Amanpreet Singh

📞 +1 631-312-2565

✉ amanpreet.singh@stonybrook.edu

in in/amanpreet-singh-k

EDUCATION

- **Stony Brook University** — New York, U.S.A.
  Master of Science in Computer Science (Graduating 2021) — *Aug. 2019 – Present*
  - **Courses:**: Analysis of Algorithms, Natural Language Processing, Data Science, Theory of Computation
  - **Teaching Assistant:**: CSE 214 - Data Structures
- **K.J.Somaiya College of Engineering (University of Mumbai)** — Mumbai, India
  Bachelor of Engineering in Information Technology; First Class with Distinction (72.9%) — *Aug. 2011 – June. 2015*
  - **Courses:**: Data Structures and Algorithms, Artificial Intelligence, Discrete Mathematics, Data Warehousing

PROJECTS

- **Identifying Toxicity in Online Interactions (*Ongoing*):** Apply sequence based neural models to identify toxicity in Wikipedia comments. Also identify any bias that might have crept in the data due to manually labelling the dataset.
- **Predict Chess Player Rating (*Ongoing*):** Predict the Elo ratings of a player from the moves sequence data.
- **Skip-gram based Word2Vec Implementation**: 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.
- **Arc Standard based Dependency Parser**: A Neural Network Dependency Parser based on a 2014 paper which uses word, POS-tag and label embeddings to create a dependency tree by applying arc-standard transitions.
- **Physual(*Capstone*)**: A text to scene generation system to visualize Mechanics word problems based on StanfordCore NLP, Java 3D and Blender Models.
- **Miscellaneous**: 'Inverted Index Builder', '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 reactive templates to send out 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*)

EXPERIENCE

- **J.P. Morgan Chase & Co.** — Mumbai, India
  Associate (Senior Application Developer) — *Feb 2018 – Aug 2019*
  - **NLP based 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**: Statistical and analytical tools including absolute and percent price variation, market share and standard deviation of Stocks based on historic data to assist traders in making better decisions.
  - **Memory Optimization**: Performance tuning of application memory consumption and (Garbage First) G1 Garbage Collection through careful heap analysis of humongous allocations.
  - **Real-Time Pricing Solution**: Developed a component from scratch which approximates market risk in real-time using live prices and Taylor Series; and publishes the results onto a messaging interface using TDD principles.

  Technology Analyst (Application Developer) — *July 2015 – Jan 2018*
  - **Risk Management System**: Core application used by Traders for visualizing and hedging risk:
    1. Optimized the Positions and Trades feeds processing using LMax Disruptor, a low latency queue library.
    2. Process startup time improvement by 50% through the use of concurrency and Spring Annotations.
  - **Market Data Source**: Developed a framework for validating an in-house process that publishes live market data
  - **Shell Scripting and Java SSH**: Shell scripts to streamline deployment and startup of applications on servers.
  - **MongoDB**: Proficient in setting up standalone/replica set instance, data manipulation and backup/restoration.

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