Syed Tanveer Jishan

Skills in programming, machine learning and large-scale data analysis

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Qualifications

Through many data-driven projects I have learned to: (1) structure and clean messy data, (2) develop methods and write the necessary code for data analysis, (3) visualize and present the data in an aesthetically-pleasing and informative way (**D3.js, Tableau**), and (4) develop useful data products.

Experience with several programming languages (**Python, C/C++, R, Scala**) and various databases (**MySQL, Neo4j, MongoDB**).

In-depth knowledge on machine learning algorithms and models. I can create and evaluate a variety of models with large datasets (**Apache Spark ML**) and small datasets (**scikit-learn**), as well as deep learning models with **TensorFlow**.

Have a deep understanding of graph theory and networks. I can generate multi-domain property graphs with open-source graph systems (**Neo4J**, **Apache Spark GraphFrames**) to gain insights into the relationships between entities.

Relevant Experiences

Machine Learning Developer, Audience Trading Platform Inc., Vancouver, BC — May 2017-Present
Continuing the projects from the Co-op tenure. Part of the work is data collection, data validation, and data warehousing with **Apache Spark** using Python. Scalable machine learning algorithms were applied to the large datasets (derived from log file data and many third party data sources) to support customer-facing data products.

Machine Learning Co-op, Audience Trading Platform Inc. (ATP.io), Vancouver, BC — Apr 2016-Apr 2017
Worked as part of SFU FAS Co-op placement in order to build predictive models for audience re-targeting with the help of **Apache Spark**. Large-scale graph was built using **Neo4j** to generate features for machine learning. **TensorFlow** was used to build recurrent neural network system for audience behavior modelling.

Graduate Assistant – Big Data Lab, Simon Fraser University, Burnaby, BC — Sep 2015-Apr 2016
Assisted the SFU Big Data students in the lab to program for large-scale data analysis. Oversaw the big data projects developed by the students as part of the coursework.

Education

M.Sc. in Computing Science, Simon Fraser University, Burnaby, BC — Sep 2015-May 2017
- GPA: 3.76/4.33

B.Sc. in Computer Science, North South University, Dhaka, Bangladesh — May 2010-Dec 2014
- GPA: 3.81/4.00
- Received the highest distinction, **Summa Cum Laude**.

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Selected Projects

All projects are available on my portfolio website and github

Estimating amount of force and torque generated by hand based on FMG Signals

2017

- A machine learning model was necessary to estimate force generated by hand for robot to replicate the human action as there is no first principle law in physics to translate between force myography signals and force generation.
- **Generalized Regression Neural Network** was used along with **Autoencoder** for dimensionality reduction.
- A favorable R2 score (0.82) was achieved after several trial and error.

Stack: TensorFlow, Python

Personalized Temporal Recommender System based on Recurrent Neural Network

2016

- Adding the context of time to the personalized recommender system to address the issue of change in user behavior over time.
- **Recurrent Neural Network** was used instead of traditional matrix factorization method.
- Comparative study was done by building different recurrent neural network models such as **LSTM** and **GRU**.

Stack: Apache Spark, TensorFlow, Python

Publication: Jishan, Syed Tanveer, and Yiji Wang. "Audience Activity Recommendation Using Stacked-LSTM Based Sequence Learning." *Proceedings of the 9th International Conference on Machine Learning and Computing*. ACM, 2017.

Improving Item coverage for recommendation in disjoint social network

2015

- Identified the problem of item coverage due to disjointedness in the social trust network.
- Formulated a solution based on merging the user-item and user-user trust domain which takes advantage of the transitivity nature of **Matrix Factorization Technique**.
- Improved item coverage by 4% compare to the state-of-art model TrustWalker.

Stack: scikit-learn, Python

Publication: Jishan, Syed Tanveer, and Khaled Diab. "TrusTem: Recommendation in Disjoint Social Networks." (Open)