

#### 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 - Sept 2026 (expected)

• Advisor: Dr. Daniel R. Sheldon

· Area: Bayesian inference, probabilistic programming and generative modeling

#### **University of Massachusetts Amherst**

Amherst, MA, United States

Aug 2020 - Feb 2024

MS IN COMPUTER SCIENCE

- GPA: 3.97/4.0
- 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. Jiaxing 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\_

#### **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 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**

**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. (to appear)

**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

**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 \_\_\_

Served as a reviewer for

- ICML 2022
- AISTATS 2023, 2024
- AABI 2023, 2024
- NeurIPS 2024

#### Talks\_

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

### Skills\_\_\_\_\_

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

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

### Honors, & Awards \_\_\_

2017 Academic Excellence Scholarship, Tsinghua University

CNY 5,000

2016 **Second Prize, Freshman Scholarship**, Tsinghua University

CNY 20,000

2015 Gold Medal, National Olympiad in Informatics, China Gold Medal, Asia and Pacific Informatics Olympiad, China

## Teaching Experience \_\_\_\_\_

University of Massachusetts Amherst University of Massachusetts Amherst University of Massachusetts Amherst University of Massachusetts Amherst Nanchang, Jiangxi Province Ganzhou, Jiangxi Province Ganzhou, Jiangxi Province Ganzhou, Jiangxi Province