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Education

Ph.D. Computer Science, Rensselaer Polytechnic Institute, USA, *2016 - now*

M.S. Computer Science, Rensselaer Polytechnic Institute, USA, *2016 - 2018*

M.S. Applied Mathematics, Southwest Jiaotong University, CHINA, *2011 - 2014*

Research Interests

Network Science (inference) / Machine Learning (supervised & reinforcement) / Optimization

Publications

Chunheng Jiang, Jianxi Gao and Malik Magdon-Ismail. Inferring Degrees from Incomplete Networks and Nonlinear Dynamics. In *Proceedings of the 29th International Joint Conference on Artificial Intelligence* (IJCAI 2020), 2020. Rate=12.6%.

Chunheng Jiang, Jianxi Gao and Malik Magdon-Ismail. True Nonlinear Dynamics from Incomplete Networks. In *Proceedings of 34th AAAI Conference on Artificial Intelligence* (AAAI 2020), 2020. Oral. Rate=20.6%.

Jun Wang, Sujoy Sikdar, Tyler Shepherd, Zhibing Zhao, **Chunheng Jiang** and Lirong Xia. Practical Algorithms for Multi-Stage Voting Rules with Parallel Universes Tiebreaking. In *Proceedings of 33rd AAAI Conference on Artificial Intelligence* (AAAI 2019), 2019.

Chunheng Jiang, Sujoy Sikdar, Jun Wang, Lirong Xia, and Zhibing Zhao. Practical Algorithms for Computing STV and Other Multi-Round Voting Rules. In *EXPLORE-2017: The 4th Workshop on Exploring Beyond the Worst Case in Computational Social Choice*, 2017.

Chunheng Jiang and Wenbin Lin. DEARank: A Data-envelopment-analysis-based Ranking Method. *Machine Learning*, 2015, 101: 415 – 435.

Zhongyou Pei, **Chunheng Jiang**, and Wenbin Lin. Random Walks on the Bipartite Graph for Personalized Recommendation. In *2013 International Conference on Computer Science and Artificial Intelligence* (ICCSAI 2013), Yuetong Lin and Gabriel Alungbe, Eds., Chengdu, China, 2013, 97 – 102.

Projects

Fall 2018 - : Inferring True Dynamics from Incomplete Networks, RPI/**Research Assistant**

- Predict steady-states of vertices from incomplete networks (e.g., ecology, epidemic, regulatory)
- Infer vertices' degrees and missing links from partially observed networks
- Recovery true nonlinear dynamics with incomplete information (*e.g.*, topology and steady-states)

Summer 2018 - : Online Early Warning Signals of Highway Traffic Breakdown, RPI/**Research Assistant**

- Preprocess traffic time series data (denoising, smoothing)
- Design and compute early warning signals of traffic congestion
- Machine learning based traffic prediction

Spring - Summer 2017: Multi-round Winner Determination, RPI/**Research Assistant**

- Devise heuristic strategies (sampling, caching, pruning) to search all tied winners
- Train reinforcement learning models to simulate the voting procedure
- Improve the baseline DFS in terms of running time & computing complexity

Summer 2016: Learning to Vote Fairly, RPI/**Research Assistant**

- Implement more than 20 popular voting rules (e.g., Borda count, Condorcet method, STV)
- Learn fairness criteria in voting rules with machine learning approaches
- Apply data augmentation to enhance the learning performance

Fall 2016: Matching Algorithm for OKCollege (now *CollegeAI*)

- Design models to match students and colleges's preferences
- Optimize ranking-related loss functions to train the models

Working/Teaching Experience

Spring 2017/18: CSCI 4150 Introduction to Artificial Intelligence, RPI/**Teaching Assistant**

Fall 2016: CSCI 6100 Machine Learning from Data, RPI/**Teaching Assistant**

July 2014 - Mar. 2016: Chengdu Antusuoji Network Technology Co., Ltd./**Software Developer**

Programming Skills

Python, Java, C/C++, Matlab, Mathematica / Eclipse, PyCharm, Git, LaTeX, Markdown, vim