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Maggie **Wang**

Education

2021 - **Stanford University**, Stanford, CA
PhD Biomedical Data Science
Advisor: Dr. Michael Baiocchi

2017 - 2021 **Johns Hopkins University**, Baltimore, MD
BS Biomedical Engineering, BS Computer Science (double major)

Research Experience

2022 - **Stanford University**, Stanford, CA
PhD student, supervised by Dr. Michael Baiocchi
Developing methods in experimental design for evaluating complex behavioral interventions, such as sexual assault prevention and machine learning-based clinical decision support. [P2, P1, W1]

2021 - 2022 **Stanford University**, Stanford, CA
PhD student (rotation), supervised by Dr. James Zou and Dr. Jonathan Chen
Designed and conducted a user study to demonstrate how concept bottleneck models can be edited to improve performance on out-of-distribution data [J2]. Conducted an observational study using national health claims data to reveal gaps in nephrology care for high-risk patients with chronic kidney disease [J3].

2018 - 2021 **Johns Hopkins University**, Baltimore, MD
Undergraduate researcher, supervised by Dr. Michael Miller
Developed surface registration methods for modeling hippocampus thickness. Applied regression methods to model the relationship between brain atrophy and genetic indicators in Huntington's disease [J1].

2018 - 2021 **École Normale Supérieure, Paris-Saclay**, Cachan, France
Summer research intern, supervised by Dr. Alain Trouvé
Adapted the "surface registration via currents" algorithm to construct flattened hippocampus thickness maps. Used these maps to visualize hippocampal thinning in patients with Alzheimer's disease.

2018 **Canary Center for Early Cancer Detection**, Stanford, CA
Summer research intern, supervised by Dr. Sharon Hori
Used machine learning to identify aggressive cancer from longitudinal blood biomarker trajectories [P3].

2017 - 2018 **Johns Hopkins University**, Baltimore, MD
"ProgKnowsis" design team member, supervised by Dr. Raimond Winslow
Developed a sparse dictionary representation learning algorithm that computes a predictive risk score for pediatric acute respiratory distress syndrome.

Publications

Journal & Conference Papers

[J1] Chin-Fu Liu, Laurent Younes, Xiao Tong, Jared T. Hinkle, **Maggie Wang**, et al. "Longitudinal Imaging Highlights Preferential Basal Ganglia Circuit Atrophy in Huntington's Disease". *Brain Communications* (2023). DOI: 10.1093/braincomms/fcad214.

[J2] Mert Yuksekgonul, **Maggie Wang**, and James Zou. "Post-hoc Concept Bottleneck Models". *ICLR* (2023). arXiv: 2205.15480.

[J3] **Maggie Wang***, Samson Peter*, Chi Chu, Delphine Tuot, and Jonathan Chen. "Underutilization of Nephrology Referral at High Kidney Failure Risk Levels". *JAMA Network Open* (2022). DOI: 10.1001/jamanetworkopen.2022.25797.

Preprints

[W1] René Kizilcec **Maggie Wang** and Michael Baiocchi. "Inspection-guided Randomization: A Flexible and Transparent Restricted Randomization Framework for Better Experimental Design". *arXiv* (2024).

Posters & Invited Talks

[P1] René Kizilcec **Maggie Wang** and Michael Baiocchi. "Inspection-guided Randomization: A Flexible and Transparent Restricted Randomization Framework for Better Experimental Design". *American Causal Inference Conference* (2024).

[P2] **Maggie Wang** and Michael Baiocchi. "Designing Randomized Experiments for Behavioral Interventions Under Interference and Context-Dependence". *Stanford Causal Science Conference* (2023).

[P3] **Maggie Wang**, Sam Gambhir, and Sharon Hori. "Early Detection of Aggressive Cancer Using Longitudinal Biomarker Measurements". *Early Detection of Cancer Conference* (2018).

Awards & Honors

2023 **National Science Foundation Graduate Research Fellowship**
5-year fellowship with three years of financial support awarded to roughly 2,500 graduate students in STEM

2021 **Stanford Graduate Fellowship, Smith Fellow**
3-year support awarded to roughly 100 outstanding Stanford graduate students in science and engineering

2020 **Tau Beta Pi Engineering Honor Society**
Membership granted to top eighth of juniors at Johns Hopkins majoring in an engineering discipline

2019 **Alpha Eta Mu Beta Biomedical Engineering Honor Society**
Membership granted to top fifth of juniors at Johns Hopkins majoring in biomedical engineering

2019 **Provost's Undergraduate Research Award**
$3000 funding awarded to 40 Johns Hopkins undergraduates to conduct independent research

2019 **Vredenburg Travel Scholarship**
$8000 funding awarded to 10 Johns Hopkins undergraduates to pursue research abroad

2017 **Hodson Trust Scholarship**
4-year merit-based scholarship awarded to 20 Johns Hopkins undergraduates covering half-tuition

Teaching Experience

Fall 2023 **Graduate Teaching Assistant**, BIOMEDIN 215: Data Science for Medicine, Stanford University
Fall 2022 **Graduate Teaching Assistant**, BIOMEDIN 215: Data Science for Medicine, Stanford University
Fall 2020 **Undergraduate Teaching Assistant**, EN.601.433: Introduction to Algorithms, Johns Hopkins University
Fall 2019 **Undergraduate Teaching Assistant**, EN.580.243: Linear Signals and Systems, Johns Hopkins University

Leadership & Mentorship Experience

2023 - present **Mentor**, Stanford Biosciences NSF Graduate Research Fellowship Peer-to-Peer Mentoring Program
Stanford University
Mentored an applicant for the 2024 NSF GRFP cycle, providing multiple rounds of feedback on their personal statement and research statement.

2021 - present **Mentor & Organizer**, Stanford Biomedical Data Science Peer-to-Peer Application Mentoring Program
Stanford University
Provided feedback on essay drafts for prospective MS and PhD applicants who identified as underrepresented minorities. Organized mentor recruitment and mentor-mentee matchings (2022-2023).

2022 - 2023 **Vice President**, InterVarsity Graduate Christian Fellowship
Stanford University
Planned themes and speakers for general body meetings, organized and led musical worship, planned New Student Orientation events.

2022 **Mentor**, Community College Outreach Program Bootcamp
Stanford University
Met weekly in a virtual small group format with community college students seeking to transfer into 4-year programs. Provided advice on essays, internships, and resumes.

2020 - 2021 **Mentor**, Women Mentoring Whiting
Johns Hopkins University
Met bi-weekly with mentee to offer guidance on navigating college as a woman in engineering.