

TIANDONG WANG

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EDUCATION

Ph.D. in Operations Research Aug 2014 - Aug 2019
Concentration: Applied Probability and Statistics. Minors: Finance, Mathematical Statistics.
[Cornell University](#) Ithaca, NY

M.Sc. in Operations Research Aug 2014 - Jan 2017
[Australian National University](#) Canberra, Australia

Bachelor of Actuarial Studies with Honors in Statistics Feb 2010 - Dec 2013

RESEARCH INTEREST

Extreme Value Analysis, Network Analysis, Applied Probability and Stochastic Processes, Mathematical Statistics.

WORK EXPERIENCE

Young Investigator in Shanghai Center for Mathematical Sciences Sep 2022 – Present
[Fudan University](#) Shanghai, China

Assistant Professor in Department of Statistics Sep 2019 – Aug 2022
[Texas A&M University](#) College Station, TX, USA

Research Assistant (Full-Time) in Mathematical Science Institute Dec 2013 – Jul 2014
[Australian National University](#) Canberra, ACT, Australia

RESEARCH PAPERS

T. Wang and S.I. Resnick. Measuring Reciprocity in a Directed Preferential Attachment Network. *Advances in Applied Probability*, DOI: 10.1017/apr.2021.52, 2022.

T. Wang and S.I. Resnick. Asymptotic Dependence of In- and Out-Degrees in a Preferential Attachment Model with Reciprocity. *Extremes*, DOI: 10.1007/s10687-022-00439-5, 2022.

T. Wang and P. Zhang. Hybrid Random Networks Mixing Preferential Attachment with Uniform Attachment Mechanisms. *Annals of the Institute of Statistical Mathematics*, to appear, DOI: 10.1007/s10463-022-00827-5, 2022.

C. Tang, **T. Wang** and P. Zhang. Functional data analysis: An application to COVID-19 data in the United States. *Quantitative Biology*, to appear, 2022+.

B. Das, **T. Wang** and G. Dai. Asymptotic Behavior of Common Connections in Sparse Random Networks. *Methodology and Computing in Applied Probability*, DOI: 10.1007/s11009-021-09900-7, 2021.

P. Zhang, **T. Wang** and J. Yan. PageRank centrality and algorithms for weighted, directed networks. *Physica A: Statistical Mechanics and its Applications*, DOI:10.1016/j.physa.2021.126438, 2021.

T. Wang and S.I. Resnick. Common growth patterns in regional communication networks: a point process approach. *Journal of Data Science*, DOI: 10.6339/21-JDS1021, 2021.

T. Wang and J. Yan. Discussion of “On Studying Extreme Values and Systematic Risks with Nonlinear Time Series Models and Tail Dependence Measures”. *Statistical Theory and Related Fields*, 2021.
DOI: 10.1080/24754269.2020.1869897.

P. Zhang, **T. Wang** and S.X. Xie. Meta-analysis of several epidemic characteristics of COVID-19. *Journal of Data Science*, 18: 536–549, 2020.

T. Wang and S.I. Resnick. Degree growth rates and index estimation in a directed preferential attachment model. *Stochastic Processes and their Applications*, 130(2): 878–906, 2020.

H. Drees, A. Janßen, S.I. Resnick and **T. Wang**. On a minimum distance procedure for threshold selection in tail analysis. *SIAM Journal on Mathematics of Data Science*, 2(1): 75–102, 2020.

P. Wan, **T. Wang**, R.A. Davis, and S.I. Resnick. Are extreme value estimation methods useful for network data? *Extremes*, 23(1): 171–195, 2020.

T. Wang and S.I. Resnick. Consistency of Hill Estimators in a Linear Preferential Attachment Model. *Extremes*, 22(1): 1–28, 2019.

T. Wang and S.I. Resnick. Multivariate Regular Variation of Discrete Mass Functions with Applications to Preferential Attachment Networks. *Methodology and Computing in Applied Probability*, 20:1029–1042, 2018.

P. Wan, **T. Wang**, R.A. Davis and S.I. Resnick. Fitting the Linear Preferential Attachment Model. *Electronic Journal of Statistics*, 11(2):3738–3780, 2017.

T. Wang and S.I. Resnick. Asymptotic Normality of In- and Out-Degree Counts in a Preferential Attachment Model. *Stochastic Models*, 33(2):229–255, 2017.

Y. Fan, P. Griffin, R.A. Maller, A. Szimayer and **T. Wang**. The Effects of Largest Claims and Excess of Loss Reinsurance on a Company’s Ruin Time and Valuation, *Risks*, 5(1):3, 2017.

PREPRINTS

T. Wang and S.I. Resnick. Random Networks with Heterogeneous Reciprocity Levels. arXiv:2208.00348. *Submitted to Annals of Applied Probability*, 2022.

D. Cirkovic, **T. Wang** and X. Zhang. Likelihood-based Change-point Detection in Preferential Attachment Networks. arXiv:2206.01076. *Submitted to Biometrika*, 2022.

J. Wang, Y. Hou, X. Li and **T. Wang**. EVIboost for the Prediction of Extreme Value Index under Heterogeneous Extremes. arXiv:2205.14512. *Submitted to Journal of Data Science*, 2022.

D. Cirkovic, **T. Wang** and S.I. Resnick. Preferential Attachment with Reciprocity: Properties and Estimation. arXiv:2201.03769. *Submitted to Stochastic System*, 2022.

T. Wang, J. Yan, Y. Yuan and P. Zhang. Generating Directed Networks with Predetermined Assortativity Measures. arXiv:2201.03451. *Submitted to Statistics and Computing*, 2022.

T. Wang and S.I. Resnick. A directed preferential attachment model with Poisson Measurement. arXiv preprint: 2008.07005. *Submitted to Methodology and Computing of Applied Probability*, 2022.

WORKING PAPERS

D. Cirkovic and **T. Wang**. Bayesian Estimation for Preferential Attachment Models with Heterogeneous Reciprocity Levels.

Y. Yuan, **T. Wang**, P. Zhang and J. Yan. Efficient Generation of Weighted and Directed Preferential Attachment Networks.

GRANTS

PI, NSF DMS-2210685, “Collaborative Research: Models and Inferences for Heterogeneous Interaction Patterns of Social Networks”, 2022-2025. (Suspended due to PI’s relocation.)

Participant, NSFC-7217010183 (PI: Y. Hou, School of Data Science, Fudan University), 2022-2025.

Co-PI, T3: Texas A&M Triads for Transformation, Round 4, 2021-2022.

STUDENTS

Daniel Cirkovic (Ph.D. student at Texas A&M University, chair)

Huiling Liao (Ph.D. student at Texas A&M University, committee member)

Silvana Delgado (Ph.D. student at Texas A&M University, committee member)

Sijing Yu (M.S. student at Texas A&M University, committee member)

Vrushabh Bhangod (M.S. student at Texas A&M University, committee member)

Andrew Lastinger (M.S. student at Texas A&M University, committee member)

Alexander Coulter (M.S. student at Texas A&M University, co-advised with D.B.H. Cline)

Gengling Dai (Visiting Ph.D. student from Singapore University of Technology and Design. Advisor: B. Das)

SELECTED TALKS

“Asymptotic Dependence of In- and Out-Degrees in a Preferential Attachment Model with Reciprocity”

Invited talk at New England Statistics Symposium, May 2022, University of Connecticut, Connecticut, USA.

“Reciprocity and Large Degree Dependence in a Preferential Attachment Network”

Contributed talk at 12th Extreme Value Analysis Conference, June 2021.

“A Linear Preferential Attachment Model with Poisson Growth”

Session organizer and presenter, ICSA Applied Statistics Symposium, Dec 2020, Houston, USA.

“A Directed Linear Preferential Attachment Model with Poisson Measurement”

Invited talk, Statistics Colloquium, University of Connecticut, Nov 2020.

“Heavy Tail Phenomena in Preferential Attachment Networks”

Invited talk at INFORMS Telecommunication & Network Analytics, Oct 2020.

“A Directed Linear Preferential Attachment Model with Poisson Measurement”

Invited talk, Statistics Colloquium, Fudan University, June 2020.

“Degree Growth and Index Estimation in a Preferential Attachment Network”

Invited talk at 11th Extreme Value Analysis Conference, July 2019, Zagreb, Croatia.

“Estimation in Preferential Attachment Networks”

Invited talk at the Shanghai Center of Mathematical Sciences, Fudan University, June 2019, Shanghai, China.

Talk at 13th INFORMS Data Mining and Decision Analytics Workshop, November 2018, Phoenix, USA.

“Are Extreme Value Estimation Methods Useful for Network Data?”

Invited talk at Joint Statistics Meeting, July 2018, Vancouver, Canada.

“Consistency of Hill Estimators in a Linear Preferential Attachment Model”.

Invited talk at Self-Similarity, Long-Range Dependence and Extreme, June 2018, BIRS-CMO, Oaxaca, Mexico.

“Multivariate Regular Variation of In- and Out-Degrees in Preferential Attachment Networks”.

Invited talk at Workshop on Lévy processes and time series: in honor of Peter Brockwell and Ross Maller, September 2017, Ulm University, Germany.

“Multivariate Regular Variation of In- and Out-Degrees in Preferential Attachment Networks”.

Invited talk at 10th Extreme Value Analysis Conference, June 2017, TU Delft, Netherlands.

“Asymptotic Normality of In- and Out-Degree Counts in a Preferential Attachment Model”.

Invited talk at New England Statistics Symposium, April 2017, University of Connecticut, Storrs, Connecticut, USA.

SERVICE

- President, Southeastern Texas Chapter of ASA (SETCASA), 02/2022 to present.
- Junior Liaison, National Institute of Statistical Sciences (NISS), 01/2021 to present.
- Colloquium Chair, Department of Statistics, Texas A&M University, 01/2021 to 12/2021.
- Vice President, Southeastern Texas Chapter of ASA (SETCASA), 02/2021 to 01/2022.
- Secretary, Southeastern Texas Chapter of ASA (SETCASA), 02/2020 to 01/2021.

- Referee for: Extremes, Journal of Business and Economic Statistics, Insurance: Mathematics and Economics, Annals of Operations Research, Journal of Applied Probability, Stat, Electronic Communications in Probability, Journal of Time Series Analysis, Mathematical Review.

HONORS AND AWARDS

ISI Elected Member	<i>International Statistical Institute, since 06/2022</i>
Runner Up, 2020 Doctoral Dissertation Award for Operations Research in Telecommunications and Network Analytics	<i>INFORMS Telecommunication & Analytics, 2020</i>
University Medal in Statistics	<i>Australian National University, 2013</i>
Goldman Sachs J B Were Prize	<i>Australian National University, 2013</i>
Colloge of Business and Economics Honors Scholarship	<i>Australian National University, 2012</i>

TECHNICAL SKILLS

Programming Languages R, Python, C++, LaTeX, Microsoft Office

TEACHING EXPERIENCE

Texas A&M University

Instructor , STAT 414-501 Mathematical Statistics I	Fall 2021
Instructor , STAT 695-600 Frontier Course on Random Networks	Spring 2021
Instructor , STAT 650-600 Statistical Foundation for Data Science	Fall 2020 & 2021
Instructor , ICPE 689 Data Science Foundation for Energy I (Module 1)	Fall 2020
Instructor , STAT 611-600 Theory of Inference	Spring 2020, 2021 & 2022
Instructor , STAT 689-600 Probability and Statistics for Data Science	Fall 2019

Cornell University

Teaching Assistant , ORIE 6500 Applied Stochastic Processes	Spring 2019
Teaching Assistant , ENGRD 2700 Basic Engineering Probability and Statistics	Fall 2018
Teaching Assistant , ORIE 5640 Statistics for Financial Engineering	Spring 2018
Teaching Assistant , ENGRD 2700 Basic Engineering Probability and Statistics	Fall 2014

Australian National University

Academic Tutor , STAT 2008/6038 Regression Modeling	Spring 2012
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Updated on June 15, 2022