

Zirou Qiu | Curriculum Vitae

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🌐 Homepage

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Research Interests

Combinatorial Optimization; Dynamical Systems; Computational Social Science; Computational Epidemiology; Multi-agent Systems; Game Theory;

Publications

- *Assigning Agents to Increase Network-Based Neighborhood Diversity*
Zirou Qiu, Andrew Yuan, Chen Chen, Madhav Marathe, S.S. Ravi, Daniel Rosenkrantz, Richard Stearns and Anil Vullikanti.
Intl. Conf. on Autonomous Agents and Multiagent Systems (AAMAS, Oral) - 2023 (Acceptance rate: 23.3%).
- *Networked Anti-Coordination Games Meet Graphical Dynamical Systems: Equilibria and Convergence*
Zirou Qiu, Chen Chen, Madhav Marathe, S.S. Ravi, Daniel Rosenkrantz, Richard Stearns, Anil Vullikanti
AAAI Conference on Artificial Intelligence (AAAI, Oral) - 2023 (Acceptance rate: 19.6%).
- *Understanding the Co-evolution of Mask-wearing and Epidemics : A Network Perspective*
Zirou Qiu, Baltazar Espinoza, Vitor V. Vasconcelos, Chen Chen, Sara M. Constantino, Stefani A. Crabtree, Luojun Yang, Anil Vullikanti, Jiangzhuo Chen, Jörgen Weibull, Kaushik Basu, Avinash Dixit, Simon Levin, Madhav Marathe.
Proceedings of the National Academy of Sciences (PNAS) - 2022.
- *Finding Nontrivial Minimum Fixed Points in Networked Dynamical Systems*
Zirou Qiu, Chen Chen, Madhav Marathe, S.S. Ravi, Daniel Rosenkrantz, Richard Stearns, Anil Vullikanti
AAAI Conference on Artificial Intelligence (AAAI, Oral) - 2022 (Acceptance rate: 15%).
- *Efficiently Learning the Topology and Behavior of a Networked Dynamical System Via Active Queries*
(* alphabetical order)
Daniel Rosenkrantz, Abhijin Adiga*, Madhav Marathe*, Zirou Qiu*, S.S. S Ravi*, Richard Stearns*, Anil Vullikanti*
International Conference on Machine Learning (ICML) - 2022 (Acceptance rate: 22%).
- *ELRUNA: Elimination Rule-based Network Alignment*
Zirou Qiu, Ruslan Shaydulin, Xiaoyuan Liu, Yuri Alexeev, Christopher S. Henry, Ilya Safro
ACM Journal of Experimental Algorithmics (JEA) - 2021.

Research Experience

University of Virginia - Biocomplexity Institute

Graduate Research Assistant

- Study **graph** problem arise in domains such as dynamical systems, social science, and epidemiology.

Advisor: Prof. Madhav Marathe

Fall 2020 - **Present**

Clemson University - Algorithms and Computational Science Lab

Advisor: Prof. Ilya Safro

Graduate Research Assistant
- Study Computational Biology and Network Science.

Jan 2019 - May 2020

Argonne National Laboratory - Data Science Division
Graduate Research Aide
- Study topology-based network alignment problems.

Host: Chris Henry & Yuri Alexeev
Summer 2019

Education

University of Virginia
Ph.D. in Computer Science
Overall GPA: 4.0/4.0

Charlottesville, VA
Aug 2020 - **Present**

Clemson University
Master of Science in Computer Science - Thesis
Overall GPA: 3.75/4.0

Clemson, SC
Aug 2018 - May 2020

Southeast Missouri State University
Bachelor of Science in Computer Science - Dean's List, Cum Laude
Major GPA: 3.878/4.0; Overall GPA: 3.708/4.0

Cape Girardeau, MO
Aug 2013 - May 2018

Talks

ELRUNA: Elimination Rule-based Network Alignment
Clemson Operational Research Institute: [Link](#)

May 2020

Network Alignment & Local Search
SIGNET seminar, University of Delaware: [Link](#)

Mar 2021

Skills

- **Research:** Approximation/randomized algorithms; Graph theory; Optimization; Large-scale simulations.
- **Proficient Programming Languages:** C/C++; Python
- **Software and Tools:** Linux; Gephi; MySQL; Matlab; R studio

Organizations & Extracurriculars

- **Institute of Electrical and Electronics Engineers (IEEE)** - Student member.
- **Association of Computing Machinery (ACM)** - Student member
- **Society for Industrial and Applied Mathematics (SIAM)** - Student member
- **World Wildlife Fund (WWF)** - Member