Henry Smith

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Education

Stanford University, Palo Alto, CA 2023 –
Ph.D., Statistics
Knight-Hennessy Scholar
Research Interests: trustworthy and data-efficient machine learning, optimization

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

Awards & Honors

Knight-Hennessy Scholarship[1] | *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 Science[2] | *Yale University*	May 2022
Emerson Tuttle Cup[3] | *Yale University*	May 2022
Phi Beta Kappa | *Yale University*	Feb 2022
Research Experience for Undergraduates (REU) | *National Science Foundation (NSF)* | $5,000	Jun 2021
Google Summer of Code Fellowship | *Google* | $6,000	May 2020
Richter Summer Fellowship | *Yale University* | $1,000	May 2020

Research 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 implemented machine learning algorithms that enabled aerial drones to fly in close proximity of one another (ex. for search and rescue tasks); particular focus on geometric deep learning models

Student Research Assistant Jun 2021 – Jun 2023
Cornell University, Department of Mathematics *Ithaca, NY*
Advisors: Alex Townsend, Nicolas Boullé

- Developed mathematically interpretable machine learning models for linear/nonlinear partial differential equations

Student Research Assistant May 2020 – Sep 2020
University of California, Los Angeles, Department of Communication *Los Angeles, CA*
Advisor: Jungseock Joo

- Leveraged generalized linear models (GLMs) to understand how U.S. politicians appeal to subgroups of voters

[1] Full-ride scholarship for graduate studies at Stanford; scholars selected on the basis of independence of thought, purposeful leadership, and civic mindset; 100 scholars selected from ∼8000 applicants

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

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

Publications

[1] **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. [arXiv]

Teaching

Teaching Assistant:

STATS 60: Introduction to Statistics | *Stanford University* — Spring 2024

S&DS 365/665: Intermediate Machine Learning | *Yale University* — Spring 2022

S&DS 262/562: Computational Tools for Data Science | *Yale University* — Spring 2021

S&DS 100/500: Introduction to Statistics | *Yale University* — Fall 2019

Service

Stanford Women and Allies in Statistics | Member, Event Organizer — Fall 2023 –

Technical Skills

Languages: Python, R, C, MATLAB, SQL
Libraries: PyTorch, TensorFlow