# 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: *Diffusion Models to Alleviate Class Imbalance*
**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.

## Research Experience

2022 – 2025 **Undergraduate Research Assistant**, Arizona State University
Mentor: Dr. Sebastien Motsch

- 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
Integral Calculus Fall 2025

## Teaching Experience (continued)

2024 – 2024 **Instructional Assistant**, Arizona State University

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| Mathematics for Business Analysis | Fall 2024 |
| Calculus for Engineers II (two sections) | Summer 2024 |
| Mathematics for Business Analysis (two sections) | Summer 2024 |
| Discrete Mathematical Structures | 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.

## Skills

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| Programming | Python, C/C++, Java, MATLAB, SQL, LaTeX |
| Data Science | PyTorch, Matplotlib, Pandas, MySQL |
| Computer | Bash (Linux), Git, PyCharm, VSCode |