

Shuang Li

Email: lishuang@cuhk.edu.cn

EDUCATION

- Georgia Institute of Technology** January 2015 - August 2019
- Ph.D. in Industrial Engineering (specification in Statistics, minor in Operations Research)
- Georgia Institute of Technology** August 2013 - December 2014
- M.S. in Statistics
- University of Science and Technology of China** August 2007 - July 2011
- B.S. in Automation (Electrical Engineering)

ACADEMIC EMPLOYMENT

- The Chinese University of Hong Kong (Shenzhen)** June 2021-
Assistant Professor, School of Data Science
- Harvard University** September 2019 - May 2021
Postdoctoral Fellow, Department of Statistics
Research topic: Multi-agent reinforcement learning in mobile health.
Supervisor: Susan Murphy

INDUSTRIAL EMPLOYMENT

- Google** June 2018 - August 2018
Research Intern
Research topic: User behavior modeling for recommender systems.

RESEARCH INTERESTS

- Trustworthy machine learning, including interpretability and fairness
- Temporal logic rules discovery and interpretable RL policy
- Applications in healthcare and other complex systems.

PUBLICATIONS

Google Scholar:
<https://scholar.google.com/citations?user=HxCZsCUAAAAJ&hl=en>

Working Papers

- [P1]. C. Yang, L. Wang, and **S. Li**. “Reinforcement Temporal Logic Rule Discovering to Explain Networked Events.”
- [P2]. J. Pan, C. Yang, L. Wang, and **S. Li**. “Understanding Logic of Experts via Inverse Reinforcement Learning.”
- [P3]. C. Yang, E. Zhalieva, A. Essofi, L. Wang, and **S. Li**. “Controlling the Dynamics of Spatio-Temporal Point Processes via a Smart Threshold Policy.”

Conferences

- [C1]. **S. Li**, M. Feng, L. Wang, A. Essofi, Y. Cao, J. Yan and L. Song. “Explaining Point Processes by Learning Interpretable Temporal Logic Rules.” accepted by *International Conference on Learning Representations (ICLR)*, 2022.

- [C2]. **S. Li**, L. Wang, R. Zhang, X. Chang, X. Liu, Y. Xie, Y. Qi, and L. Song. “Temporal Logic Point Processes.” *International Conference on Machine Learning (ICML)*, 2020. (acceptance rate: $1,088/4,990 = 21.8\%$)
- [C3]. **S. Li**, S. Xiao, S. Zhu, N. Du, Y. Xie, and L. Song. “Learning Temporal Point Processes via Reinforcement Learning.” *Neural Information Processing Systems (NeurIPS)*, 2018. **Spotlight** (acceptance rate: $164/4854 = 3.4\%$)
- [C4]. **S. Li**, Y. Xie, H. Dai, and L. Song. “M-Statistic for Kernel Change-Point Detection.” *Neural Information Processing Systems (NeurIPS)*, 2015. (acceptance rate: $403/1838 = 21.9\%$)
- [C5]. **S. Li**, Y. Cao, C. Leamon, Y. Xie, L. Shi, and W. Song. “Online Seismic Event Picking Via Sequential Change-Point Detection.” *Allerton Conference on Control, Communications and Computing (Allerton)*, 2016.
- [C6]. X. Chen, **S. Li**, H. Li, S. Jiang, Y. Qi, and L. Song. “Generative Adversarial User Model for Reinforcement Learning Based Recommendation System.” *International Conference on Machine Learning (ICML)*, 2019. (acceptance rate: $774/3,424 = 22.6\%$)
- [C7]. Y. Liu, **S. Li**, F. Li, L. Song, and J. Rehg. “Efficient Learning of Continuous-Time Hidden Markov Models for Disease Progression.” *Neural Information Processing Systems (NeurIPS)*, 2015. (acceptance rate: $403/1838 = 21.9\%$)
- [C8]. M. Farajtabar, Y. Wang, M. Gomez-Rodriguez, **S. Li**, H. Zha, and L. Song. “COEVOLVE: A Joint Point Process Model for Information Diffusion and Network Co-evolution.” *Neural Information Processing Systems (NeurIPS)*, 2015. **Oral** (acceptance rate: $15/1838 = 0.8\%$)
- [C9]. H. Dai, B. Dai, Y. Zhang, **S. Li**, and L. Song. “Recurrent Hidden Semi-Markov Model.” *International Conference on Learning Representations (ICLR)*, 2017.
- [C10]. X. Chang, X. Liu, J. Wen, **S. Li**, Y. Fang, L. Song, and Y. Qi. “Continuous-Time Dynamic Graph Learning via Neural Interaction Processes.” *The Conference on Information and Knowledge Management (CIKM)*, 2020.
- [C11]. M. Farajtabar, J. Yang, X. Ye, R. Trivedi, E. Khalil, **S. Li**, H. Xu, L. Song, and H. Zha. “Fake News Mitigation via Point Processes Based Intervention.” *International Conference on Machine Learning (ICML)*, 2017. (acceptance rate: $434/1676 = 25.9\%$)

Journals

- [J1]. **S. Li**, Y. Xie, H. Dai, and L. Song. “Scan B-statistic for Kernel Change-point Detection.” *Sequential Analysis*, 38(4):503-544, 2019.
- **Finalist, INFORMS Quality, Statistics, and Reliability (QSR) Best Student Paper Award, 2018**
- [J2]. **S. Li**, Y. Xie, M. Farajtabar, A. Verma, and L. Song. “Detecting Changes in Dynamic Events over Networks.” *IEEE Transactions on Signal and Information Processing over Networks*, Vol. 3, No. 2, June 2017.
- **Finalist, INFORMS Social Media Analytics Best Student Paper Award, 2018**
- [J3]. **S. Li**, A. Psihogios, E. McKelvey, A. Ahmed, M. Rabbi, and S. Murphy. “Micro-Randomized Trials for Promoting Engagement in Mobile Health Data Collection: Adolescent/Young Adult Oral Chemotherapy Adherence as an Example.” *Current Opinion in Systems Biology*, 2020.
- [J4]. C. Shao, **S. Li**, H. Li, and J. Sheng. “Control for Time-Varying Delay Systems by Integrating Semi-Discretization and Hysteresis-Based Switching.” *Asian Journal of Control*, 2018.
- [J5]. M. Farajtabar, Y. Wang, M. Gomez-Rodriguez, **S. Li**, H. Zha, and L. Song. “COEVOLVE: A Joint Point Process Model for Information Diffusion and Network Evolution.” *Journal of Machine Learning Research (JMLR)*, 18(41):1-49, 2017.

- [J6]. M. Farajtabar, Y. Wang, M. Gomez-Rodriguez, **S. Li**, H. Zha, and L. Song. “COEVOLVE: A Joint Point Process Model for Information Diffusion and Network Evolution.” *The Web Conference, Journal Track*, 2018.
- [J7]. S. Zhu, **S. Li**, Z. Peng, and Y. Xie. “Reinforcement Learning of Spatio-Temporal Point Processes.” *IEEE Transactions on Knowledge and Data Engineering*, 2021.

Book Chapter

- [B1]. Y. Liu, A. Moreno, **S. Li**, F. Li, L. Song, and J. Rehg. “Learning Continuous-Time Hidden Markov Models for Event Data.” *Mobile Health*, Springer, 2017.

Workshop

- [W1]. **S. Li**, L. Wang, R. Zhang, Y. Xie, N. Du, and L. Song. “Temporal Logic Point Processes.” *NeurIPS Workshop on Learning with Temporal Point Processes*, 2019. [Oral](#)
- [W2]. S. Zhu, **S. Li**, Z. Peng, and Y. Xie. “Interpretable Deep Generative Spatio-Temporal Point Processes.” *NeurIPS Workshop on AI for Earth Sciences*, 2020.
- [W3]. M. Farajtabar, M. Gomez-Rodriguez, Y. Wang, **S. Li**, H. Zha, and L. Song. “Co-evolutionary Dynamics of Information Diffusion and Network Structure.” *Workshop on Activity and Events in Networks: Models, Methods Applications, in conjunction with International World Wide Web Conference (WWW)*, 2015.

HONORS AND AWARDS

-
- **Presidential Young Fellow**, The Chinese University of Hong Kong, Shenzhen. Aug 2021- 2023
 - **Finalist**, INFORMS QSR Best Student Paper Competition. 2018
 - **Finalist**, INFORMS Social Media Analytics Best Student Paper Competition. 2018
 - **Second Place**, Jarvis Award for Graduate Student Research in H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology. 2016
 - **Hluchyj Fellowship**, School of Engineering, University of Massachusetts at Amherst 2011-2012
 - **Outstanding Undergraduate Thesis**, Department of Automation, University of Science and Technology of China 2011

TEACHING EXPERIENCES

-
- | | |
|--|---|
| Instructor <ul style="list-style-type: none"> – DDA 2001 Introduction to Data Science – DDA 6060 Machine Learning | The Chinese University of Hong Kong, Shenzhen

Fall 2021
Spring 2022 |
| Teaching Assistant <ul style="list-style-type: none"> – CS 7641 Machine Learning – CSE/ISYE 6740 Computational Data Analysis – CX 4240 Introduction to Computational Data Analysis | Georgia Institute of Technology

Fall 2014, Fall 2016, Spring 2018, Spring 2019
Fall 2014, Fall 2016, Spring 2018, Spring 2019
Spring 2016, Spring 2017 |
| Preparing Course Materials for <ul style="list-style-type: none"> – STAT 234 Sequential Decision Making | Harvard University

Spring 2021 |

PRESENTATIONS

- “Modeling, Learning, and Statistical Inference of Point Processes: A Modern Perspective.”
Invited Talk, Mohamed bin Zayed University of Artificial Intelligence, May, 2021.
- “Modeling, Learning, and Statistical Inference of Point Processes: A Modern Perspective.”
Invited Talk in the School of Data Science, The Chinese University of Hong Kong (Shenzhen), December, 2020.
- “Temporal Logic Point Processes.”
Oral presentation (virtual) at International Conference on Machine Learning (ICML), July, 2020.
- “Learning Temporal Point Processes via Reinforcement Learning.”
Spotlight presentation at Neural Information Processing Systems (NeurIPS), December, 2018.
- “Scan B-statistic for Kernel Change-point Detection.”
Invited talk at INFORMS QSR Best Student Paper Competition, November, 2018.
- “Detecting Changes in Dynamic Events over Networks.”
Invited talk at INFORMS Social Media Analytics Best Student Paper Competition, November, 2018.
- “Learning with Temporal Point Processes.”
Invited tutorial at Google Research, July, 2018.
- “M-Statistic for Kernel Change-Point Detection.”
Poster presentation at Neural Information Processing Systems (NeurIPS), December, 2015.
- “Efficient Learning of Continuous-Time Hidden Markov Models for Disease Progression.”
Poster presentation at Neural Information Processing Systems (NeurIPS), December, 2015.

SERVICES

Program Meta Reviewer (Area Chair)

- ICML (2022)

Program Committee/Reviewer for

- ICML, NeurIPS, AAAI, AISTATS, WWW, UAI, ICASSP
- PLOS ONE
- Entropy
- Frontiers in Computational Neuroscience
- IEEE Transactions on Neural Networks and Learning Systems
- Annals of Applied Statistics
- Transactions on Knowledge and Data Engineering
- Journal of American Statistical Association
- IEEE Transactions on Signal Processing
- IEEE Transactions on Information Theory
- IEEE Transactions on Computational Social Systems