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, Artificial Intelligence, Discrete Mathematics

A 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: A Bi-GRU model with Attention and dropout to evaluate its performance on the SemEval-2010 Task 8 dataset.
- Sentence Vector Representations: Implementation of Deep Averaging Network(DAN) and the Gated Recurrent Unit(GRU) Sequence models. The results are then evaluated on IMDB movie reviews for sentiment classification.
- 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.
- Natural Language Toolkit Misc.: Miscellaneous projects including 'News Article Classifier' and 'Similar Document Clustering System' based on tf-idf and page rank algorithms..
- Machine Learning: 'Products Review Sentiments', 'Songs Recommendation', and 'Handwritten Digit Recognizer'.

7 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)

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.
- **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

Julu 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.

C TECHNICAL SKILLS

- Languages: Java, Python, Unix Shell Scripting, SQL, MATLAB
- Frameworks: Tensorflow, NumPy, Scikit-Learn, Pandas, Keras, Matplotlib, Spring, Swagger
- Databases: Sybase ASE, MongoDB, MySQL