Nathan A. Riojas

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Georgia Institute of Technology
MS, Computer Science
GPA, 4.0

The University of Texas at Austin
BS, Mechanical Engineering
Minor, Computer Science,
Certificate, Engineering Robotics
GPA, 3.6

Work Experience

03/21–Present **Data Science Engineer, Nomi Health**
- Developed an EDI file parser using Python and Protocol Buffers to translate EDI files into JSON format to be used for machine learning analysis
- Optimized an API endpoint to run a lambda within the half minute response time required from AWS API Gateway triggers to parse a DynamoDB table using multiprocessing
- Automated customer facing dataset generation with AWS Lambdas ingesting data from S3 buckets using Cloudwatch triggers for daily and weekly reporting
- Wrote Lambda Handlers to transform data using pandas into desired schemas
- Coded several webscrapers to perform ETL processes to scrape medical codes into a Snowflake database

03/17–11/20 **Software Development Engineer in Test, Codeware Inc.**
- Developed testing frameworks using Python and Javascript to mimic testing functionality within Inspect dialogs incompatible with native TestComplete automation suite functions
- Extended functionality of existing automated tests written within in-house TestComplete automation suite to streamline UI testing and calculation verification
- Iteratively collaborated with software developers to implement new software features
- Improved software robustness through bug identification, replication, and root cause analysis
- Verified alignment of software calculations with international ASME design standards

06/16–03/17 **Equipment Engineer, NXP Semiconductors**
- Identified upgrades to perform on robotic equipment to reduce labor required during weekly system shutdown procedures and increase the factory's semiconductor wafer output

02/15–01/16 **Biomechanics Research Engineer, Biomechanics Experimental Laboratory**
- Designed biaxial testing system to analyze heart tissue to aid in surgical repair of the mitral valve
- Minimized redesign changes to incorporate load cells and actuators using SolidWorks

05/15–10/15 **Robotics Research Engineer, REWIRE Laboratory**
- Modeled a 12 bar linkage gait rehabilitation robot prototype in Matlab for motion path verification and linkage calculations and fabricated a low cost prototype

Technical Projects

Machine Learning For Trading, Georgia Tech **(**2021**)** ***Python***
- Developed a portfolio optimizer using Numpy and Pandas to manipulate stock data and optimize allocations for maximum Sharpe ratio using the scipy.optimize module
- Implemented decision tree, random tree, and random forest learners to analyze overfitting and performance
- Coded a Q-learner and Dyna-Q learner to navigate a robot through a given world with maximum reward

Artificial Intelligence for Robotics, Georgia Tech **(**2020**)** ***Python***
- Coded localization and mapping software to implement a GraphSLAM algorithm based on given sensor data
- Implemented search algorithms (including A*) to determine the shortest path between points subject to varying movement costs
- Programmed Kalman and Particle filters to localize moving objects with noise and navigate objects accordingly
- Developed and tuned PID controls to smooth an autonomous robot's course

MMAxCalc Mobile Application, Mobile Computing **(**2016**)** ***Java, SQLite***
- Developed both front end and back end of Android app to calculate user punching power utilizing accelerometer data from a wearable device
- Created a database of user profile management for metrics tracking

Languages / Tools *Python (Numpy, Pandas, SciPy, BeautifulSoup), Protocol Buffers, AWS, Snowflake, Matlab, Javascript, Java, SQL, SQLite, R (Shiny), HTML/CSS/Bootstrap, TestComplete, Jupyter, Pycharm, Miniconda, Android Studio, Git, GitHub*