

# Jinlin Lai

MS/PHD STUDENT · MANNING COLLEGE OF INFORMATION AND COMPUTER SCIENCES

University of Massachusetts Amherst, 140 Governors Dr., Amherst, MA 01002

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## Education

### University of Massachusetts Amherst

Amherst, MA, United States

#### PHD IN COMPUTER SCIENCE

Aug 2020 - June 2026 (expected)

- Advisor: Dr. Daniel R. Sheldon
- Area: Probabilistic machine learning, computational statistics and Bayesian inference

### University of Massachusetts Amherst

Amherst, MA, United States

#### MS IN COMPUTER SCIENCE

Aug 2020 - Feb 2024

- GPA (core): 4.0/4.0
- Courses (PhD level):
  - CS: Machine Learning, Optimization in Computer Science, Probabilistic Graphical Models, Advanced Algorithms, Compiler Techniques, Advanced Natural Language Processing
  - Math: Real Analysis I, Numerical Analysis I

### Tsinghua University

Beijing, China

#### B.ENG. OF COMPUTER SCIENCE AND TECHNOLOGY

Aug 2016 - June 2020

- Minors in Finance and Entrepreneurship
- Undergrad research advisors: Dr. Dan Pei, Dr. Jiaying Song
- GPA: 3.67/4.0
- Selected Courses: Experiments in Mathematics, Fundamentals of Search Engine Technology, Game Theory, Introduction to Principles of Communications, Stochastic Mathematical Methods, Theory and Methods for Statistical Inference

## Work Experience

### Basis AI Institute

New York, NY

#### SUMMER RESEARCH INTERN

June 2025 - Now

- Working with Dr. Rafal Urbaniak and Dr. Jack Feser.
- Research in causal inference.

### Flatiron Institute, Simons Foundation

New York, NY

#### SUMMER PRE-DOCTORAL RESEARCHER

May 2024 - August 2024

- Hosted by Dr. Yuling Yao.
- Research in statistical methods for scientific simulators, with applications to biological and cosmological problems.

### Dolby Laboratories Inc.

Sunnyvale, CA

#### ATG IMAGING RESEARCH INTERN

June 2023 - August 2023

- Hosted by Dr. Anustup Choudhury and Dr. Guan-Ming Su.
- Research in generative models and neural rendering.

## Publications

### PREPRINT

Max Hamilton\*, **Jinlin Lai\***, Wenlong Zhao, Subhansu Maji, Daniel Sheldon. (2025). Active Measurement: Efficient Estimation at Scale. arXiv preprint arXiv:2507.01372. [link]

**Jinlin Lai\***, Yuling Yao\*. (2024). Predictive variational inference: Learn the predictively optimal posterior distribution. arXiv preprint arXiv:2410.14843. [link]

### CONFERENCE

**Jinlin Lai**, Daniel Sheldon, Justin Domke. (2024). Hamiltonian Monte Carlo Inference of Marginalized Linear Mixed-Effects Models. In *Proceedings of the 38th Conference on Neural Information Processing Systems (NeurIPS)*, Vancouver, Canada.

[link]

**Jinlin Lai**, Anustup Choudhury, Guan-Ming Su. (2024). Outdoor Scene Relighting with Diffusion Models. In *Proceedings of the 27th International Conference on Pattern Recognition (ICPR)*, Kolkata, India. [link]

**Jinlin Lai**, Javier Burroni, Hui Guan, Daniel Sheldon. (2023). Automatically Marginalized MCMC in Probabilistic Programming. In *Proceedings of the 40th International Conference on Machine Learning (ICML)*, Honolulu, Hawaii, USA. PMLR 202, 2023. [link]

**Jinlin Lai**, Justin Domke, Daniel Sheldon. (2022). Variational Marginal Particle Filters. In *Proceedings of the 25th International Conference on Artificial Intelligence and Statistics (AISTATS) 2022*, Valencia, Spain. PMLR: Volume 151. [link]

Haowen Xu, Wenxiao Chen, **Jinlin Lai**, Zhihan Li, Youjian Zhao, Dan Pei. 2020. Shallow VAEs with RealNVP Prior can Perform as Well as Deep Hierarchical VAEs. ICONIP.

## WORKSHOP

Parashar, Aditya, Aditya Vikram Singh, Avinash Amballa, **Jinlin Lai**, and Benjamin Rozonoyer. (2024). "Quasi-random Multi-Sample Inference for Large Language Models." In *Frontiers in Probabilistic Inference: Learning meets Sampling*. [link]

**Jinlin Lai**, Daniel Sheldon. 2022. Automatic Inference with Pseudo-Marginal Hamiltonian Monte Carlo. ICML workshop Beyond Bayes: Paths Towards Universal Reasoning Systems.

**Jinlin Lai**, Lixin Zou, Jiaxing Song. 2020. Optimal Mixture Weights for Off-Policy Evaluation with Multiple Behavior Policies. Offline Reinforcement Learning Workshop at Neural Information Processing Systems.

## Services

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Served as a reviewer for

- ICML 2022, 2025
- AISTATS 2023, 2024, 2025
- AABI 2023, 2024
- NeurIPS 2024, 2025
- ICLR 2025
- ACM SIGPLAN SLE 2025

## Talks

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**Jinlin Lai**. 2023. Automatically Marginalized MCMC in Probabilistic Programming. Contributed talk in *the 5th Symposium on Advances in Approximate Bayesian Inference*.

## Skills

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**Programming:** Python, C/C++, LaTeX, Tensorflow, Tensorflow-Probability, JAX, NumPyro, PyTorch

**Language:** Chinese (Native), English (Professional), Japanese (Elementary)

## Honors, & Awards

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2017	<b>Academic Excellence Scholarship</b> , Tsinghua University	CNY 5,000
2016	<b>Second Prize, Freshman Scholarship</b> , Tsinghua University	CNY 20,000
2015	<b>Gold Medal, National Olympiad in Informatics</b> , China <b>Gold Medal, Asia and Pacific Informatics Olympiad</b> , China	

## Teaching Experience

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Spring 2025	<b>Introduction to Computation</b> , Teaching Assistant	<i>University of Massachusetts Amherst</i>
Fall 2024	<b>Advanced Algorithms</b> , Teaching Assistant	<i>University of Massachusetts Amherst</i>
Spring 2024	<b>Probabilistic Graphical Models</b> , Teaching Assistant	<i>University of Massachusetts Amherst</i>
Spring 2023	<b>Probabilistic Graphical Models</b> , Teaching Assistant	<i>University of Massachusetts Amherst</i>
Spring 2022	<b>Probabilistic Graphical Models</b> , Teaching Assistant	<i>University of Massachusetts Amherst</i>
Summer 2019	<b>Algorithms for High School Olympics</b> , Lecturer	<i>Nanchang, Jiangxi Province</i>
Summer 2018	<b>Algorithms for High School Olympics</b> , Lecturer	<i>Ganzhou, Jiangxi Province</i>
Summer 2017	<b>Algorithms for High School Olympics</b> , Lecturer	<i>Ganzhou, Jiangxi Province</i>
2015-2016	<b>Algorithms for High School Olympics</b> , Teaching Assistant	<i>Ganzhou, Jiangxi Province</i>