Moshe Trenk

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Work Experience

Software Engineer | JPMorgan Chase | 05/2022 – Present
Working in Digital Authentication on validating users for critical workflows such as significant payments.
- Developed **Java/Spring** applications for multifactor authentication of over 80 million users. Our project processes millions of transactions and has cut fraud losses by over $200 million.
- The tech stack is predominantly Java microservices with **Cassandra DB,** using **Kafka** and **REST** for communications, and internal tools for our CI/CD pipelines.

Software Engineer | Smithsonian Astrophysical Observatory | 07/2021 – 05/2022
Worked on the archive team of NASA's Chandra X-ray Observatory in the Harvard-Smithsonian Center for Astrophysics.
- Worked on the various **Java** applications that serve the data of the Chandra telescope.
- Created **C++** workflow enabling integration of new observations into the Chandra Hierarchical Progressive Survey. Previously ran every 3–5 years and it took several weeks, it can now run in hours.
- Built **Python** web metrics analysis and visualizations to help assess site usage and types of queries. The **JavaScript** front end used the **D3.js** library for graphing.

Software Engineer | Deutsche Bank | 01/2019 – 07/2021
One of two recipients of the 2019 Deutsche Bank Trade Finance Recognition Award for work in robotic process automation (**RPA**).
Led the development of RPA bots to assist securities teams in heavily manual workflows and worked on an automation toolkit to replace manual processes throughout the Corporate Bank, including:
- Development of REST API and API client libraries using **Java**, **Spring Boot,** and **Oracle.**
- Savings of 200 hours of weekly work by building **C#** and **Blue Prism** interfaces to interface the toolkit and internal/vendor applications, as well as automating data entry and manual communication.
- Successfully dividing monolith application into coherent domains of microservices for the toolkit, with significantly improved testing.

Software Engineer | UBS AG | 03/2018 – 01/2019
Worked on the Solvent Wind Down team to optimize data processing tools, significantly reducing the hours spent in yearly reporting of firm assets in the event of insolvency.
- Developed **Java** REST API with **Spring Boot**, along with a diverse array of Spring technologies.
- Developed database and file frameworks using **Spring Batch** and **Oracle SQL**.

Education

Bachelor of Science – Computer Science | City University of New York, College of Staten Island
- Graduation: 12/2017 | Summa Cum Laude with honors in Computer Science
- GPA: 3.9 | Dean's List 2015-2017 | Recipient of the Commencement Award for Computer Science
- Recipient of the Maung Aung Memorial Award for outstanding graduating students

Bachelor of Science – Mathematics | Bellevue University
- Graduated 2024, Bellevue University works in partnership with the JPMorgan Chase Higher Education benefit. The academic programs are on campus in Nebraska and can be taken online.

Projects

Machine Learning Image Classification (Python, Keras, Tensorflow)
- Worked with three teammates to build a machine learning model to classify images from fashion MNIST
- Built using **keras** with a convolutional neural net and the goal of finding optimal model hyperparameters
- Performed grid search with 1400+ variations of the model for fine-tuning experiments

AWS and LLM Chat with Image Generation (AWS, Spring Websockets)
- Built **LLM** integrations using various open models on huggingface including Mistral 7B, Qwen, and Berkeley Starling for text generation, and blended a wide variety of image generation models.
- Built using **AWS EC2** (*elastic* GPU pricing) and Spring **Websockets** integrated with a simple **React UI.** Included fine-tuning for loras, chat summarization for pseudo-caching, and various other fun AI tools.