

Liyan Xie

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EDUCATION

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| Georgia Institute of Technology
Ph.D. in Industrial Engineering
Major in Statistics, Minor in Operations Research | 2016-2021(expected) |
| University of Science and Technology of China
B.S. in Statistics | 2012-2016 |

RESEARCH INTERESTS

Theoretical and methodological foundations of data science inspired by important applications (sensor networks and health care), with a particular interest in sequential change detection and robust hypothesis test through the lens of robust optimization.

PUBLICATIONS

Journal Articles (published or submitted)

1. **Liyan Xie**, George V. Moustakides, and Yao Xie. “Sequential Subspace Change-point Detection.” To appear in 2020, *Sequential Analysis*. (Finalist of INFORMS QSR Best Student Paper Award 2019.)
2. Yang Cao, **Liyan Xie**, Yao Xie, and Huan Xu. “Sequential Change-Point Detection via Online Convex Optimization.” *Entropy*, vol. 20, no. 2, pp. 108, 2018.
3. Anatoli Juditsky, Arkadi Nemirovski, **Liyan Xie**, and Yao Xie. “Convex Recovery of Marked Spatio-Temporal Point Processes.” Accepted. *IEEE Journal on Selected Areas in Information Theory*. 2020.
4. **Liyan Xie**, Shaofeng Zou, Yao Xie, and Venugopal V. Veeravalli. “Sequential Change Detection: Classical Results and New Directions.” Survey paper. Submitted.
5. **Liyan Xie** and Yao Xie. “Sequential Change Detection by Optimal Weighted ℓ_2 Divergence.” *arXiv:2010.11285*. Submitted.
6. Shixiang Zhu, Alexander Bukharin, **Liyan Xie**, Mauricio Santillana, Shihao Yang, and Yao Xie. “High-Resolution Spatio-Temporal Model for County-level COVID-19 Activity in the US.” *arXiv:2009.07356*. Submitted.

Preprints and Working Paper

1. Xi He, **Liyan Xie**, Yao Xie, and Pinar Keskinocak. “Graph Based Variable Selection For Survival Analysis.” *Working paper*.
2. **Liyan Xie**, Rui Gao, and Yao Xie. “Data-driven Robust Hypothesis Testing with Wasserstein Uncertainty Sets.” To be submitted to *Annals of Statistics*. (Runner up for INFORMS Computing Society Student Paper Prize 2019)
3. Shixiang Zhu, **Liyan Xie**, Minghe Zhang, Rui Gao, and Yao Xie. “Distributionally Robust k -Nearest Neighbors for Few-Shot Learning.” *arXiv:2006.04004*, 2020.

Refereed Conference Proceedings

1. Haoyun Wang, **Liyan Xie**, Alex Cuzzo, Simon Mak, and Yao Xie. “Uncertainty Quantification for Inferring Hawkes Networks.” *Conference on Neural Information Processing Systems (NeurIPS)*, 2020.
2. Minghe Zhang, **Liyan Xie**, and Yao Xie. “Online Community Detection by Spectral CUSUM.” *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2020.
3. **Liyan Xie**, Yao Xie, and George V. Moustakides. “Asynchronous Multi-Sensor Change-Point Detection for Seismic Tremors.” *IEEE International Symposium on Information Theory (ISIT)*, pp. 787–791, 2019.
4. Rui Gao, **Liyan Xie**, Yao Xie, and Huan Xu. “Robust Hypothesis Testing Using Wasserstein Uncertainty Sets.” *Advances in Neural Information Processing Systems (NeurIPS)*, pp. 7902–7912, 2018. (spotlight)
5. **Liyan Xie**, George V. Moustakides, and Yao Xie. “First-Order Optimal Sequential Subspace Change-point Detection.” *IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, pp. 111–115, 2018.
6. Yang Cao, **Liyan Xie**, Yao Xie, and Huan Xu. “Nearly Second-Order Asymptotic Optimality of Sequential Change-Point Detection with One-Sample Updates.” *International Conference on Artificial Intelligence and Statistics (AISTATS)*, vol. 84, pp. 519–528, 2018.
7. **Liyan Xie**, Yao Xie, Sin-Mei Wu, Fan-Chi Lin, and WenZhan Song. “Communication Efficient Signal Detection for Distributed Ambient Noise Imaging.” *IEEE Asilomar Conference on Signals, Systems, and Computers*, pp. 1779–1783, 2018.
8. **Liyan Xie** and Yao Xie. “Sequential Detection of Low-Rank Changes Using Extreme Eigenvalues.” *IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)*, pp. 1–5, 2017.

TEACHING EXPERIENCES

Course Served as Instructor at Georgia Tech

ISyE 3030: Basic Statistical Methods, Summer 2020.

Class Size: 13 undergraduate students.

Student Ratings: Enthusiasm 4.5/5; Availability 5/5; Feedback helpfulness 4.57/5; Inclusive 4.83/5.

Course Served as Teaching Assistant at Georgia Tech

ISyE 6740: Computational Data Analysis (Machine Learning I), Fall 2020.

ISyE 3770: Statistics and Applications, Fall 2016 and Spring 2017.

ISyE 2028: Basic Statistical Methods, Summer 2017.

AWARDS AND ACHIEVEMENTS

Selected to participate in EECS Rising Stars Workshop, 2020.

IDEaS-TRIAD Research Fellowship, Georgia Tech, 2020.

ARC-TRIAD Fellowship, Georgia Tech, 2020.

Tech to Teaching Certificate, Obtained Summer 2020.

Runner up for INFORMS Computing Society Student Paper Prize, 2019.

Finalist of INFORMS QSR Best Student Paper Award, 2019.
Third Prize, Best poster award, Georgia Statistics Day, 2019.
ISIT Travel Award, 2019.
Poster Competition Award, WuFest Conference, 2019.
NeurIPS travel award, 2018.
Honorable Mention, Best poster award, Georgia Statistics Day, 2018.

INTERN EXPERIENCES

High-Dimensional Statistical Modeling Unit, RIKEN AIP June - August, 2018
Research Intern (Mentor: Makoto Yamada)

PROFESSIONAL SERVICE

Journal Referee of IEEE Transactions on Signal Processing.
Conference Reviewer for: AAAI 2020-2021; ICML 2020; Neurips 2020; AISTATS 2021; ICLR 2021.
Volunteer for AISTATS 2018.

PRESENTATIONS

2020 INFORMS Annual Meeting.
2019 Conference on Data Science and Optimization, The Fields Institute, Canada.
2019 INFORMS (QSR Competition), Seattle, USA.
2019 ISIT, Paris, France.
2018 NeurIPS, Montreal, Canada.
2018 GlobalSIP, Anaheim, USA.
2018 AISTATS, Lanzarote, Spain.

PROFESSIONAL MEMBERSHIPS

INFORMS student member; IEEE student member.