

# Gavin Kerrigan

[gavin.k@uci.edu](mailto:gavin.k@uci.edu) • [gavinkerrigan.github.io](https://gavinkerrigan.github.io)

## Education

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### Ph.D., Computer Science

University of California, Irvine

Advisor: Padhraic Smyth

2019 - Present

GPA: 4.0/4.0

### B.Sc., Mathematics

The Pennsylvania State University, Schreyer Honors College

Thesis: Estimating Noisy Histograms with Quality Guarantees

Minor: Physics

2015 - 2019

GPA: 3.98/4.0

## Research Experience

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Graduate Student Researcher

University of California, Irvine, Department of Computer Science

Sep. 2019 - Present

Research Assistant

The Pennsylvania State University, Department of Computer Science

Sep. 2018 - June 2019

## Teaching Experience

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Instructor

CS 178: Machine Learning and Data Mining, UC Irvine

- Enrollment: 162

March 2023 - June 2023

Head Teaching Assistant

CS 178: Machine Learning and Data Mining, UC Irvine

- Managed a team of 5 graduate TAs in a course with an enrollment of 272
- Developed homework assignments, weekly discussions, exams, and rubrics

Sep. 2022 - Dec. 2022

Guest Lecturer

CS 274E: Deep Generative Models, UC Irvine.

- Created and taught lecture on diffusion generative models

Nov. 2022, Nov. 2023

Private Tutor

Jul. 2019 - Present

Machine learning, mathematics, and statistics

- Perfect (5.0/5.0) rating across more than 300 hours of tutoring and 200 reviews
- Supervised research projects ranging from the high school level to the Ph.D. level

Mathematics Tutor and Peer Coordinator

Jan. 2017 - June 2019

Penn State Learning

- Tutored undergraduate mathematics courses in one-on-one and small group settings.
- Designed and led exam review sessions with more than 200 students in attendance.
- Managed a team of more than 60 undergraduate tutors. Interviewed applicants, trained and supervised new hires.

## Publications

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\* denotes joint authorship

### Conference

1. **G. Kerrigan**, G. Migliorini, P. Smyth, 'Functional Flow Matching,' *International Conference on AI and Statistics (AISTATS)*, 2024 (**Oral Presentation**).
2. **G. Kerrigan**, J. Ley, P. Smyth, 'Diffusion Generative Models in Infinite Dimensions,' *International Conference on AI and Statistics (AISTATS)*, 2023.
3. **G. Kerrigan**, P. Smyth, and M. Steyvers, 'Combining Human Predictions with Model Probabilities via Confusion Matrices and Calibration,' *Advances in Neural Information Processing Systems 34 (NeurIPS 2021)*, pp.4421–4434, 2021.

### Journal

4. M. Steyvers, H. Tejada, **G. Kerrigan**, P. Smyth, 'Bayesian Modeling of Human-AI Complementarity,' *Proceedings of the National Academy of Sciences*, 19(11):1-7, March 2022.

### Workshop

5. **G. Kerrigan\***, D. Slack\*, J. Tuyls\*, 'Differentially Private Language Models Benefit from Public Pre-Training,' *PrivateNLP: EMNLP Workshop on Privacy and Natural Language Processing*, pp.39-45, 2020.
6. **G. Kerrigan**, G. Migliorini, P. Smyth, 'Functional Flow Matching,' *NeurIPS Workshop on Diffusion Models*, 2023.

### Under Review

7. **G. Kerrigan**, G. Migliorini, P. Smyth, 'Dynamic Conditional Optimal Transport through Simulation-Free Flows,' *Under review*, arXiv:2404.04240, April 2024.

8. P. Srivastava, R. Yang, **G. Kerrigan**, G. Dresdner, J. McGibbon, C. Bretherton, S. Mandt, 'Precipitation Downscaling with Spatiotemporal Video Diffusion,' *Under review*, *arXiv:2312.06071*, December 2023.

## Honors and Awards

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### University of California, Irvine

Hasso Plattner Institute Fellowship	2021 - 2024
Graduate Dean's Recruitment Fellowship	2019

### The Pennsylvania State University

Steven and Sherry McCrystal Mathematics Award	2019
Mary Lister McCammon Scholarship	2017, 2018
Phi Beta Kappa Honors Society	2017
Hay Memorial Scholarship	2016
Mahle Trustee Scholarship in Science	2015

## Invited Talks

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Functional Flow Matching	May 2024
The 27th International Conference on AI and Statistics (AISTATS)	
Deep Generative Models in Infinite-Dimensional Spaces	
Center for Machine Learning Seminar, UC Irvine.	Jan. 2024
Probability and Combinatorics Seminar, UC Irvine.	Nov. 2023
AMLab Seminar, University of Amsterdam.	Nov. 2023
A Tutorial on Diffusion Generative Models	
Hasso Plattner Institute	Sep. 2023

## Service

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Workflow Chair	
The 27th International Conference on AI and Statistics (AISTATS)	2024
Academic Reviewing	
JMLR, ICLR, CVPR, ICML, UAI	2024

NeurIPS, AISTATS, Workshop on Deep Generative Models for Health, Workshop on Topology, Algebra, and Geometry in Data Science, Workshop on Diffusion Models	2023
ICML, Workshop on Geometrical and Topological Representation Learning, Workshop on Human-Machine Collaboration and Teaming	2022
Workshop on Uncertainty in Deep Learning	2020