

# Shuang Li

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## EDUCATION

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<b>Georgia Institute of Technology</b>	January 2015 - August 2019
- Ph.D. in Industrial Engineering	
<b>Georgia Institute of Technology</b>	August 2013 - December 2014
- M.S. in Statistics	
<b>University of Science and Technology of China</b>	August 2007 - July 2011
- B.S. in Automation	

## ACADEMIC EMPLOYMENT

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

## INDUSTRIAL EMPLOYMENT

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<b>Google</b>	June 2018 - August 2018
Research Intern Research topic: User behavior modeling for recommender systems	

## RESEARCH INTERESTS

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- Explainable machine learning
- Temporal logic rules discovery and interpretable policies
- Applications in healthcare and other complex systems

## PUBLICATIONS

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### Google Scholar:

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

### Preprint

- [P1]. Z. Wang, R. Gao and **S. Li**. “Neural-Network Mixed Logit Choice Model: Statistical and Optimality Guarantees.” *major revision at Management Science..*

**Second Place, POMS-HK Best Student Paper Award.**

### Conferences

- [C1]. S. Zhang, Z. Wang, R. Gao and **S. Li**. “Deep Context-Dependent Choice Model.” *Neural Information Processing Systems* (NeurIPS), 2025. **Spotlight**
- [C2]. Y. Yang, Z. Wang, R. Gao and **S. Li**. “RKHS Choice Model.” *ACM Conference on Economics and Computation* (EC), 2025.

- [C3]. C. Yang, W. Ren and **S. Li**. “Flow-Based Delayed Hawkes Process.” *Conference on Uncertainty in Artificial Intelligence* (UAI), 2025.
- [C4]. C. Yang, S. Cui, Y. Yang and **S. Li**. “Evolving Minds: Logic-Informed Inference from Temporal Action Patterns.” *International Conference on Machine Learning* (ICML), 2025.
- [C5]. Z. Liu, F. Liu, R. Gao and **S. Li**. “Convergence of Mean-Field Langevin Stochastic Descent-Ascent for Distributional Minimax Optimization.” *International Conference on Machine Learning* (ICML), 2025. **Spotlight** (acceptance rate: 2.6%)
- [C6]. S. Zhang, W. Ren and **S. Li**. “Logic-Logit: A Logic-Based Approach to Choice Modeling.” *International Conference on Learning Representations* (ICLR), 2025.
- [C7]. Y. Yang, W. Ren and **S. Li**. “HyperLogic: Enhancing Diversity and Accuracy in Rule Learning with HyperNets.” *Neural Information Processing Systems* (NeurIPS), 2024.
- [C8]. Y. Yang, C. Yang, B. Li, Y. Fu and **S. Li**. “Neuro-Symbolic Temporal Point Processes.” *International Conference on Machine Learning* (ICML), 2024.
- [C9]. Z. Song, C. Yang, C. Wang, B. An and **S. Li**. “Latent Logic Tree Extraction for Event Sequence Explanation from LLMs.” *International Conference on Machine Learning* (ICML), 2024.
- [C10]. Y. Kuang, C. Yang, Y. Yang and **S. Li**. “Unveiling Latent Causal Rules: A Temporal Point Process Approach for Abnormal Event Explanation.” *International Conference on Artificial Intelligence and Statistics* (AISTATS), 2024.
- [C11]. C. Cao, Y. Fu, S. Xu, R. Zhang and **S. Li**. “Enhancing Human-AI Collaboration Through Logic-Guided Reasoning.” *International Conference on Learning Representations* (ICLR) 2024
- [C12]. Z. Song, W. Ren and **S. Li**. “Amortized Network Intervention to Steer Excitatory Point Processes.” *International Conference on Learning Representations* (ICLR), 2024
- [C13]. C. Cao, C. Yang, R. Zhang and **S. Li**. “Discovering Intrinsic Spatial-Temporal Logic Rules to Explain Human Actions.” *Neural Information Processing Systems* (NeurIPS), 2023
- [C14]. **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.
- [C15]. **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%)
- [C16]. 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.
- [C17]. 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%)
- [C18]. **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%)
- [C19]. 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%)

- [C20]. H. Dai, B. Dai, Y. Zhang, **S. Li**, and L. Song. “Recurrent Hidden Semi-Markov Model.” *International Conference on Learning Representations* (ICLR), 2017.
- [C21]. **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.
- [C22]. **S. Li**, Y. Xie, H. Dai, and L. Song. “M-Statistic for Kernel Change-Point Detection.” *Neural Information Processing Systems* (NeurIPS), 2015. (acceptance rate:  $403/1838 = 21.9\%$ )
- [C23]. 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:  $403/1838 = 21.9\%$ )
- [C24]. 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:  $15/1838 = 0.8\%$ )

## Journals

- [J1]. S. Zhu, **S. Li**, Z. Peng, and Y. Xie. “Reinforcement Learning of Spatio-Temporal Point Processes.” *IEEE Transactions on Knowledge and Data Engineering*, 2022.
- [J2]. **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.
- [J3]. **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**
- [J4]. 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.
- [J5]. 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.
- [J6]. **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**
- [J7]. 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.

## 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]. Y. Fu, C. Yang, X. Chen, Y. Yan and **S. Li**. “Who Should Be Consulted? Targeted Expert Selection for Rare Disease Diagnosis.” *ICML Workshop on Collaborative and Federated Agentic Workflows*, 2025. **Oral**

- [W2]. W. Ren, K. Wan, J. Leng and **S. Li**. “Inferring the Invisible: Neuro-Symbolic Rule Discovery for Missing Value Imputation.” *ICML Workshop on DataWorld: Unifying Data Curation Frameworks Across Domains*, 2025.
- [W3]. S. Zhang, Z. Wang, R. Gao and **S. Li**. “Deep Context-Dependent Choice Model.” *ICML Workshop on Models of Human Feedback for AI Alignment*, 2025. **Oral**
- [W4]. Y. Yan, Y. Fu, W. Ren and **S. Li**. “Unanchoring the Mind: DAE-Guided Counterfactual Reasoning for Rare Disease Diagnosis.” *ICML Workshop on Models of Human Feedback for AI Alignment*, 2025.
- [W5]. C. Cao, Y. Fu, C. Yang and **S. Li**. “Discovering Logic-Informed Intrinsic Rewards to Explain Human Policies.” *ICML Workshop on Programmatic Representations for Agent Learning*, 2025.
- [W6]. Z. Jing, C. Yang and **S. Li**. “Counterfactual Optimization of Treatment Policies Based on Temporal Point Processes.” *ICML Interpretable Machine Learning in Healthcare Workshop*, 2023
- [W7]. C. Yang, L. Wang, Z. Mou and **S. Li**. “Reinforcement Temporal Logic Rule Learning to Explain the Generating Processes of Events.” *ICML Workshop on Interpretable Machine Learning in Healthcare*, 2022.
- [W8]. **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**
- [W9]. S. Zhu, **S. Li**, Z. Peng, and Y. Xie. “Interpretable Deep Generative Spatio-Temporal Point Processes.” *NeurIPS Workshop on AI for Earth Sciences*, 2020. **Spotlight**
- [W10]. 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.

## GRANT

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- (*Major Participant*) National Key R&D Program of China, “AI-Assisted Full-Process Decision-Making for Rare Diseases” (2022ZD0116004) (Project 4 of Research and Clinical Application of AI-assisted Diagnosis Technology for Rare Diseases)  
Amount: 18,000,000 RMB, 12/22-12/25
- (*Principal Investigator*) NSFC Youth, “Explainable Temporal Point Processes with Applications in Complex Systems” (62206236)  
Amount: 300,000 RMB, 1/23-12/25
- (*Co-Investigator*) Shenzhen Foundation Key Research Project, “Human Intelligence Multiagent Models Based on Theory of Mind”  
Amount: 2,000,000 RMB, 8/21-8/24.
- (*Major Participant*) NSFC Major Project Plan, “Big Data Analytics Methods and Systems for Hospital Resource Coordination and Macro Policy Optimization” (72495131)  
Amount: 2,200,000 RMB, 1/25-12/29
- (*Principal Investigator*) Shenzhen Research Institute of Big Data Innovation Fund (Open Research Projects), “Enhancing Personalized Healthcare: Leveraging LLMs for Logic Rule-Based Explanations”  
Amount: 100,000 RMB, 7/24-6/25

## HONORS AND AWARDS

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- **Second Place**, POMS-HK Best Student Paper Award (awarded to student Zhi Wang). Jan 2025

- **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

## STUDENTS

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### Ph.D. Student

- Chao Yang (2022 Fall- ) Current PhD student in SDS, CUHK(SZ)
- Wendi Ren (2023 Fall- ) Current PhD student in SDS, CUHK(SZ)
- Xinye Chen (2023 Fall- ) Current PhD student in SDS, CUHK(SZ)
- Yanwen Liu (2025 Fall- ) Current PhD student in SDS, CUHK(SZ)
- Tianjian Zhang (2025 Fall- ) Current PhD student in SDS, CUHK(SZ)

### Master Student

- Chengzhi Cao (2022 Dec- 2023 Dec) Visiting student from the USTC
- Zitao Song (2022 Jun-2023 May) Master student at CUHK(SZ)
- Yang Yang (2022 Oct-2024 Sep) Master student at CUHK(SZ)
- Yinghao Fu (2023 May- 2024 May) Master student at CUHK(SZ)
- Boyang Li (2023 Sep-) Master student at CUHK(SZ)
- Yuting Yan (2024 Sep-) Master student at CUHK(SZ)

### Undergraduate Student

- Minghao Mou (2022 Jun-2023 May) Initial placement: PhD student in ECE at Purdue University
- Yiling Kuang (2022 Sep-2023 May) Initial placement: PhD student in Statistics at CUHK
- Zhaner Mou (2021 Dec-2022 May) Current placement: PhD student in DS at UC San Diego
- Zilin Jing (2022 May- 2024 May) Initial placement: PhD student in Computer Science at Columbia University
- Junyu Leng (2024 Jan- ) Initial placement: PhD student in ISE at Texas A&M University
- Shuhan Zhang (2024 May- ) **First-author paper: ICLR 2025, NeurIPS 2025 (Spotlight)**
- Jinlong Li (2025 Aug- )
- Jinlong Li (2025 Aug- )

## TEACHING EXPERIENCES

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### Instructor

- |   |  |
|---|--|
| – DDA 6060/CSC Machine Learning               | The Chinese University of Hong Kong, Shenzhen      |
|   | Spring 2022, Spring 2023, Spring 2024, Spring 2025 |
| – DDA 2001 Introduction to Data Science       | Fall 2021, Spring 2024, Spring 2025                |
| – DDA 6107/CSC 6126 Advanced Machine Learning | Fall 2022  |
| – CSC 6137 Generative Models                  | Fall 2023  |

### Teaching Assistant

- |   |  |
|---|--|
| – CS 7641 Machine Learning                  | Georgia Institute of Technology                |
| – CSE/ISYE 6740 Computational Data Analysis | Fall 2014, Fall 2016, Spring 2018, Spring 2019 |
|   | Fall 2014, Fall 2016, Spring 2018, Spring 2019 |

- CX 4240 Introduction to Computational Data Analysis Spring 2016, Spring 2017
- Harvard University
- Preparing Course Materials for**
- STAT 234 Sequential Decision Making Spring 2021

## PRESENTATIONS

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- “Neural-Network Mixed Logit Choice Model: Statistical and Optimality Guarantees.”  
*Invited Talk*, Shanghai University of Finance and Economics, Shanghai, Dec, 2024.
- “Developing Interpretable Temporal Point Process Models for Healthcare.”  
*Invited Talk*, The Hong Kong University of Science and Technology (Guangzhou), Guangzhou, April, 2023.
- “Developing Interpretable Temporal Point Process Models for Healthcare.”  
*Invited Talk*, Airs in Air, Shenzhen, Nov, 2022.
- “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

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### Program Area Chair

- ICML (2022)
- NeurIPS (2023, 2024)
- ICLR (2024, 2025)

### 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