Brandon Fujii

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Technical Skills

Languages: Python, Go, Java, Julia, SQL
Cloud: EC2, DynamoDB, CloudFormation, SQS, SNS, Apache Spark, Hadoop, Hive, Impala, Paperspace, Databricks
Data Science: data wrangling, feature engineering, exploratory data analysis, data modeling, hyperparameter optimization, data storytelling, supervised learning, unsupervised learning, reinforcement learning, hypothesis testing
Libraries: Pandas, NumPy, Scikit Learn, TensorFlow, Optuna, Matplotlib

Projects

Predicting Diabetic Early Readmission | *Python, Scikit Learn, Optuna* Apr 2021 - May 2021

- Given the costliness of unplanned early hospital readmission, sought to develop an accurate method of identifying diabetic patients at risk of readmitting early
- Conducted exploratory data analysis, feature engineering, model selection, and hyperparameter optimization to train a random forest model to classify a patient as at risk for early readmission, based on hospital data
- Identified 62% of non-early readmission patients and 61% of early readmission patients, about a 20% improvement from traditional assessment tools

Autonomous Car Racing Agent | *Python, TensorFlow, OpenAI Gym* Jun 2021 - Aug 2021

- Attempted to maneuver a virtual car around an in-game track without hard-coded business logic, as part of OpenAI's car racing Gym environment
- Trained a deep Q-network to estimate the values of performing steering, acceleration, and braking actions for a given in-game frame and inform an agent's decision-making
- The resulting agent successfully navigates the entirety of the track, achieving an average of 820 out of a possible 1000 reward points over 100 trials

Experience

Software Engineer II Sep. 2019 – May 2021
Amazon Web Services *Seattle, WA*

- Worked with a team that automatically disseminates security and kernel patches for over 2 million Amazon hosts

– *Heterogeneous Fleets Project*

- Tasked with an organization-wide goal to accommodate two types of EC2 instances in one fleet
- Created a Go CodeDeploy script that allowed customers to deploy two Amazon Machine Images (AMI) through their continuous deployment pipelines
- Granted customers the flexibility to provision different operating systems and architectures without having to maintain multiple pipelines
- Allowed several teams to migrate to more efficient hardware, saving over $200 million in hardware costs

– *Custom Hash Host Selection Project*

- Created a new host selection algorithm in Java that prevents similar hosts from being patched together while also maximizing host up-time
- Improved patching safety and reduced the time to patch a large AWS service's hosts by about 30%

Research Assistant Jun. 2019 – Sep. 2019
Northwestern University (LCAN Lab) *Evanston, IL*

- Tasked to create a method to automatically detect early Parkinson's disease (PD) in patients through speech features
- Engineered features based on linguistic errors patients produced during speech tasks
- Used a weighted K-nearest neighbor model that classified control and PD patients with more than 88% accuracy
- Presented poster at the World Congress on Parkinson's Disease and Related Disorders

Software Engineering Intern Jun. 2018 – Sep. 2018
Amazon Web Services *Seattle, WA*

- Worked with a security patching team to improve the usability of an internal host-patching tool

- Tasked with creating an web interface where customers can visualize and interact with their patching pipelines, which are the logical entities used to group hosts that require security or kernel patching
- Used Ruby on Rails to create an entirely new website with a webpage for creating a patching pipeline, a view to start and cancel a workflow to patch their pipeline's hosts, and an option to delete vestigial pipelines
- Release of this feature improved developer productivity and increased website usage by over 50%

Software Engineering Intern Jun. 2017 – Sep. 2017

Tumblr *New York City, NY*

- Worked with the product engineering team
- Tasked with developing a more efficient way to share to Tumblr for power users
- Using JavaScript, PHP, and MySQL, developed a new browser share tool, which allows users to post third-party media to the site without directly visiting
- Observed an average increase of 20% in installations across Chrome and Firefox extensions

Teaching Assistant and Peer Mentor Sep. 2014 – Jun. 2019

Northwestern University *Evanston, IL*

- Peer-mentored various courses throughout my undergraduate tenure, including Introduction to Machine Learning, Introduction to Database Systems, Introduction to Artificial Intelligence, and Computer Programming in Racket
- Teaching assistant for a software engineering course called NUvention Web and Media

Education

Northwestern University Evanston, IL

BA in Computer Science *2014 - 2018*

Northwestern University Evanston, IL

MS in Computer Science *2018 - 2019*

Springboard Remote

6-month intensive course in data science, machine learning, Python, and SQL *Mar 2021 - Sep 2021*