

HEMING ZHANG

Website: heming-zhang.github.io

Email: hemingzhang@wustl.edu

EDUCATION

Washington University in St. Louis, St. Louis, MO

August 2019 - Present

McKelvey School of Engineering

MS, Computer Science

Major GPA: 4.0/4.0

Central China Normal University, Wuhan, China

September 2015 - June 2019

School of Information Management

BS, Information Management and Information Systems

Overall GPA: 87/100 (Ranked 1/44)

PUBLICATIONS

Study on Knowledge Dissemination in Online Q&A Community with Social Network Analysis 

Zhongyi Wang, **Heming Zhang**, Jing Huang, Chunya Li

2018, Data Analysis and Knowledge Discovery(CSSCI)

PROJECTS

Topics Evolution in Quora 

December 2018 - May 2019

Central China Normal University(CCCU), Supervisor: Ye Chen

- Won "Excellent Capstone Project"
- Aimed to analyze the users' interests and their evolution characteristics of on the social Q&A Community with our improved algorithms from LDA and BTM, so as to guide the personalized recommendation and advertising on Quora Film and Television topics.
- Divided and cleaned the data obtained by crawler according to the period, and then combined the user behaviour data to set weight for the question and answer text within that period.
- Improving BTM algorithm with consideration of text weight, we used new algorithm to conduct topic mining and analyzed the trend of topic evolution, which greatly improved the accuracy of topic mining.

Biscotti: A Ledger for P2P Machine Learning  

Summer 2018

Networks, Systems and Security(NSS) Lab, UBC, Supervisor: Ivan Beschastnikh

- Received the Globalink Research Internship Award of \$4500 offered by MITACS and CSC
- Aimed to establish a trusted decentralized blockchain to perform machine learning in the context of protecting user privacy.
- Through the Verification link and the RONI link in aggregation mechanism to filter of the bad update SGD, which makes test accuracy higher in data sets (MNIST, credit cards) in the case of larger number of users than the previous federated learning and promises a good protection of the users' privacy.

PROFESSIONAL EXPERIENCE

Teaching Assistant of Introduction to Machine Learning

January 2020 - Present

Washington University in St. Louis, St. Louis, MO

- Helped students about materials on theory of machine learning and build algorithms on logistic regression, bagging&random forests, adaboost etc.

Visiting International Research Students (VIRS)

Summer 2018

University of British Columbia, Vancouver, BC

- Wrote python API with softmax, logistic and CNN machine learning algorithms and helped with bootstrapping the deployment of Biscotti on PyTorch with multiple dataset to generate baselines.

Research Assistant

September 2017 - October 2017

Chinese Academy of Sciences, Beijing, China

- Cleaned GPS track data of 12,138 taxis, implemented ST matching algorithm to form road sections, and formed a traffic flow distribution for 96 time sections of 127,049 road sections in Beijing.
- Used NMF method to reduce data dimensions and used k-Mean to cluster data with 50 categories
- Insert Poisson distribution model into the system to achieve anomaly detection and eventually obtain detection accuracy rate of 85%

COURSE WORK

Selected Undergraduate Courses

- Game Theory - *Prof. Qingxing Dong*
- Operating System - *Prof. Yi Xiao*
- Optimization Models and Software Tool - *Prof. Qingxing Dong*
- Data Mining - *Prof. Xiang Liu*
- Social Network Analysis - *Prof. Zhongyi Wang*
- Theory and Technique in Search Engine - *Prof. Zhongyi Wang*
- System Engineering - *Prof. Jing Chen*
- Operation Research - *Prof. Qingxing Dong*

Master Courses(* for currently taking)

- CSE 361S Introduction to System Software - *Prof. Angelina Lee*
- CSE 417T Introduction to Machine Learning - *Dr. Henry Chai*
- CSE 503S Rapid Prototype Development and Creative Programming - *Prof. Todd Sproull*
- CSE 502N Data Structures and Algorithms - *Prof. Cytron & Prof. Cole*
- CSE 517A* Machine Learning - *Prof. Marion Neumann*
- ESE 520* Probability and Stochastic Process - *Prof. Vladimir Kurenok*
- CSE 557A* Advanced Visualization - *Prof. Alwitta Ottley*

ACADEMIC ACHIEVEMENTS

Awards

- 2018, Shuren Scholarship, Top 20% CCNU - ¥2000
- 2018, Globalink Research Internship Award, Top 0.5%, Mitacs and CSC - \$4500
- 2018, Overseas Exchange Scholarship, CCNU - ¥5000
- 2017, Boya Silver Scholarship, Top 2.5% CCNU - ¥3000
- 2016, Boya Scholarship, Top 10%, CCNU - ¥2000

Achievements

- 2019, Outstanding Graduate, Top 20%, CCNU
- 2017, Grand Prize, The 11th Hubei Challenge Cup College Extracurricular Academic Scientific and Technological Works Competition, Top 3%, Hubei provincial department of education
- 2017, Honorable Mention, Mathematical Contest in Modeling and Interdisciplina (MCM/ICM), Top 30%, COMAP
- 2016, Admitted to the "Boya" Plan with excellent academic score and activities, Top 2%, CCNU

PRACTICAL SKILLS

Programming Languages: (* for proficient) Python*, MATLAB*, C*, Java, Assembly, R

Framework: PyTorch, Vue, Semantic UI

Environment: Linux, Mac, Windows