop Grumman, and presented at Lockheed Martin