Yufeng Wu

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EDUCATION

Williams College August 2020 - May 2024
B.A. in Computer Science and Economics *Williamstown, MA*

- GPA: 4.0/4.0
- Thesis: "Causal Inference With Contagion and Latent Homophily Under Full Interference" advised by Prof. Rohit Bhattacharya [paper][defense]
- Honors: *Valedictorian*, *Summa Cum Laude* (top 2% of class), and Highest Honors in Computer Science

PUBLICATIONS

* indicates equal contribution.

[P2] **Yufeng Wu**, Rohit Bhattacharya. Network Causal Effect Estimation In Graphical Models Of Contagion And Latent Confounding. Under preparation to *4th Conference on Causal Learning and Reasoning (CLeaR)*.

[P1] Divij Jain*, Saatvik Kher*, Lena Liang*, **Yufeng Wu***, Ashley Zheng*, Xizhen Cai, Anna Plantinga, Elizabeth Upton. Improving and Evaluating Machine Learning Methods for Forensic Shoeprint Matching. Submitted to *Journal of the Royal Statistical Society Series C: Applied Statistics* (Status: major revision required). *Preprint* at arxiv.org/pdf/2405.14878.

RESEARCH EXPERIENCE

Computer Science Thesis in Causal Inference [arXiv][poster][oral] August 2023 - May 2024
Thesis Student (Advisor: Rohit Bhattacharya) *Williams College*

- Created a novel causal effect estimation method for non-i.i.d. social network data, enabling analysis of real-world studies previously considered infeasible.
- Designed a causal discovery algorithm for non-i.i.d. network data to verify assumptions required by our causal estimation method, providing a data-driven approach for assumption verification.
- Evaluated the effectiveness of our methods with synthetic data and real-world networks.
- Selected to give an oral presentation (68/268 = 25.4%) at the 2024 American Causal Inference Conference (ACIC) and submitted a conference paper [P2].

SMALL REU in Statistics [arXiv][poster][web App] Summer 2023
Research Assistant (Advisors: Xizhen Cai, Anna Plantinga, Elizabeth Upton) *Williams College*

- Evaluated the out-of-distribution generalizability of machine learning methods for shoeprint matching.
- Explored reasons behind distribution shifts by visualizing training and testing distributions on key model features and improved model robustness through data augmentation.
- Developed a visualization tool to explain model decisions in classifying shoeprint pairs as matches or non-matches, enhancing model transparency and trustworthiness. Submitted a journal paper [P1].

Independent Research in Causal Machine Learning [technical report] January 2023 - June 2023
Research Assistant (Advisor: Rohit Bhattacharya) *Williams College*

- Conducted extensive literature review on domain adaptation, robustness, and transfer learning through the framework of causality and graphical models.
- Developed a method to identify stable components of a Generalized Additive Model under distribution shifts.

Summer Research in Computer Architecture [poster] Summer 2022
Research Assistant (Advisor: Kelly Shaw) *Williams College*

- Built experimentation pipelines and conducted data analysis to identify hardware stress points during the execution of graph mining algorithms on large-scale networks (e.g. Facebook social graph).

WORK EXPERIENCE

Charles River Associates June 2024 - Present
Analyst (Antitrust & Competition Economics practice) *Chicago, IL*

- Conduct market competition analysis in the fashion industry using large-scale sales data.
- Create visualizations to simplify complex analyses into client deliverables to support litigation arguments.

TALKS & PRESENTATIONS

* indicates equal contribution.

1. Oral presentation (selection rate: 68/268 = 25.4%) at the American Causal Inference Conference (ACIC), Seattle, WA, May 2024.

   Yufeng Wu and Rohit Bhattacharya. "Causal Inference With Contagion and Latent Homophily Under Full Interference." [slides]

2. Poster presentation at the American Causal Inference Conference (ACIC), Seattle, WA, May 2024.

   Yufeng Wu and Rohit Bhattacharya. "Causal Inference With Contagion and Latent Homophily Under Full Interference." [poster]

3. Thesis presentation and defense, Williams College, MA, May 2023.

   Yufeng Wu and Rohit Bhattacharya. "Causal Inference With Contagion and Latent Homophily Under Full Interference." [slides]

4. Poster presentation at the New England Statistical Society (NESS)–NextGen Data Science Day, University of Connecticut, CT, October 2023.

   Divij Jain*, Saatvik Kher*, Lena Liang*, **Yufeng Wu***, Ashley Zheng*, Xizhen Cai, Anna Plantinga, Elizabeth Upton. "Evaluating Machine Learning Methods for Shoeprint Matching." [poster]

5. Poster presentation at Williams Summer Research Fair, Williams College, MA, 2022.

   Chris Brown*, Sam Chistolini*, Fatima-zohra Guettabi*, Emma Neil*, Kelsey Richter*, **Yufeng Wu***, Kelly Shaw. "Workload Characterization of Graph Algorithms." [poster]

HONORS & AWARDS

1. *Valedictorian*, Williams College, 2024
2. *Summa Cum Laude* (top 2% of class), Williams College, 2024
3. *Sigma Xi Soceity*, Williams College, 2024; Inducted into the Sigma Xi Soceity for excellence in research.
4. *Phi Beta Kappa* National Honor Society Junior Year Inductee (top 5% of class), Williams College, 2023
5. *Best Poster*, New England Statistical Society (NESS)–NextGen Data Science Day Poster Competition, Connecticut, 2023
6. *Dean's List* for all semesters, Williams College, 2020-2024

MENTORSHIP & TEACHING EXPERIENCE

Williams College Computer Science Department February 2022 - December 2022
Teaching Assistant

· Data Structures & Advanced Programming (Spring '22), Introduction to Computer Science (Fall '22)

Williams College Underrepresented Identities in CS August 2022 - June 2024
Board Member

· Co-led a mentorship program pairing first-year CS students with upperclassmen and alumni, provided training for both mentors and mentees, and personally advised 6 mentees on career and research opportunities.

PoKe Project Incubator June 2022 - Present
Founder, Instructor *Remote*

· Led original project-based learning workshops and mentored 16 students in developing passion projects.
· Example: Guided a student in experimenting with AI-assisted design techniques, now creating an AI-themed fashion show at their high school to showcase their work.

PEAK English Nonprofit May 2020 - May 2022
Founder, Instructor *Remote*

· Created 20 educational videos for English learners in China, reaching over 1,800 followers and 190,000 views.

China World Academy STEM Department August 2020 - June 2021
Instructor *Suzhou, China*

· Prepared my own lecture materials to teach Python to high school students with no prior coding experience.

PROJECTS

1. Distilling Large Language Models (LLMs) for Twitter Sentiment Analysis (2023) [paper]
2. Deep Learning for Video Popularity Prediction (2023) [paper]
3. Impact of Chinese Infrastructure Aid on Education in Kenya: A Causal Analysis (2023) [paper]
4. UWC Islandr (an event-management web app created for my high school, 2020) [GitHub]

SKILLS & LANGUAGE

- English (fluent), Mandarin (fluent)
- Python: Machine Learning, Causal Inference, Visualization, Web Scraping, Web Development
- Other Skills: Java, C, C++, R, STATA