

Henry Smith

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OVERVIEW

PhD candidate in Statistics at Stanford (Knight-Hennessy Scholar, NSF Fellow) specializing in generative modeling and scalable Bayesian inference for time series data. My research aims to advance state-of-the-art generative models—including diffusion models, normalizing flows, and autoregressive language models—with applications to computational protein design and neuroscience.

EDUCATION

Stanford University, Palo Alto, CA

2023 -

Ph.D., Statistics

Advisors: [Scott Linderman](#) and [Brian Trippe](#)

Relevant Coursework: stochastic processes, probabilistic machine learning, information theory, theoretical statistics, probability theory

Yale University, New Haven, CT

2018 - 2022

B.S., Statistics & Data Science, Mathematics

summa cum laude

Thesis: “Implicit Regularization in Deep Learning: The Kernel and Rich Regimes”

Advisor: Harrison Zhou

WORK EXPERIENCE

Research Assistant (full-time)

Oct 2022 - Oct 2023

University of Cambridge, Department of Computer Science & Technology

Cambridge, UK

Advisor: [Amanda Prorok](#)

- Mathematically formalized and programmed geometric deep learning algorithms to enable close proximity flight of aerial drones (e.g., for search and rescue tasks); validated in simulation and real-world experiments

Student Research Assistant

Jun 2021 - Jun 2023

Cornell University, Department of Mathematics

Ithaca, NY

Advisors: [Alex Townsend](#), [Nicolas Boullé](#)

- Developed mathematically interpretable deep learning algorithms for the unsupervised discovery of linear partial differential equations (PDEs)

AWARDS & HONORS

Departmental Teaching Award¹ | *Stanford Department of Statistics*

Jun 2025

Knight-Hennessy Scholarship² | *Stanford University* | \$300,000

May 2024

Graduate Research Fellowship | *National Science Foundation (NSF)* | \$147,000

Sep 2023

EDGE (Enhancing Diversity in Graduate Education) Fellowship | *Stanford University* | \$12,800

Sep 2023

Outstanding Senior Thesis Award in Statistics & Data Science³ | *Yale University*

May 2022

¹Remarks from students and faculty: “extremely conscientious, proactive, and well prepared”; “the strongest TA in 10 years”

²Full-ride scholarship for graduate studies at Stanford; scholars selected on the basis of independence of thought, purposeful leadership, and civic mindset; 89 scholars selected from ~8000 applicants

³One of two graduating seniors selected to receive the award by the Statistics & Data Science department faculty

Emerson Tuttle Cup ⁴ <i>Yale University</i>	May 2022
Phi Beta Kappa <i>Yale University</i>	Feb 2022
Research Experience for Undergraduates (REU) <i>National Science Foundation (NSF)</i> \$5,000	Jun 2021
Google Summer of Code Fellowship <i>Google</i> \$6,000	May 2020
Richter Summer Research Fellowship <i>Yale University</i> \$1,000	May 2020

PUBLICATIONS

- [1] **H. Smith**, N. Diamant, B. Trippe. Calibrating generative models. *arXiv preprint arXiv:2510.10020*, 2025.
- [2] A. Hu*, **H. Smith***, S. Linderman. SING: SDE inference via natural gradients. *Advances in Neural Information Processing Systems (NeurIPS)*, 2025.
- [3] **H. Smith**, A. Shankar, J. Gielis, J. Blumenkamp, A. Prorok. SO(2)-equivariant downwash models for close proximity flight, *Robotics and Automation Letters (RA-L)*, IEEE, 2024.

* denotes equal contribution

PRESENTATIONS

- [1] Calibrating Generative Models. *International Conference on Machine Learning (ICML) Generative AI and Biology Workshop*, 2025. [\[Spotlight\]](#) (10% of accepted submissions selected for talk)

TEACHING

Teaching Assistant:

STATS 315: Modern Applied Statistics, Learning <i>Stanford University</i>	Winter 2025
STATS 202: Statistical Learning and Data Science [Head Teaching Assistant] <i>Stanford University</i>	Fall 2024
STATS 60: Introduction to Statistics <i>Stanford University</i>	Spring 2024
S&DS 365/665: Intermediate Machine Learning <i>Yale University</i>	Spring 2022
S&DS 262/562: Computational Tools for Data Science <i>Yale University</i>	Spring 2021
S&DS 100/500: Introduction to Statistics <i>Yale University</i>	Fall 2019

SERVICE

Stanford Women and Allies in Statistics Member, Event Organizer	Fall 2023 -
Reviewer, <i>International Conference on Learning Representations (ICLR)</i>	2025
Stanford Department of Statistics Qualifying Exam Reader	Summer 2025
Reviewer, <i>Learning for Dynamics and Control Conference (L4DC)</i>	2024

TECHNICAL SKILLS

Languages: Python, R, C, MATLAB, SQL
Frameworks: JAX, PyTorch, TensorFlow
Research tools: Git, Linux/HPC, Docker, SLURM
Open-source contributions: Developer of **cgm** (<https://github.com/smithhenryd/cgm>) and **sing** (<https://github.com/lindermanlab/sing>) repositories

⁴Presented annually at Commencement to the Davenport College senior most distinguished for scholastic attainments; there were approximately 130 students in the graduating class