Kevin Wu

PhD Candidate · Stanford University

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Education

Stanford University — *Stanford, CA*

Ph.D. Biomedical Data Science — *09/2020 - present*

- Advisor: James Zou & Daniel E. Ho

Harvard University — *Cambridge, MA*

M.Eng. Computational Science and Engineering — *08/2016 - 05/2018*

- Advisors: Gabriel Kreiman & David Cox

Duke University — *Durham, NC*

B.A. Statistics — *08/2011 - 05/2015*

Publications

In Review

1. Kevin Wu*, Eric Wu*, Ally Cassasola, Angela Zhang, Kevin Wei, Teresa Nguyen, Sith Riantawan, Patricia Shi Riantawan, Daniel E Ho, James Zou. *How well do LLMs cite relevant medical references? An evaluation framework and analyses.* 2024.

2. Angela Zhang*, Kevin Wu*, Joshua Guild, Mert Yuksekgonul, Eric Wu, Joseph C. Wu, James Zou. *Elucidating the Mechanisms of Gender and Racial Bias of Large Language Models in Clinical Management of Cardiovascular Disease, Pain, and Cancer Screening and Treatment*. 2024.

3. Andy Zhou, Kevin Wu, Yi Zeng, Yu Yang, Shuang Yang, Sanmi Koyejo, James Zou, Bo Li. *AutoRedTeamer: Automated and Adaptive Red Teaming Agent against Language Models*. 2024.

Published

1. Kevin Wu*, Eric Wu*, and James Zou. *ClashEval: Quantifying the tug-of-war between an LLM's internal prior and external evidence.* **NeurIPS Datasets and Benchmark Track**, 2024.

12. Kevin Wu, Eric Wu, Kit Rodolfa, Daniel E Ho, James Zou. *Regulating AI Adaptation: An Analysis of AI Medical Device Updates.* Conference on Health, Inference, and Learning (**CHIL**), 2024.

3. Kevin Wu, Eric Wu, Brandon Theodorou, Weixin Liang, Christina Mack, Lucas Glass, Jimeng Sun, James Zou. *Characterizing the clinical adoption of medical AI devices through US insurance claims.* **New England Journal of Medicine AI**, 2024.

4. Yongchan Kwon*, Eric Wu*, Kevin Wu*, James Zou. *Datainf: Efficiently estimating data influence in LoRA-tuned LLMs and diffusion models.* **ICLR**, 2023.

5. Kevin Wu, Dominik Dahlem, Christopher Hane, Eran Halperin, James Zou. *Collecting data when missingness is unknown: a method for improving model performance given under-reporting in patient populations*, Conference on Health, Inference, and Learning (**CHIL**), 2023.

6. Kevin Wu, Lucas Rodrigues, Gerald Post, Garrett Harvey, Michelle White, Aubrey Miller, Lindsay Lambert, Benjamin Lewis, Christina Lopes, James Zou. *Analyses of canine cancer mutations and treatment outcomes using real-world clinico-genomics data of 2119 dogs*, **npj Precision Oncology**, 2023.

7. Kevin Wu, Eric Wu, Michael DAndrea, Nandini Chitale, Melody Lim, Marek Dabrowski, Klaudia Kantor, Hanoor Rangi, Ruishan Liu, Marius Garmhausen, Navdeep Pal, Chris Harbron, Shemra Rizzo, Ryan Copping, James Zou. *Machine learning prediction of clinical trial operational efficiency*, **AAPSJ**, 2022.

8. Kevin Wu*, Eric Wu*, James Zou. *Explaining medical AI performance disparities across sites with confounder Shapley value analysis*, **ML4H**, 2021.

9. Eric Wu, Kevin Wu, Roxana Daneshjou, David Ouyang, Daniel E Ho, James Zou. *How medical AI devices are evaluated: limitations and recommendations from an analysis of FDA approvals*, **Nature Medicine**, 2021.

10. William Lotter, Abdul Rahman Diab, Bryan Haslam, Jiye G Kim, Giorgia Grisot, Eric Wu, Kevin Wu, Jorge Onieva Onieva, Yun Boyer, Jerrold L Boxerman, Meiyun Wang, Mack Bandler, Gopal R Vijayaraghavan, A Gregory Sorensen, *Robust breast cancer detection in mammography and digital breast tomosynthesis using an annotation-efficient deep learning approach*, **Nature Medicine**, 2021.

12. Kevin Wu, Eric Wu, Yaping Wu, Hongna Tan, Greg Sorensen, Meiyun Wang, Bill Lotter, *Validation of a deep learning mammography model in a population with low screening rates*, **NeurIPS Fair ML for Health Workshop**, 2019.

13. Kevin Wu, Eric Wu, Gabriel Kreiman. *Learning scene gist with convolutional neural networks to improve object recognition*, Annual Conference on Information Sciences and Systems (**CISS**), 2018.

14. Eric Wu, Kevin Wu, David Cox, William Lotter, *Conditional infilling GANs for data augmentation in mammogram classification*, **MICCAI Workshop**, 2018.

14. Brett Walenz, Y Wu, S Song, Emre Sonmez, Eric Wu, Kevin Wu, Pankaj K Agarwal, Jun Yang, Naeemul Hassan, Afroza Sultana, Gensheng Zhang, Chengkai Li, Cong Yu. *Finding, monitoring, and checking claims computationally based on structured data*, **Computation+ Journalism Symposium**, 2014.

Professional Experience

2021 - present	**Research Scientist**, FidoCure (Part-Time)
2021 - present	**Instructor**, UpLimit (Part-Time)
2022 - 2023	**Graduate Research Intern**, Optum Labs (United Healthcare)
2018 - 2020	**Machine Learning Engineer**, DeepHealth, Acq. by RadNet, Inc in 2020
2017 - 2017	**Intern**, Waymo
2015 - 2016	**Product Manager**, Microsoft

Awards, Fellowships, & Grants

2022 - 2024	**Stanford Data Science Fellowship**, Stanford University	*PhD funding*
2024	**Stanford HAI GCP Grant**, Data attribution and design for large language models	*$ 20,000*
2023	**Stanford HAI GCP Grant**, Learning multi-modal, multi-disease representations of medical images	*$ 20,000*

Presentations

Invited Talks

Summer 2024. *How medical AI are evaluated, deployed, and updated*. Invited talk: Towards Reliable, Valid, and Safe Systems for Biomedical Data Science, JSM 2024, Portland, OR.

Winter 2023. *Regulating Medical AI*. Invited Talk: AI & Health Regulatory Policy Conference, MIT Jameel Clinic.

Oral Presentations

Collecting data when missingness is unknown: a method for improving model performance given under-reporting in patient populations. CHIL 2023.

Concordance between dogs and humans: The use of AI in evaluating clinical cancer genomic datasets. AACR 2021.

Teaching Experience

Winter 2023	**BIOMEDIN 202: Biomedical Data Science**, Teaching Assistant	*Stanford*
Spring 2022	**CS 235: Biomedical Image Analysis and Interpretation**, Teaching Assistant	*Stanford*
Winter 2018	**CS 109b: Introduction to Data Science**, Teaching Fellow	*Harvard*
Winter 2027	**CS 207: Systems Development for Computational Science**, Teaching Fellow	*Harvard*
Spring 2015	**CS 290L: Everything Data**, Undergraduate Teaching Assistant	*Duke*