

## RESEARCH INTERESTS

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I research the impact of AI on equity in healthcare. To date, my work has focused on analyzing and mitigating the downstream impact of differences in clinical decision-making across patient subpopulations on the performance and fairness of AI models for clinical decision support.

## EDUCATION

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### University of Michigan

Ph.D. Candidate in Computer Science & Engineering, GPA: 4.00

Advisor: Jenna Wiens

Ann Arbor, MI

2021–present

### Stanford University

M.S. in Computer Science—Artificial Intelligence track, GPA: 4.05

Stanford, CA

2020–2021

### Stanford University

B.A. in American Studies, *with distinction* & Phi Beta Kappa, GPA: 3.98

Stanford, CA

2016–2020

## PUBLICATIONS & PREPRINTS

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- [P1] **T. Chang**, M. Nuppnau, Y. He, K. Kocher, T. S. Valley, M. W. Sjoding, and J. Wiens, “Racial differences in laboratory testing as a mechanism for bias amplification for AI models in healthcare: the emergency department as a case study”, in preparation.
- [P2] **T. Chang** and J. Wiens, “Mitigating the Effects of Disparate Censorship on Downstream Machine Learning Models: An Expectation-Maximization Approach”, in preparation.
- [P3] E. A. Chi, A. Paranjape, A. See, C. Chiam, **T. Chang**, K. Kenealy, S. K. Lim, A. Hardy, C. Rastogi, H. Li, A. Iyabor, Y. He, H. Sowrirajan, P. Qi, K. R. Sadagopan, N. Minh Phu, D. Soylu, J. Tang, A. Narayan, G. Campagna, and C. Manning, “Neural generation meets real people: Building a social, informative open-domain dialogue agent”, in *Proceedings of the 23rd Annual Meeting of the Special Interest Group on Discourse and Dialogue*, Association for Computational Linguistics, Sep. 2022.
- [P4] **T. Chang**, M. W. Sjoding, and J. Wiens, “Disparate Censorship: A Plausible, Underexplored Mechanism for Model Performance Gaps in Clinical Machine Learning”, in *7th Machine Learning for Healthcare Conference*, Proceedings of Machine Learning Research, Aug. 2022.
- [P5] **T. Chang** and D. Y. Fu, “Lost in Transmission: On the Impact of Networking Corruptions on Video Machine Learning Models”, Jun. 2022. arXiv: 2206.05252 [cs.CV].
- [P6] E. A. Chi, C. Chiam, **T. Chang**, S. K. Lim, C. Rastogi, A. Iyabor, Y. He, H. Sowrirajan, A. Narayan, J. Tang, H. Li, A. Paranjape, and C. D. Manning, “Neural, neural everywhere: Controlled generation meets scaffolded, structured dialogue”, in *Alexa Prize Socialbot Grand Challenge 4 Proceedings*, Jul. 2021.
- [P7] **T. Chang**, D. Y. Fu, Y. Li, and C. Ré, “Beyond the Pixels: Exploring the Effect of Video File Corruptions on Model Performance”, in *2020 European Conference in Computer Vision, Workshop on Adversarial Robustness in the Real World*, Aug. 2020.

## PRESS APPEARANCES & MEDIA OUTREACH

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- [Med1] C. Ross, B. Trang, and M. Aguilar, “What does generative AI mean for health care? We asked the experts”, *STAT+*, May 2023.
- [Med2] T. Render, “Decisive Differences in Healthcare AI”, *Discover Rackham*, Oct. 2022.
- [Med3] Michigan AI Lab [[@michigan.AI](#)], “AI, Healthcare, and Humanities with Trenton Chang”, Aug. 2022.

## PRESENTATIONS & TALKS

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- [T1] **T. Chang**, “Disparate censorship: A plausible, underexplored mechanism for model performance gaps in clinical machine learning”, in *Michigan AI Symposium*, Dec. 2022.
- [T2] **T. Chang** and D. Ganelin, “Machine learning bias in criminal justice”, in *Computer Science Teachers of America Conference*, Jul. 2021.

## TEACHING & MENTORING

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- Workshop Organizer, Discover Engineering, University of Michigan (2023)
  - Recruited 9 volunteer instructors and designed workshop introducing high school students to computer science and an interactive exploration of the limitations and capabilities of ChatGPT, reaching 4 cohorts of approx. 10 students each.
- Workshop Organizer, Xplore Engineering: “How do Computers Think?”, University of Michigan (2023)
  - Recruited 12 volunteer instructors and designed workshop introducing 4th - 7th grade students to computer science and an activity analyzing the robustness of image classification models, reaching 6 cohorts of approx. 10 students each.
- Volunteer Instructor, AI4ALL, University of Michigan (2022)
  - Co-taught project on  $n$ -gram based text generation and sentiment analysis to 9 high school students.
- Research Mentor, ACM Stanford (2021)
  - Advised two undergraduate students’ accepted submission to the Google Big-Bench benchmark of tasks for evaluating large language models.
- Instructor, Inspirit AI (2020, 2021)
  - Wrote and taught project on the usage of AI in criminal justice decisions for high school students.
- Residential Counselor, Artificial Intelligence Course, Stanford Pre-Collegiate Studies (2019)
  - Mentored projects in AI ranging from computer vision to price prediction for 2 cohorts of approx. 15 students each.

## SERVICE

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- Panelist, Summer Research Opportunity Program, University of Michigan (2023)
- University Relations Chair, Computer Science & Engineering Graduate Student Organization, University of Michigan (2023-present)
- Reviewer, KDD epiDAMIK 2023, MLHC 2023, NeurIPS ML4H 2022, MLHC 2022, **NeurIPS Research2Clinics 2021 (best reviewer award)**
- AI Lab Graduate Admissions Committee Volunteer, Department of Computer Science & Engineering, University of Michigan (2022)

## AWARDS

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- Team 2nd Prize (Stanford Chirpy Cardinal), Alexa Socialbot Grand Challenge (2021)