

ALEXANDER SAFF

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EXPERIENCE

JPMorgan Chase & Co., Software Development Engineer III, New York, NY

Nov 2022- Present

- Moved Spark applications from on prem to AWS EMR clusters orchestrated by Airflow as part of EMEA T+1 reporting work
- Created a developer toolkit for testing Spark applications in AWS, reducing manual effort and saving hours of developer time daily
- Optimized Spark EMR clusters to use dynamic sizing with intelligent creation and destruction, resulting in tens of thousands of dollars saved on our monthly AWS bill
- Conducted interviews and onboarded new hires to the team, creating several guides that are now used as reference documentation by the whole team
- As part of on-call work, diagnosed and corrected production issues in critical Liquidity Risk Reporting Infrastructure reports, which contain terabytes of data and must be delivered daily to regulators around the world

Amazon, Software Development Engineer Intern, Seattle, WA

May 2021- Aug 2021, May 2020- Aug 2020

- Added backend and frontend features in Java and JavaScript to the electronic invoicing application for the External Systems Integration Team
- Implemented automated EMR cluster resize stress test tool as part of larger EMR cluster resize stability project
- Worked across five teams in multiple countries to modify several microservices in order to add a new feature with end-to-end functionality
- Rolled out code changes to frontend and backend code. Developed architectural changes to create new code tests and test host machines in automated CI/CD Pipelines. Implemented automated app log collection and central log storage database.

Colgate-Palmolive, Software & Applications Development Intern, Piscataway, NJ

Sept 2020- May 2021, Sept 2019- May 2020, June 2018- May 2019

- Created automated sales dashboard systems for Hill's Pet Nutrition Europe. Developed with agile methodology and met with stakeholders in Europe twice a week. System is currently used daily by all company sales representatives in Europe.
- Developed a recurrent deep learning model to predict order cuts and made an automated data pipeline to pull data for model training
- Produced a GitHub Action for building Docker images with automatic semantic versioning and caching (reducing build times by up to 60%) and created a Python library for Docker container development using Kubernetes with CI/CD

Capital Group, Predictive Analytics Summer Associate, Irvine, CA

June 2019- Aug 2019

- Worked in the newly created Predictive Analytics Lab to predict call center volume and reason-for-call to optimize call center staffing and improve call routing
- Implemented regressions, random forests, k-nearest neighbors, and deep learning models

Storming Robots, Lead Instructor, Branchburg, NJ

Aug 2014- Aug 2017

- Taught Sunday C programming classes during school semesters, and Monday-Friday during breaks

EDUCATION

Cornell Tech, New York, NY

Aug 2021- May 2022

Master of Engineering in Computer Science | GPA: 3.829

Specialized in machine learning and artificial intelligence. Graduated with thirty-five credits.

Relevant Coursework: Machine Learning Engineering, Applied Machine Learning, Machine Learning Hardware & Systems, Deep Learning, Modeling Under Uncertainty

Honors/Awards: Merit Scholarship Recipient

Rutgers University, New Brunswick, NJ

Sept 2017- May 2021

Bachelor of Science in Computer Science, Bachelor of Science in Economics | GPA: 3.928

Completed the Artificial Intelligence & Cognitive Science track in Computer Science and the Computational Economics & Data Analytics Certificate in Economics. Took graduate-level computer science courses. Graduated with 158 credits.

Relevant Coursework: Machine Learning, Principles of Artificial Intelligence, Intro to Artificial Intelligence, Forecasting & Big Data, Computational Economics, Data Structures, Computer Architecture, Design & Analysis of Computer Algorithms

Honors/Awards: Summa Cum Laude, Honors College Scholar, Highest Honors in Computer Science, Eugene E Agger Memorial Award, Milton Friedman Distinguished Scholar Award, Dean's List all semesters, Henry Rutgers Merit Scholarship, Rutgers Trustee Merit Scholarship, Omicron Delta Epsilon Member (economics honors society), Phi Beta Kappa Member (academic honors society)

TECHNICAL SKILLS

Coding Language: Scala, Java, Python, SQL, Bash, JavaScript, Rust

Operating Systems: Windows, Linux (Debian, RHEL, Arch)

Other Tools: AWS, Spark, Airflow, Bitbucket, Jira, PyTorch, NumPy, Pandas, Scikit-learn, Jupyter Notebooks

PROJECTS

Citi Bike Traffic Prediction, Python

Spring 2022

Graph neural network to predict Citi Bike station traffic

- Used distance between stations as the graph edge weights, traffic at each station as node weights
- Predicted 2.5 hours ahead using 5 hours of traffic history
- Achieved mean average error of just 1.84 riders

Citi Bike Availability Prediction, Python

Fall 2022

Markov model using exponential distributions to predict Citi Bike availability

- Transformed the Citi Bike dataset, which shows each individual ride, into a data set of station capacity
- Performed analysis at both five- and ten-minute intervals
- Built Markov models using exponential distributions for the three most active stations to predict station capacity

Water Mark Remover, Python

Spring 2021

Deep CNN GAN to remove water marks from images

- Added random watermarks to the Flickr8k image dataset and trained model to remove them
- Compared the results from deep CNN, CNN based GAN, and transformer models, as well as gradient averaging
- Analyzed the pros and cons of each approach given various time and compute constraints