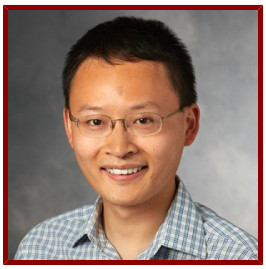
Stanford



James Zou

Associate Professor of Biomedical Data Science and, by courtesy, of Computer Science and of Electrical Engineering

Department of Biomedical Data Science

Bio

BIO

I am an Associate Professor of Biomedical Data Science and, by courtesy, of Computer Science and Electrical Engineering at Stanford University.
I work on making AImore reliable, human-compatible and statistically rigorous, and am especially interested in applications in human disease and health. I received my Ph.D from Harvard in 2014, and was at one time a member of Microsoft Research, a Gates Scholar at Cambridge and a Simons fellow at U.C. Berkeley. I joined Stanford in 2016 and am excited to also be a Chan-Zuckerberg Investigator. We are also a part of the Stanford AI Lab.
My research is supported by two Chan-Zuckerberg Biohub Investigator Awards, the Sloan Fellowship, the NSF CAREER Award, a Top Ten Clinical Achievement Award and faculty awards from Google, Adobe and Amazon.

ACADEMIC APPOINTMENTS

- Associate Professor, Department of Biomedical Data Science
- Associate Professor (By courtesy), Computer Science
- Associate Professor (By courtesy), Electrical Engineering
- Member, Bio-X
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)
- Member, Stanford Cancer Institute
- Member, Wu Tsai Neurosciences Institute

HONORS AND AWARDS

- Chan-Zuckerberg Investigator, CZ Biohub (2023)
- Sloan Research Fellowship, Sloan Foundation (2021)
- NSF CAREER Award, NSF (2020)
- RECOMB Best Paper, RECOMB (2019)
- Google Faculty Award, Google (2018)
- Chan-Zuckerberg Investigator, CZ Biohub (2017)
- Simons Research Fellow, Simons Foundation (2014)
- NSF GRFP, NSF (2008)
- Gates-Cambridge Scholar, Gates Foundation (2007)

LINKS

- My website: https://www.james-zou.com/

- Twitter: https://twitter.com/james_y_zou

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My group works on both foundations of statistical machine learning and applications in biomedicine and healthcare. We develop new technologies that make ML more accountable to humans, more reliable/robust and reveals core scientific insights.

We want our ML to be impactful and beneficial, and as such, we are deeply motivated by transformative applications in biotech and health. We collaborate with and advise many academic and industry groups.

Teaching

COURSES

2026-27

- Deep Learning in Genomics and Biomedicine: BMDS 273, CS 273B, GENE 236 (Spr)
- Workshop in Biomedical Data Science: BMDS 280C, STATS 260C (Spr)

2025-26

- Deep Learning in Genomics and Biomedicine: BMDS 273, CS 273B, GENE 236 (Spr)
- Foundation Models for Healthcare: BMDS 271, CS 277, RAD 271 (Win)

2024-25

- Foundation Models for Healthcare: BIODS 271, CS 277, RAD 271 (Spr)

2023-24

- Biomedical Data Science Student Seminar: BIODS 201, BIOMEDIN 201 (Win)
- Critical Exploration of Topics in Biomedical Data Science: Generative AI: BIODS 290 (Aut)
- Deep Learning in Genomics and Biomedicine: BIODS 237, CS 273B (Spr)
- Foundation Models for Healthcare: BIODS 271, CS 277, RAD 271 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Hannah Kleidermacher

Postdoctoral Faculty Sponsor

Siyu He

Doctoral Dissertation Advisor (AC)

Joseph Boen, Bowen Chen, Batu El, Yixing Jiang, Alan Mao, Andrew Shen, Jake Silberg, Rahul Thapa, Harrison Zhang

Master's Program Advisor

Shyam Sai Bethina, Andrew Gao, Jen Ha, Eric Liu, Ryan Park, Serena Pei, Rohan Sikand, Aditi Somayajula, Jessy Song, David Tung, Justin Wu, Yutong Wu, Luke Zhao

Doctoral Dissertation Co-Advisor (AC)

Zijian (Carl) Ma

Undergraduate Major Advisor

Nikhiya Shamsher

Doctoral (Program)

Samuel Alber, Jake Chang, Peter Eckmann, Karen Feng, Arushi Gupta, Owen Queen, Nitya Thakkar, Haotian Ye, Wanjia Zhao

Publications

PUBLICATIONS

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- **How medical AI devices are evaluated: limitations and recommendations from an analysis of FDA approvals.** *Nature medicine*
  Wu, E., Wu, K., Daneshjou, R., Ouyang, D., Ho, D. E., Zou, J.
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- **Making AI Forget You: Data Deletion in Machine Learning**
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  edited by Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
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- **Ensuring that biomedical AI benefits diverse populations.** *EBioMedicine*
  Zou, J., Schiebinger, L.
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  Tang, S., Ghorbani, A., Yamashita, R., Rehman, S., Dunnmon, J. A., Zou, J., Rubin, D. L.

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- **How to evaluate deep learning for cancer diagnostics - factors and recommendations.** *Biochimica et biophysica acta. Reviews on cancer*
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- **TrueImage: A Machine Learning Algorithm to Improve the Quality of Telehealth Photos.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Vodrahalli, K., Daneshjou, R., Novoa, R. A., Chiou, A., Ko, J. M., Zou, J.
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  Ouyang, D., Zou, J.
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- **Deep learning interpretation of echocardiograms.** *NPJ digital medicine*
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- **Contrastive Multivariate Singular Spectrum Analysis**
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- **Contingent Payment Mechanisms for Resource Utilization**
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- **Embedding for Informative Missingness: Deep Learning With Incomplete Data**
  Ghorbani, A., Zou, J. Y., IEEE
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