

Yuhao Yi

POSTDOCTORAL RESEARCHER

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Areas of Specialization

Network Science • Distributed Control • Spectral Graph Theory

Education

- Jan. 2019 DOCTOR OF SCIENCE in Computer Software and Theory
Shanghai Key Laboratory of Intelligent Information Processing,
School of Computer Science, Fudan University, China.
Supervised by Dr. Zhongzhi Zhang.
- July 2013 BACHELOR OF SCIENCE in Computer Science, Fudan University, China

Professional Preparation

- 2019-now Postdoctoral Researcher
- 2016.09- Visting Student
- 2017.09 Networked Systems Lab, Department of Computer Science, Rensselaer Polytechnic Institute, U.S.A.
Supervisor: Stacy Patterson.
- 2017.09- Research Assistant
- 2019.01, Shanghai Key Laboratory of Intelligent Information Processing,
- 2013.09- School of Computer Science, Fudan University, China.
- 2015.12 Supervisor: Zhongzhi Zhang.
- 2016.01- Research Assistant
- 2016.04 Centre for Chaos and Complex Networks, Department of Electronic Engineering,
City University of Hong Kong, China.
Supervisor: Guanrong Chen.

Publications

CONFERENCES

- 6 **Yuhao Yi** and Stacy Patterson, *Disagreement and Polarization in Two-Party Social Networks*. IFAC World Congress 2020, [to appear](#).
- 5 (α - β ordering) Huan Li, Richard Peng, Liren Shan, **Yuhao Yi**, Zhongzhi Zhang, *Current Flow Group Closeness Centrality for Complex Networks*. WWW-2019: 961-971.
- 4 Anirban Das, **Yuhao Yi**, Stacy Patterson, Bassam Bamieh, and Zhongzhi Zhang, *Convergence Rate of Consensus in a Network of Networks*. CDC-2018: 459-465.
- 3 **Yuhao Yi**, Liren Shan, Huan Li, Zhongzhi Zhang, *Biharmonic Distance Related Centrality for Edges in Weighted Networks*. IJCAI-ECAI-2018: 3620-3626.
- 2 Liren Shan, **Yuhao Yi**, Zhongzhi Zhang, *Improving Information Centrality of a Node in Complex Networks by Adding Edges*. IJCAI-ECAI-2018: 3535-3541.
- 1 **Yuhao Yi**, Bingjia Yang, Zhongzhi Zhang, Stacy Patterson, *Biharmonic Distance and the Performance of Second-Order Consensus Networks with Stochastic Disturbances*. ACC-2018: 4943-4950.

JOURNAL ARTICLES

- 9 (α - β ordering) Huan Li, Stacy Patterson, **Yuhao Yi**, Zhongzhi Zhang, *Maximizing the Number of Spanning Trees in a Connected Graph*. IEEE Trans. on Information Theory, (to appear). [arXiv:1804.02785](#).
- 8 **Yuhao Yi**, Zhongzhi Zhang, Stacy Patterson, *Scale-Free Loopy Structure is Resistant to Noise in Consensus Dynamics in Complex Networks*. IEEE Trans. on Cybernetics. 2020, 50(1), 190-200.
- 7 Yi Qi, Zhongzhi Zhang, **Yuhao Yi**, and Huan Li. *Consensus in Self-Similar Hierarchical Graphs and Sierpiński Graphs: Convergence Speed, Delay Robustness, and Coherences*. IEEE Trans. on Cybernetics, 2019, 49(2), 592-603.
- 6 Stacy Patterson, **Yuhao Yi**, and Zhongzhi Zhang. *A Resistance Distance-Based Approach for Optimal Leader Selection in Noisy Consensus Networks*. IEEE Trans. on Control of Network Systems, 2019, 6(1): 191-201.
- 5 **Yuhao Yi**, Zhongzhi Zhang, Liren Shan, and Guanrong Chen. *Robustness of First- and Second-Order Consensus Algorithms for a Noisy Scale-Free Small-World Koch Network*. IEEE Trans. on Control Systems Technology, 2017, 25 (1), 342-350.
- 4 **Yuhao Yi**, Zhongzhi Zhang, Yuan Lin and Guanrong Chen. *Small-World Topology Can Significantly Improve the Performance of Noisy Consensus in a Complex Network*. Comput. J., 2015, 58(12):3242-3254.
- 3 Qian Lv, **Yuhao Yi** and Zhongzhi Zhang. *Corona Graphs as a Model of Small-World Networks*. Journal of Statistical Mechanics: Theory and Experiment, 2015, P11024.
- 2 Zhongzhi Zhang, Huan Li and **Yuhao Yi**. *Anomalous Behavior of Trapping in Extended Dendrimers with a Perfect Trap*. J. Chem. Phys., 2015. 143: 064901.

- 1 Zhongzhi Zhang, Xiaoye Guo, **Yuhao Yi**. *Spectra of Weighted Scale-Free Networks*. Sci. Rep., 2015, 5:17469.

PAPERS IN REVIEW

- 2 **Yuhao Yi**, Anirban Das, Stacy Patterson, Bassam Bamieh, and Zhongzhi Zhang, *Diffusion and Consensus in a Weakly Coupled Network of Networks*. [arXiv:2002.06109](#) (submitted to IEEE Trans. on Control of Network Systems)
- 1 **Yuhao Yi**, Timothy Castiglia, and Stacy Patterson, *Shifting Opinions in a Social Network through Leader Selection*. [arXiv:1910.13009](#) (submitted to IEEE Trans. on Control of Network Systems).

WORKING PAPERS

- 1 **Yuhao Yi**, Bingjia Yang, Zhongzhi Zhang, Stacy Patterson, *Biharmonic Distance and the Performance of Second-Order Consensus Networks with Stochastic Disturbances*. (Journal Version).

Talks

- Nov. 2019 *Fast Approximation Algorithms and Complexity Analysis for Design of Networked Systems*. Algorithms & Randomness Center, Georgia Institute of Technology. Atlanta, GA, USA.
- July, 2018 *Biharmonic Distance Related Centrality for Edges in Weighted Networks*. 27th International Joint Conference on Artificial Intelligence (IJCAI 2018). Stockholm, Sweden.
- Jan. 2018 *Laplacian-based Distance Analysis of First- and Second-Order Network Coherence*. International School and Conference on Network Science (NetSci-X 2018). Hangzhou, China.