Amanpreet Singh

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EDUCATION

Stony Brook University

New York, U.S.A.

Master of Science in Computer Science; GPA: 3.93

2019 - 2021

- o Courses: Analysis of Algorithms, Data Science, Natural Language Processing
- Teaching Assistant: CSE 214 Data Structures

University of Mumbai

Mumbai, India

Bachelor of Engineering in Information Technology; First Class with Distinction (72.9%)

2011 - 2015

o Relevant Courses: Data Structures and Algorithms, Operating Systems, Discrete Mathematics

\$ EXPERIENCE

J.P. Morgan Chase & Co.

Mumbai, India

Senior Application Developer Feb 2018 - Aug 2019

• NLP Query Service: An interactive system to resolve user queries that uses a model trained on the CRF classifier from StanfordCore NLP and returns the nearest possible solution from an existing knowledge base.

• Trader Analytics: Implemented functionalities such as absolute and percent variation, market share and standard deviation of stock prices based on historic data to assist traders in making better decisions.

• Memory Optimization: Performance tuning of heap consumption and G1 Garbage Collection through careful analysis of humongous allocations resulting in 80% fewer memory related issues.

• **Real-Time Pricing**: Developed a component which approximates market risk in real-time from live underlying prices; and publishes the results for consumption. It helped retire a legacy system thus saving the firm ~\$250k.

Application Developer

July 2015 - Jan 2018

- Risk Management System: Worked extensively on the core app used by traders for visualizing and hedging risk; 1. Optimized the Positions feed using LMax Disruptor, a low latency queue library for upto 20% faster processing.
 - 2. Process startup time improvement by 50% through the use of concurrency and Spring annotations.
- Market Data Source: Framework for validating the functionality of the critical market data publisher and reporting results using Java MXBeans and Apache POI. Reduced the manual testing effort by 90%.
- Quick-Deploy: Streamlined the deployment, startup and health check of application modules in production.
- MongoDB High availability: Mechanism to switch from replica set to standalone configuration on the fly in case of a data center failure. Ensured business continuity during critical failures and reduced operational risk.

▲ Projects

- Toxic Online Comments: Applied Deep learning and Transfer learning to identify Toxicity in Wikipedia comments. Evaluated and compared the performance of sequential and state-of-the-art BERT models on the task.
- Chess Player Ratings: A regression based model to predict the Elo rating of a player from the moves sequences.
- Relationship Extraction: An attention based and its performance evaluation on the SemEval-2010 Task 8 dataset.
- Skip-gram based Word2Vec: Word2Vec implementation with analysis of cross entropy loss v/s noise contrastive estimation as the objective function. Evaluation is done on the semantic task of word analogies.
- Physual(Capstone): A text to scene generation system to visualize Mechanics word problems based on StanfordCore NLP, Java 3D and Blender Models.
- Miscellaneous: 'News Article Classifier', 'Products Review Sentiment Analyser', 'Songs Recommender System' and 'Similar Document Clustering System' based on tf-idf and page rank algorithms.
- Email Template Generator: Built on the handlebars framework, creates templates to send out reactive email alerts.
- Reliable UDP: Server-Client Exchange with Checksum validation and re-transmission in case of corrupt data.

Publication(s)

• Visualization of Mechanics Problems based on Natural Language Processing: Summarized the research efforts and results of the aforementioned Capstone Project. (International Journal of Computer Applications - April, 2015)

TECHNICAL SKILLS

- Languages: Java, Python, Unix Shell Scripting, SQL, MATLAB
- Frameworks: Spring, Spring-Boot, Tensorflow, NumPy, Scikit-Learn, Pandas, Keras, Matplotlib
- Databases: Sybase ASE, MongoDB, MySQL
- CI Tools: Gradle, Team City, Git, Bitbucket, Ant, Jenkins, YourKit