

Justin Le

 justinle@utexas.edu

 Personal Website

 LinkedIn

 GitHub

Interests

Machine learning (neural networks), dynamical systems, statistics, and stochastic modeling

Employment History

2025 – Present	Teaching Assistant , University of Texas at Austin
2024 – 2024	Instructional Assistant / Grader , Arizona State University
2022 – 2023	Instructor , Mathnasium

Education

2025 – 2030	Ph.D, University of Texas at Austin , Mathematics
2024 – 2025	M.A, Arizona State University , Mathematics GPA: 4.0/4.0
2021 – 2024	B.S, Arizona State University , Mathematics (Honors) Thesis title: <i>Diffusion Models to Alleviate Class Imbalance</i> GPA: 4.0/4.0

Publications

- 1 J. Le, "Generative modeling with diffusion," *SIAM Undergraduate Research Online*, vol. 18, pp. 213–229, Jun. 2025.  DOI: 10.1137/24S1717993.
- 2 F. Cao, K. Johnston, T. Laurent, J. Le, and S. Motsch, *Generative diffusion models from a pde perspective*, **submitted**. arXiv: 2501.17054.

Talks and Presentations

October 2025	"Neural Operators for Learning Mappings Between Function Spaces" UT Austin Junior Analysis Seminar
November 2024	"Diffusion Models to Alleviate Class Imbalance" ASU Undergraduate Honors Thesis Defense

Research Experience

2022 – 2025	Undergraduate Research Assistant , Arizona State University Advisor: Dr. Sébastien Motsch
	<ul style="list-style-type: none">– First project: Designed, trained, and evaluated convolutional neural networks for semantic segmentation on a dataset of slime mold laboratory images. Computed the geometry of slime mold samples with the results from segmentation.– Second project: Designed, trained, and evaluated diffusion models for synthesizing data. This synthetic data was then applied to a dataset of credit card transactions to improve a classifier's detection of credit card fraud.

Teaching Experience

2025 – Present	Teaching Assistant , University of Texas at Austin Real Analysis I Real Analysis II Integral Calculus (two sections)	Spring 2026 Spring 2026 Fall 2025
2024 – 2024	Instructional Assistant , Arizona State University Mathematics for Business Analysis Calculus for Engineers II (two sections) Mathematics for Business Analysis (two sections) Discrete Mathematical Structures	Fall 2024 Summer 2024 Summer 2024 Spring 2024

Awards

- 2024 **Dean's Medal (Arizona State University)** – Awarded to one graduating student in the mathematics/statistics department each semester to recognize academic achievement.
- Moeur Award (Arizona State University)** – Awarded to graduating students who maintain a 4.0 GPA throughout their undergrad.

Outreach and Service

- 2025-2026 Organized the Sophex seminar at UT Austin. This is a weekly seminar that allows first year math PhD students to practice giving talks.
- 2025 Mentored for the Directed Reading Program at UT Austin. I mentored Felix You on Statistical Inference using the textbook by Casella & Berger. This program culminated in Felix presenting on the Lehmann-Scheffé theorem.

Skills

- Programming Python, C/C++, Java, MATLAB, SQL, L^AT_EX
- Data Science PyTorch, Matplotlib, Pandas, MySQL
- Computer Bash (Linux), Git, PyCharm, VSCode