# Amanpreet Singh

**\** +1 631-312-2565

**a** amanpreet.singh@stonybrook.edu

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### **EDUCATION**

### Stony Brook University

New York, U.S.A.

Master of Science in Computer Science; GPA: 3.93

2019 - 2021

- Courses: Analysis of Algorithms, Natural Language Processing, Data Science, Probability & Statistics
- o Teaching Assistant: CSE 354 Natural Language Processing, CSE 214 Data Structures

#### University of Mumbai

Mumbai, India

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

2011 - 2015

o Courses: Data Structures, Artificial Intelligence, Discrete Mathematics, Databases

### ▲ Projects

- Toxic Online Comments: Toxicity classification in Wikipedia Comments and Twitter datasets by applying deep learning and transfer learning. Analyzed the results of sequential LSTM/GRU against state-of-the-art BERT models.
- Chess Player Ratings: Predicting the Elo rating of a chess player from the moves sequence. Efforts involved EDA and feature engineering using Pandas and Matplotlib; as well as modeling with Linear Regression and Random Forest.
- Relationship Extraction: A Bi-GRU model with Self Attention and Dropout layers to evaluate its performance on the SemEval-2010 Task 8 dataset.
- Sentence Representations: Multi-layered Deep Averaging Network(DAN) and GRU models implementation using TensorFlow and Keras API. The results are then evaluated on IMDB movie reviews for sentiment classification.
- Skip-gram based Word2Vec: A Word2Vec implementation with cross entropy loss and noise contrastive estimation as the objective functions. Evaluation is done on the semantic task of word analogies.
- Physual(Capstone): A text to scene generation system for Physics word problems based on StanfordCore NLP, Java 3D and Blender Models.
- Miscellaneous: News Articles Classifier and Similar Document Clustering System based on TF-IDF using NLTK, Products Review Sentiments, Songs Recommendation, and Handwritten Digit Recognizer.

### **T**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: Introduced statistical enhancements such as absolute and percent variance, market share and standard deviation of historical stock prices to aid in trading decisions.
- Real-Time Pricing: Developed a component using Spring, JMS and TDD principles that approximates real-time market risk using live prices; and publishes out the result. It helped retire a legacy system 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 data feed using LMax Disruptor, a low latency queue Java library for upto 20% faster processing.
  - 2. Process startup time improvement by 50% through the use of Multi-threading and Spring annotations.
- Market Data Source: Framework for validating the functionality of a critical market data publishing app and reporting results using Java MXBeans and Apache POI. Reduced the manual testing effort by 90%.
- Quick-Deploy: Streamlined application deployment, startup and monitoring on Unix production servers.
- MongoDB High availability: Team point of contact for MongoDB. Built a mechanism to switch from replica set to standalone instance on the fly in case of a data center failure ensuring business continuity.

### TECHNICAL SKILLS

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