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*
- Tasked with preventing hosts with the same data replicas from being patched and rebooted simultaneously
- Created a new host selection algorithm in Java that prevents similar hosts from being patched together while also maximizing host up-time
- Improved the reliability of AWS data storage during security patching
- 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

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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
- Created an web interface where customers can visualize and interact with their patching pipelines
- 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
- 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

CONFERENCES AND PUBLICATIONS

World Congress on Parkinson's Disease and Related Disorders
Montreal, QC

Northwestern University
Jul 2019

- Presented poster Promise of Automation: Development and Preliminary testing of a Language-based Machine Learning Algorithm in PD by B. Fujii, R. Richter, A. Roberts