Ankit A. Sinha

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SKILLS

Programming Languages:	Python (scikit-learn, numpy, pandas, PyTorch, TensorFlow, PySpark, igraph, networkx, cdlib, matplotlib), R (tidyverse, gbm, recipes, caret, glmnet, rpart, ggplot2), T-SQL, MySQL, Java, C#
Tools:	Tableau, Power BI, MS Office Suite, PostgreSQL

EDUCATION

Master of Science in Business Analytics **Aug 2019 – May 2021**
University of Illinois at Chicago (GPA: 3.75)
Coursework: Deep Learning, Statistical Modelling, Data Mining, Big Data Analytics, Text Analytics, Network Analysis

Bachelor of Engineering in Computer Engineering **Aug 2013 – May 2017**
University of Mumbai, India (CGPA: 8.27/10.00)
Coursework: Analysis of Algorithms, Data Structures, Object Oriented Programming, Database Management Systems

PROFESSIONAL EXPERIENCE

Graduate Assistant **Sep 2020 – Present**
University of Illinois at Chicago | Chicago, USA

- Developing an unsupervised fraud detection model using TensorFlow, scikit-learn and T-SQL, on approximately 1.2 million observations, for health insurance claims that incorporates longitudinal scoring using LSTM autoencoder, and cross-sectional scoring using PCA and RIDIT transform for anomaly detection on a sliding window of 3 months

Summer Research Intern **Jul 2020 – Aug 2020**
University of Illinois at Chicago | Chicago, USA

- Researched on community detection algorithms for directed graphs using networkx and igraph for capturing temporal relations between medical procedures to develop a probabilistic model to identify episodes of symptoms for an individual
- Compared different scoring methods to determine the best metrics for evaluation of communities in a directed network using Python's cdlib (a niche package for community detection), and scikit-learn

Assistant Systems Engineer / Software Engineer **Jul 2017 – May 2019**
Tata Consultancy Services | Mumbai, India

- Developed 100+ stored procedures and triggers using T-SQL for manipulation, aggregation, and analysis of client's HRMS data from across 20 different countries, thereby increasing efficiency of data retrieval and querying by 30%
- Developed 200+ web forms using ASP.NET, C#, HTML, CSS, and JavaScript for data collection and analysis of information of 50,000+ users of client's HRMS portal, thereby improving stakeholder/employee engagement by 150%
- Collaborated with team of developers, business analysts, stakeholders, and technical support – from offices across the globe – to determine optimal specifications and solutions as per the business requirements

PROJECTS

Sentiment Analysis of Hotel Reviews using Recurrent Neural Networks (RNN)

- Implemented and tuned 3 variants of RNN - namely, vanilla RNN, GRU, LSTM, and attention models for sentiment analysis of 515,000+ reviews of 1,400+ hotels across Europe using PyTorch. GloVe's 100-dimensional representation is used for embedding. Models with attention work best with an accuracy of 94% for additive attention and 96% for multiplicative attention. An increase of 66.67% in accuracy was observed by incorporating attention mechanisms.

Target Marketing for Paralyzed Veterans of America

- Developed two different models using R's glmnet and gbm packages for calculating the likelihood of response of a user and estimating their respective donation amount from a highly imbalanced dataset with 487 variables and over 95,000 observations. Algorithms like Random Forest, LASSO regression, and Ridge regression were used on an under sampled training set of 50/50 proportion and their scores were calibrated to account for different baseline rates of the minority class. Principal Component Analysis was also performed to reduce the number of variables to 80.

LEADERSHIP & HONORS

- Awarded with "The Innovative Mind" quarterly award by the client for leveraging technology to provide unique solutions, and better customer service
- Treasurer and Publicity Co-head for Computer Society of India, University of Mumbai student chapter
- Member of Illinois Technology Association, Operations Management Group, and Enactus UIC chapter