

Zirou Qiu | Curriculum Vitae

994 Research Boulevard, Charlottesville, VA

✉ zq5au@virginia.edu

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Research Interests

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

Publications

- *Networked Anti-Coordination Games Meet Graphical Dynamical Systems: Equilibria and Convergence*
Zirou Qiu, Chen Chen, S.S. Ravi, Daniel Rosenkrantz, Richard Stearns, Madhav Marathe
AAAI Conference on Artificial Intelligence (AAAI) - 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, S.S. Ravi, Daniel Rosenkrantz, Richard Stearns, Madhav Marathe
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

Advisor: Prof. Madhav Marathe

Fall 2020 - **Present**

- Study **graph** problem arising in domains such as dynamical systems, game theory, and social networks.

Clemson University - Algorithms and Computational Science Lab

Graduate Research Assistant

Advisor: Prof. Ilya Safro

Jan 2019 - May 2020

- Study Computational Biology and Network Science.

Argonne National Laboratory - Data Science Division

Graduate Research Aide

Host: Chris Henry & Yuri Alexeev

Summer 2019

- Work on topology-based network alignment problems.

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

Honors and Awards

- Recipient of the *UVA Computer Science Scholar Fellowship*.

Guest 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

- **Theory:** Approximation/randomized algorithms; Graph theory; Optimization
- **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