JINGHE ZHANG

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PROFESSIONAL SKILLS

Languages: Python, R, SQL
Libraries: Numpy, Scikit-learn, Pandas, Tensorflow, Matplotlib, Genism, NLTK, Seaborn, dplyr, glmnet, ggplot2
Technologies & Tools: Spark, HIVE, Jupyter, Git, Atom, Latex

EXPERIENCE

EDABI (Enterprise Data, Analytics and Business Intelligence), Target Minneapolis, MN
Data Scientist Intern *06/2016 – 08/2016*

- Preprocessed click stream data from target.com using Python and Spark for guest choice modeling and implemented feature learning techniques, NMF and Word2Vec, to construct a meaningful representation of a guest's behavior
- Developed a recurrent neural network, LSTM model, in Tensorflow to predict customers' final purchases using the learned features; evaluated its predictive performance using weighted average precision, recall, and hit rates
- Interpreted the model output using interactive visualization based on t-SNE algorithm and density-based clustering

University of Virginia Charlottesville, VA
Graduate Research Assistant

Representation Learning from Longitudinal Electronic Health Record Data *02/2015 – Present*

- Developed a graph-based framework to represent patients' medical history in large-scale electronic health record DBs
- Evaluated proposed representation learning framework with well-established classifiers, such as SVM, KNN, Random Forest, for the early detection of anxiety and depression of new patients and achieved 1%-5% higher accuracy
- Collaborated with professors, MDs, and two other graduate students in problem definition and data processing

Predictive Modeling on Hyperlactatemia Sepsis *05/2015 – Present*

- Built predictive models for the onset of sepsis using statistical approaches and machine learning algorithms; deployed the logistic regression model into real-time prediction in Epic electronic health record software at UVA health system
- Modeled the real-time probability of recovering from sepsis of critically ill patients based on their physiological characteristics, clinical interventions, and demographic information
- Led a team of six graduate students from engineering and medical backgrounds and conducted weekly presentations and discussions with professors, MD, and heath data scientists

Text Mining on Restaurant Reviews from Yelp *03/2015 - 04/2015*

- Processed millions of reviews from Yelp to construct N-gram vector representation and implemented statistical language models with maximum likelihood estimation and smoothing to retrieve most similar reviews
- Developed and evaluated a text categorization system, including feature selection, Naïve Bayes and KNN classifier with brute force and random vector projection, to distinguish positive and negative restaurant reviews

Graduate Teaching Assistant *01/2014 – 05/2014*

- Hosted office hours, graded assignments, and gave lectures on neural nets for a graduate-level machine learning class

EDUCATION

University of Virginia, Charlottesville, VA *08/2013 – 05/2017 (Expected)*
PhD, Systems & Information Engineering
Dissertation Topic: Graph-based Representation Learning from Longitudinal Electronic Health Record Data for Patient Characterization and Prediction of Health Outcomes

Binghamton University, State University of New York, Binghamton, NY *08/2011 – 05/2013*
Master of Science, Industrial & Systems Engineering

Hebei University of Technology, Tianjin, China *09/2007 – 06/2011*
Bachelor of Science, Industrial Engineering

SELECTED PUBLICATIONS

- **Jinghe Zhang**, Haoyi Xiong, Yu Huang, Hao Wu, Kevin Leach, and Laura E. Barnes. *"M-SEQ: Early Detection of Anxiety and Depression via Temporal Orders of Diagnoses in Electronic Health Data,"* in IEEE International Conference on Big Data. Santa Clara, CA, 2015.
- Bichen Zheng, **Jinghe Zhang**, Sang Won Yoon, Sarah S. Lam, Mohammad Khasawneh, and Srikanth Poranki. "*Predictive Modeling of Hospital Readmissions using Metaheuristics and Data Mining*," in Expert Systems with Applications vol.42, no.20, pp 7110-7120.