

# Yangxinyu Xie

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## Education

- 2022 – **Ph.D. Candidate**, Wharton School, University of Pennsylvania, *Statistics*.
- 2021 – 2022 **Master of Science**, University of Texas at Austin, *Computer Science*.  
Advisors: Anna Gál and Ngoc Mai Tran  
Thesis: *Matrix Rigidity: A Survey*
- 2017 – 2021 **Bachelor of Science**, University of Texas at Austin, *Computer Science, Mathematics*.

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## Publications

- Preprint ○ Krenn, M., Buffoni, L., Coutinho, B., Eppel, S., Foster, J.G., Gritsevskiy, A., Lee, H., Lu, Y., Moutinho, J.P., Sanjabi, N., Sonthalia, R., Tran, N., Valente, F., Xie, Y., Yu, R., and Kopp, M., 2022. Predicting the Future of AI with AI: High-quality link prediction in an exponentially growing knowledge network. arXiv preprint arXiv:2210.00881.
- Ong, J., Kulpanowski, D., Xie, Y., Nikolova, E. and Tran, N.M., 2022. OpenEMS: an open-source Package for Two-Stage Stochastic and Robust Optimization for Ambulance Location and Routing with Applications to Austin-Travis County EMS Data. arXiv preprint arXiv:2201.11208.
- 2022 ○ Sun, A.Y., Jiang, P., Yang, Z.L., Xie, Y. and Chen, X., 2022. A graph neural network (GNN) approach to basin-scale river network learning: the role of physics-based connectivity and data fusion. *Hydrology and Earth System Sciences*, 26(19), pp.5163-5184.
- 2021 ○ Tran NM, Xie, Y. Improving random walk rankings with feature selection and imputation. In 2021 IEEE International Conference on Big Data (Big Data) 2021 Dec 15 (pp. 5824-5827). IEEE.
- Xie, Y., Kulpanowski, D., Ong, J., Nikolova, E., Tran, NM. Predicting Covid-19 emergency medical service incidents from daily hospitalization trends. *Int J Clin Pract.* 2021; 00:e14920. doi:10.1111/ijcp.14920
- Xie, Y. On  $2 \times 2$  Tropical Commuting Matrices. *Linear Algebra and its Applications*, 620, 92-108.

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## Honors and Awards

- 2022 **Dean's Honored Graduate**, *College of Natural Sciences*, University of Texas at Austin.
- 2022 **Research Distinction**, *College of Natural Sciences*, University of Texas at Austin.

- 2022 **Longhorn Research Poster Session Award 3rd Place Winner**, *Research Week*, University of Texas at Austin.
- 2021 **Science4cast Competition 2nd Place Winner**, *IEEE BigData Cup Challenges*, Institute of Advanced Research in Artificial Intelligence, Vienna, Austria.
- 2021 **UT Austin Member**, *Academy of Undergraduate Researchers Across Texas*.
- 2021 **George H. Mitchell Student Awards Semi-Finalist**, *Student Success Initiatives*, University of Texas at Austin.
- 2021 **Smart City Hackathon 1st Place Winner**, *Good Systems*, University of Texas at Austin.
- 2021 **Distinguished College Scholar**, *College of Natural Sciences*, University of Texas at Austin.
- 2021 **Cactus Standout Award**, *Cactus Yearbook*, University of Texas at Austin.
- 2019 **Second Year Excellence Award**, *College of Natural Sciences*, University of Texas at Austin.
- Fall 2017 **Dean's List**, *College of Undergraduate Studies*, University of Texas at Austin.

## Scholarships, Fellowships and Grants

- 2022 **Boyd Harshburger Travel Award**, *The Southern Regional Council on Statistics*.
- 2021 **Graduate School Application Financial Aid Program**, *oSTEM, Queer in AI*.
- 2021 **Student Fellow**, *College of Undergraduate Studies*, University of Texas at Austin.
- 2021, 2020 **AMS Undergraduate Travel Grants for Joint Mathematics Meeting**.

## Research Presentations

### Talks

- 2021
  - Random walk rankings with feature selection and imputation. IEEE International Conference on Big Data, Virtual, December, 2021.
  - Public Opinions on COVID-19 Vaccines from Social Media: A Machine Learning Study. oSTEM 2021 Symposia. Virtual, October, 2021.
  - Optimizing Ambulance Allocation and Routing During Extreme Events. Smart Cities Consortium, Good Systems, University of Texas at Austin, Austin, TX, January, 2021.
- 2020
  - Matrix Rigidity, Algebraic and Combinatorial Techniques. 3rd Bringing Young Mathematicians Together Conference, Universitat de Valencia, Virtual, December, 2020.
- 2019
  - On 2 by 2 Tropical Commuting Matrices. Southeastern Undergraduate Mathematics Workshop, Georgia Institute of Technology, Atlanta, GA, August, 2019.

### Poster Presentations

- 2022
  - Towards Label Driven Mondrian Forests. The Southern Regional Council on Statistics, 57th Summer Research Conference, Jekyll Island, GA, October, 2022.
  - Predicting Covid-19 EMS Incidents from Daily Hospitalization Trends. Longhorn Research Poster Session, UT Austin, April, 2022. *Poster Presentation Award, Third Place.*
- 2021
  - Optimizing EMS Responses during Extreme Events. MAA Undergraduate Poster Session, Joint Mathematics Meetings, January, 2021. *Honorable Mention Poster.*
- 2020
  - On Tropical Commuting Matrices. MAA Undergraduate Poster Session, Joint Mathematics Meetings, Denver, CO, January, 2020.

## Attendance

- August 2022 **AI+Science Summer School**, *University of Chicago Data Science Institute*, Chicago, IL.
- July 2022 **Graduate Student Concentration Week on Metric Geometry**, *Texas A&M Workshop in Analysis and Probability*, College Station, TX.
- July 2022 **Graduate Summer School on Algorithmic Fairness**, *Institute for Pure & Applied Mathematics*, University of California, Los Angeles, CA.
- June 2022 **PIMS-IFDS-NSF Summer School on Optimal Transport**, *University of Washington*, Seattle, WA.
- June 2022 **Data Science for Democracy**, *SNF Agora Institute, Johns Hopkins University*, Baltimore, MD.
- May 2022 **Algebraic Statistics 2022**, *University of Hawaii at Manoa*, Honolulu, HI.
- November 2021 **Professional Development Summit**, *oSTEM*, Atlanta, GA.
- October 2021 **Statistics Undergraduate Research Experience (SURE)**, *Southern Regional Council on Statistics (SRCOS) Summer Research Conference*.
- August 2021 **Diversity Mentoring Program**, *Joint Statistical Meeting*, Virtual.
- Summer 2021 **Big Data Summer Institute**, *School of Public Health*, University of Michigan, Ann Arbor, MI.
- June 2021 **Random Structures in Optimizations and Related Applications Summer School**, *School of Mathematics at the University of Minnesota*, Virtual.
- May 2021 **New Horizons in Theoretical Computer Science Summer School**, *ACM Special Interest Group on Algorithms and Computation Theory*, Virtual.
- February 2020 **Games, Decisions, Risk and Reliability (GDRR) Undergraduate Workshop**, *The Statistical and Applied Mathematical Sciences Institute*, Durham, NC.
- July 2019 **Undergraduate Workshop in Geometry and Topology**, *University of Notre Dame*, Notre Dame, IN.
- May 2019 **Undergraduate Modelling Workshop**, *The Statistical and Applied Mathematical Sciences Institute*, Durham, NC.

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## Teaching Assistantship

University of Pennsylvania

Fall 2022 **Applied Econometrics I.**

University of Texas at Austin

Spring 2020 **Algorithms and Complexity: Honors.**

Spring 2020 **Predictive Analytics.**

Fall 2019 **Applied Regression and Time Series.**

Fall 2019 **Discrete Mathematics.**

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## Service

### Leadership

Fall 2022 – current **Member**, *Wharton Doctoral Council*, University of Pennsylvania.

Fall 2020 – Spring 2022 **Event Coordinating Officer**, *Mathematicians of Color Alliance of Texas*, University of Texas at Austin.

Fall 2020 – Spring 2021 **UGS Alumni Guide**, *College of Undergraduate Studies*, University of Texas at Austin.

Fall 2018 – Spring 2021 **UGS Ambassador**, *College of Undergraduate Studies*, University of Texas at Austin.

Summer 2018 **Dean's Squad Leader**, *Office of the Dean of Students*, University of Texas at Austin.

### Mentorship

Fall 2022 **Graduate Student Mentor and Panelist**, *3rd annual Statistics Undergraduate Research Experience (SURE)*, The Southern Regional Council on Statistics.

Spring 2020 **Coding in the Classroom Volunteer - Texas School for the Blind and Visually Impaired**, *Department of Computer Science's outreach initiatives*, University of Texas at Austin.

Spring 2019 **ExploreUT Volunteer**, *Department of Computer Science's outreach initiatives*, University of Texas at Austin.

Fall 2018 **Hour of Code Volunteer**, *Department of Computer Science's outreach initiatives*, University of Texas at Austin.

### Presentations

- 2021
  - What are tropical commuting matrices? What is ... talk series, *Mathematicians of Color Alliance of Texas*, University of Texas at Austin, October, 2021.
  - Establishing the *Mathematicians of Color Alliance of Texas*. Outreach Poster Session, *MAA MathFest*, August, 2021.

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## Professional Experience

Summer 2019 **Software Engineering Intern**, *Sense Talent Labs*, San Francisco, CA.

2018–2019 **Data Science Innovation Fellow**, *UT OnRamps*, Austin, TX.

2018 – 2019 **ProjectLEAD**, *Leadership and Ethics Institute*, University of Texas at Austin.



## Skills

Fluent	Python, R, $\LaTeX$
Intermediate	Java, C#, C, C++, SQL
Basic	HTML, Shell