

Hanlin Zhang

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Education

South China University of Technology

B.E. in Computer Science

Guangzhou

Sep. 2017 – 2021(Expected)

- Overall GPA – **3.90/4.0** (Ranking: **4/137**)

University of Alberta

Research Assistant in Electrical and Computer Engineering

Edmonton

July 2019 – Oct. 2019

Research Experiences

Montreal Institute for Learning Algorithms (Mila)

Research Intern

Montreal

Feb. 2019 – now

- Advisor: Prof. Jian Tang
- Project leader in project: Logical reasoning over text

Sun Yat-sen University

Research Assistant

Guangzhou

Nov. 2019 – now

- Advisor: Prof. Xiaodan Liang
- Project leader in project: Harnessing Graph Neural Networks with Logic Rules
- Proposed learning by asking commonsense questions framework for query-efficient, explainable active learning with neural logic inductive learning
- Proposed neural Markov logical network framework for molecular graph generation.

University of Alberta

Research Assistant

Edmonton

July 2019 – Oct. 2019

- Advisor: Prof. Di Niu
- Major participator in project: Factorizing user actions for next-day purchase prediction
- Modeled intrinsic power-law characteristics in implicit feedback datasets
- Derived factorization expressions based on Bayesian Factorization Machines and implemented Bayesian network and Gibbs Sampling using probabilistic programming tools

University of Alberta

Research Assistant

Edmonton

April 2019 – Aug. 2019

- Advisor: Prof. Ivor Cribben
- Project leader project: fMRI brain network dynamics modelling
- Modeled fMRI brain connectivity network based on Gaussian graphical model. Estimated time-evolving networks using time-varying graphical lasso with a combination of lasso penalty and Laplacian penalty
- Utilized alternating direction method of multipliers (ADMM) for convex optimization in joint graphical lasso problem Classified controls and patients using XGBoost based on estimated brain networks. Optimized hyper-parameters of classifiers by Bayesian optimization

Publications

- Hanlin Zhang, Ivor Cribben "Functional Brain Network Connectivity Dynamics and Classification on Resting-state fMRI timeseries", under submission to IEEE Transactions on Biomedical

Engineering (TBME), 2019

- Bang Liu, Hanlin Zhang, Di Niu, Linglong Kong, "Factorizing Historical User Actions for Next-Day Purchase Prediction," under review to ACM Transactions on the Web (TWEB), 2019

Invited Talk

- Reasoning with Graph Neural Network Seminar, HCP lab SYSU

Dec. 2019

Honors & Awards

- Undergraduate Oversea Research Scholarship (CAD \$9000) , China Scholarship Council, 2019
- National Scholarship (ranking: 1st / 140), 2018

Skills

- Programming Language: Experienced in Python, C/C++, Java, Shell, \LaTeX . Familiar with R, SQL, MATLAB
- Machine learning libraries: Pytorch, Tensorflow, Sklearn, Pandas, Numpy, etc
- Solid mathematical foundations in machine learning related areas, e.g., statistical machine learning, optimization theory and approximation algorithms, etc
- Main Courses: Probability and Statistics (4.0/4.0) / Mathematical Analysis (4.0/4.0) / Linear Algebra (4.0/4.0) / Data Structure (4.0/4.0) / Deep Learning (4.0/4.0) / Artificial Intelligence (4.0/4.0)