Jacob M. Chen

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Education

- **Johns Hopkins University**, Baltimore, MD　　　　　　　　　　　　　　　July 2024 – Present
  M.S. and Ph.D. in Computer Science; Advised by Dr. Ilya Shpitser.
- **Williams College**, Williamstown, MA　　　　　　　　　　　　　　　Sept. 2019 – Dec. 2023
  B.A. Major in Computer Science & Concentration in French and Francophone Studies
  - Thesis in Computer Science: *Causal Inference with Outcome-Dependent Missingness And Self-Censoring*;
    Advised by Dr. Rohit Bhattacharya
  - *Magna Cum Laude* and *Phi Beta Kappa*

Publications

1. **Jacob M. Chen**, Michael Oberst, "Just Trial Once: Ongoing Causal Validation of Machine Learning Models".
   - Link to manuscript: `https://arxiv.org/abs/2502.09467`
   - Accompanying code: `https://github.com/jacobmchen/just_trial_once`
2. **Jacob M. Chen**, Rohit Bhattacharya, Katherine A. Keith, "Proximal Causal Inference with Text Data," in
   Advances in Neural Information Processing Systems 37 (NeurIPS 2024).
   - Link to manuscript: `https://proceedings.neurips.cc/paper_files/paper/2024/hash/f53a37f82`
     `0d5be5930415d964f4a0187-Abstract-Conference.html`
   - Accompanying code: `https://github.com/jacobmchen/proximal_w_text`
3. Julie Joss, **Jacob M. Chen**, Nicolas Prost, Gaël Varoquaux, Erwan Scornet, "On the consistency of supervised
   learning with missing values," in Statistical Papers, 2024.
   - Link to manuscript: `https://link.springer.com/article/10.1007/s00362-024-01550-4`
   - Accompanying code: `https://github.com/jacobmchen/supervised_missing`
4. **Jacob M. Chen**, Daniel Malinsky, Rohit Bhattacharya, "Causal Inference with Outcome-Dependent Missingness
   and Self-Censoring," in Proceedings of the 39th Conference on Uncertainty in Artificial Intelligence (UAI), 2023
   - Acceptance rate 243/778=31.2%. Chosen for a poster spotlight presentation (32/243=13.2%).
   - Link to manuscript: `https://proceedings.mlr.press/v216/chen23f.html`
   - Accompanying code: `https://github.com/jacobmchen/mnar-recoverability`

Research Interests

- Causal Inference, Missing Data, Graphical Models, Machine Learning, Applications in Healthcare and the Social
  Sciences, Computer Science Education

Teaching Experience

Residential Teaching Fellow, Phillips Exeter Academy, Exeter, NH　　　　　　　June – Aug. 2022
- Utilized Harkness pedagogy (discussion and project-based learning) to instruct high school students in three
  courses – Introduction to Computer Science, Mobile App Development, and Game Programming – at a boarding
  summer school program. I also served as a dorm faculty for boarding high school boys where I provided guidance
  on navigating the program academically and socially.

Teaching Assistant in Computer Science Department, Williams College　　　　Feb. 2021 – May 2023
- Data Structures & Advanced Programming (Spring '21), Algorithm Design & Analysis (Spring '22), Introduction
  to Computer Science (Fall '21, Fall '22, & Spring '23)

Lanesborough Elementary School Teaching Fellow, Lanesborough, MA　　　　Jan. 2022 – May 2023
- Assisted in a 4th grade classroom with math and science courses and a kindergarten classroom with an English as
  a second language student. Gave a presentation introducing Taiwan and its culture to elementary school students.

Teacher for AP Computer Science, Nuts Institute, Hsinchu, Taiwan　　　　　July 2020 – Jan. 2021
- Taught fundamentals of Java to high school students with no previous programming experience in preparation for
  the AP Computer Science A exam. Prepared my own class materials and lesson plans.

Presentations & Talks

1. **Jacob M. Chen**, Rohit Bhattacharya, and Katherine A. Keith. "Proximal Causal Inference with Text Data." Poster presentation at Advances in Neural Information Processing Systems 38 (NeurIPS 2024), Vancouver, Canada, December 2024.
2. **Jacob M. Chen** and Michael Oberst. "Generalizable Randomized Trial Designs for Machine Learning Tools in Healthcare." Poster presentation at the 2024 Johns Hopkins Research Symposium on Engineering in Healthcare, Baltimore, MD, December 2024.
3. **Jacob M. Chen**, Rohit Bhattacharya, and Katherine A. Keith. "Proximal Causal Inference with Text Data." Poster presentation at the American Causal Inference Conference (ACIC), Seattle, WA, May 2024.
4. **Jacob M. Chen**, Daniel Malinsky, and Rohit Bhattacharya. "Causal Inference with Outcome Dependent Missingness and Self-Censoring." Poster spotlight talk at Uncertainty in Artificial Intelligence (UAI), Pittsburgh, PA, July 31 - August 4, 2023.
5. **Jacob M. Chen**. "Causal Inference with Outcome Depending Missingness and Self-Censoring." Thesis presentation and defense before the computer science department at Williams College, Williamstown, MA, May 2023.
6. **Jacob M. Chen**, Daniel Malinsky, and Rohit Bhattacharya. "Causal Inference with Outcome Dependent Missingness and Self-Censoring." Poster presentation at the American Causal Inference Conference (ACIC), Austin, TX, May 2023.
7. **Jacob M. Chen** and Rohit Bhattacharya. "On Covariate Adjustment in Missing Not at Random Models." Poster presentation at the American Causal Inference Conference (ACIC), Berkeley, CA, May 2022.

Honors & Awards

- *Finalist for the CRA Undergraduate Research Award*, Computing Research Association (CRA), 2024
- *Sam Goldberg Prize*, Williams College, 2023; Awarded for the best thesis presentation in computer science.
- *Sigma Xi Society*, Williams College, 2023; Inducted into the Sigma Xi Society for excellence in research.
- *Dean's List*, Williams College, 2019-2023

Professional Activities and Services

- *Reviewer*, 41st Conference on Uncertainty in Artificial Intelligence (UAI), 2025.
- *Reviewer*, 40th Conference on Uncertainty in Artificial Intelligence (UAI), 2024.

Work Experience

Software Engineer, Seknova Biotechnology Co., Taiwan   June – Aug. 2019
- Designed and developed independently Windows graphical user interface tools in Java and developed an Android App for an external blood glucose monitoring device.

Community Service

Crisis Text Line, Remote   Feb. 2021 – July 2024
- Crisis Text Line provides free, 24/7 support for people in crisis via a medium people already use and trust: text.

Skills & Language

- English – Fluent, Mandarin – Fluent, French – Intermediate (B1), Japanese – Basic
- Python and R (common programming languages in Computer Science and Biostatistics) for Machine Learning & Causal Inference
- Computer: Android Java App Development, Python, Java, C