JIAZHAO LI

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EDUCATION

University of Michigan U.S *Sept. 2017 – Apr. 2019*
M.S in Electrical Computer Engineering, Computer Vision GPA: 3.826
Core Coursework: NLP, Information Retrieval, Data Mining, Machine Learning, Computer Vision

Nankai University China *Sept. 2013 – June. 2017*
B.S in Electrical Engineering GPA: 88/100
Core Coursework: Advanced Programming Language Design, Mathematical Physical Modeling

RESEARCH EXPERIENCE

Neural Machine Translation between Prescription and Pharmacy Aug 2019 - Present
Research Associate *NLP4Health Group, University of Michigan*

- Built Transformer-based MT model between Prescription and Pharmacy directions corpus.
- Augmented model using MIMICIII domain pretrained embedding, external information from Drug/ Strength and adding lexical, phrase noise to text increasing model robustness.
- Applied ensemble learning and numerical checking to improve accuracy and avoid fictitious generations.
- Applied BLEU score and SARI score to do automatic evaluation on MT performance and simplification and developed Web App to do manual evaluation by pharmacists.

Identify Medication Relations from Clinical Narratives [Paper] Nov. 2018 - Mar. 2019
Research Assistant *NLP4Health Group, University of Michigan*

· Identifying medication relations between drugs and associated attributes automatically from clinical narratives to develop advanced tools for decision support.

- Trained special domain word-embedding on MIMICIII clinical notes dataset to sovle domain shift.
- Feature engineering including part-of-speech tag, named-entities-recognition tag, pre-trained token embedding and bi-direction relative position of target entities pair.
- Developed Bi-LSTM models to extract 8 relations between drug names and adverse events associated concepts with F1 0.892 outperforming CNN and SVM model.

Movie Revenue prediction with Hierarchical Model [Poster] Jan. 2019 - Apr. 2019

- Observed movie revenue followed two mixed Gaussian Distribution: High revenue and Low revenue.
- Based on observation, trained High-Low binary Random Forest Classifier based on labels resulted from Gaussion Mixture Model (GMM) clustering.
- Trained movie Gradient Boosting Regression (GBR performed best) separately on two revenue group and using Back-Off strategy to solve cold start problem.
- Tested generalization of our classification + regression model on Europe Soccer Players.

Video Segments Retrieval System based on Attentive CNN [Report] Sep. 2018 - Nov. 2018

- Enhanced video clip embedding with attentive-weighted context video.
- Generated cross latent feature between video clip embedding and corresponding video content description text embedding by outputer product.
- Trained ACNN model on TACoS dataset with loss function on video-text similarity and offset of video clips achieved 0.347 (IoU=0.5) and 0.719 (IoU=0.1) in Top10.

Attention Based CNN: Sentiment Analysis for Yelp Reviews Sept. 2018 - Dec. 2018

- Combined Hierarchical CNN and Attention Mechanism to build a sentimental analysis classifier based on the Yelp review
- Applied NLTK and Word2Vec to implement text data processing, and rescale the label based on the data distribution
- Built CNN to capture N-gram information of text and introduced Attention Mechanism to improve the performance.
- The final accuracy of this model on the sentence level prediction is up to 69.85%.

SELECTED PROJECTS

PageRank++: European Soccer Team Ranking Prediction Jan. 2018 - Apr. 2018
Best poster of Graph Data Mining Course Project *University of Michigan*

· Designing PageRank++ algorithm to make a prediction on match result, where we redefined the meaning of edge in data graph.

- Applied K-mean to classify soccer player into 4 groups based on scores in 33 features in 5 fields of performance.
- Using PageRank iteration to predict rank with nodes representing feature vector of scores of players component for each team and edges of graph representing probability of win (directed).

Vision-based human-computer interaction game Nov. 2017 - Dec. 2017
Highest score project of Computer Vision course *University of Michigan*

- Developed hand-tracking architecture with ORB oriented descriptor matching batch picture in hand with video image captured by laptop camera.
- Designed HCI Brick Breakers game where the movement of broad is controlled by hand.

PUBLICATIONS

Jiazhao Li, Corey Lester, Yun Jiang, V.G.Vinod Vydiswaran *Transformer-based Transcription between Prescription and Pharmacy.* (In-process) Target ACL 2020 or AMIA
Jiazhao Li, Jinghui Liu, VG Vinod Vydiswaran. *Neural Network Models to Identify Medication Relations-from Clinical Narratives.* MLHC 2019 (Submitted)
V.G.Vinod Vydiswaran, Shibamouli Lahiri, Hyeon Joo, Jinghui Liu, **Jiazhao Li**, Xinyan Zhao, Nabarup Maity, Farhan Siddiqui, Tanmay Basu *Developing Feature-rich Supervised Models to Extract Medication Information and Adverse Events from Clinical Narratives.* JAMIA 2019 (Submitted)

WORK EXPERIENCE

Research Stuff(Aug 2019 - Present)	NLP4Health Group	Prof. VG Vinod Vydiswaran
Research Assistant(Aug 2018- Apr 2019)	NLP4Health Group	Prof. VG Vinod Vydiswaran
Teach Assistant (Jan 2019- Apr 2019)	Information Retrieval	Prof. Rada Mihalcea

SKILLS

Languages	Python, JavaScript, HTML, Julia, Matlab, SQL, C++,
Framework/OS	Tensorflow, PyTorch, Hadoop, Linux

HONORS AND AWARDS

- Sep. 2016. Third Prize Scholarship of the University (10%), NKU
- Sep. 2016. Merit Student of the University (5%), NKU