Abhraneel Sarma

Aspiring Data Scientist with a passion for Data Visualizations

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Education

University of Michigan School of Information — Ann Arbor, MI
Masters in Information // Data Science & HCI Specialization — 2016 - 2018

Indian Institute of Technology Guwahati — Guwahati, India
Bachelor of Design // Major Design & Minor in Mechanical Engineering — 2012 - 2016

Experience

Research Assistant // University of Michigan School of Information, Ann Arbor — Oct 2016 – present

- Designed a survey to study the effects of different visual representations of statistical data on interpretation, and collected data from over 200 respondents.
- Analysed the responses using bayesian linear mixed-effects and item-response theory models to determine effects of the different visual representations.

Graduate Student Instructor // University of Michigan School of Information, Ann Arbor — Sep 2017 – Apr 2018

- Taught an undergraduate course in SI330: Data Manipulation using Python, Pandas, AWS, SQL, mapreduce using Spark.
- Explained course concepts, conducted lectures and led discussion to a class of 60 students; designed course materials and created homework assignments.

Research Intern // Keio-NUS CUTE Center, Singapore — May 2015 – July 2015

- Worked in a team of researchers and led the design and development of a web application for creating mazes and levels for the augmented reality game, AR Muse.
- Stored the changes into a database which was integrated into the app.

Projects

Analysis of the effectiveness of storytelling and interactivity in InfoVis // Master's Thesis Project

- Conducted a study on MTurk to compare effectiveness of different visualization strategies. Prototyped 16 visualizations for comparison. Collected responses to test participants' interpretation of visualization using a survey.
- Analysed the responses to identify the effects of storytelling and interactivity using a bayesian mixed-effects model.

Predicting in Irony in English Tweets // SemEval-2018 Task3

- Implemented a model for binary classification of english tweets based on recurrent neural networks (BiLSTM) which achieves a F1-score of 0.73.
- Used a social network text pre-processing tool and GloVe word embeddings to improve the model performance.

Bayesian implementation of IRT model to analyse the effectiveness of questions

- Implemented a 2 parameter logistic item-response theory model to evaluate the effectiveness of questions in measuring a participants understanding of statistics.
- Analyzed 152 responses in one of 14 different conditions (2 x 7 between subjects' design)

Skills

Data Manipulation
Statistical modeling
Data Visualization
Machine Learning
NLP
Predictive modeling

Tools

D3.js
Python, Pandas, Seaborn
R, tidyverse packages
SQL
Spark
Tableau