SARAH JABBOUR

Ph.D. Candidate
Computer Science and Engineering
University of Michigan

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RESEARCH INTERESTS

My research lies at the intersection of computer vision, human-computer interaction, and healthcare. I aim to develop AI tools for high stakes settings, with a broader focus on model generalizability and explainability.
Topics: Machine Learning, Computer Vision, Human-Computer Interaction

EDUCATION

University of Michigan, College of Engineering   *Ann Arbor, MI, USA*
Ph.D. Candidate in Computer Science and Engineering (CSE)   Sep 2020–Present
GPA: 4.0/4.0
Advisors: Prof. Jenna Wiens, Prof. David Fouhey

University of Michigan, College of Engineering   *Ann Arbor, MI, USA*
Bachelors of Science in Engineering   Sep 2016–May 2019
GPA: 3.81/4.0, Summa Cum Laude

University of Michigan, Ross School of Business   *Ann Arbor, MI, USA*
Bachelors of Business Administration   Sep 2014–May 2019
GPA: 3.81/4.0, Summa Cum Laude

PEER-REVIEWED PUBLICATIONS

1. **Sarah Jabbour**, Gregory Kondas, Ella A. Kazerooni, Michael W. Sjoding, David Fouhey*, Jenna Wiens*. "DEPICT: Diffusion Enabled Permutation Importance for Image Classification Tasks." *Under Review.* 2024. *Co-senior authors of equal contribution.

2. **Sarah Jabbour**, David Fouhey, Stephanie Shepard, Thomas S. Valley, Ella A. Kazerooni, Nikola Banovic, Jenna Wiens*, Michael W. Sjoding*. "Measuring the Impact of AI in the Diagnosis of Hospitalized Patients: A Randomized Survey Vignette Multicenter Study." *Journal of the American Medical Association (JAMA).* 2023. *Co-senior authors of equal contribution. (4.6% acceptance rate)

3. Jiaxuan Wang, **Sarah Jabbour**, Maggie Makar, Michael W. Sjoding, Jenna Wiens. "Learning Concept Credible Models for Mitigating Shortcuts." *NeurIPS.* 2022.

4. **Sarah Jabbour**, David Fouhey, Ella Kazerooni, Jenna Wiens, Michael W. Sjoding. "Combining chest X-rays and electronic health record (EHR) data using machine learning to diagnose acute respiratory failure." *Journal of the American Medical Informatics Association (JAMIA).* 2022.

5. Emily Mu, **Sarah Jabbour**, Adrian V. Dalca, John Guttag, Jenna Wiens, Michael W. Sjoding. "Augmenting existing deterioration indices with chest radiographs to predict clinical deterioration." *Plos One.* 2022.

6. **Sarah Jabbour***, Kayte Spector-Bagdady*, Shengpu Tang*, W. Nicholson Price II, Ana Bracic, Melissa S. Creary, Sachin Kheterpal, Chad M. Brummett, Jenna Wiens. "Respecting Autonomy and Enabling Diversity: The Effect of Eligibility and Enrollment on Research Data Demographics." *Health Affairs.* 2021. *Co-first authors of equal contribution.

7. **Sarah Jabbour**, David Fouhey, Ella Kazerooni, Michael W. Sjoding, Jenna Wiens. "Deep Learning Applied to Chest X-Rays: Exploiting and Preventing Shortcuts." *Machine Learning for Healthcare (MLHC)*. 2020.

INVITED TALKS

1. "AI for Clinical Diagnostic Decision Making: Can Explainability be a Back-Stop Against Biased AI?" Invited talk at Vineet Raghu's group meeting, Massachusetts General and Harvard Medical. April 2024.

2. "AI for Clinical Diagnostic Decision Making: Can Explainability be a Back-Stop Against Biased AI?" Invited talk at Merharry Medical College. April 2024.

3. "AI for Clinical Diagnostic Decision Making: Can Explainability be a Back-Stop Against Biased AI?" Invited talk at Lebanese American University. March 2024.

4. "AI for Clinical Diagnostic Decision Making: Can Explainability be a Back-Stop Against Biased AI?" Guest Lecture at MIT EECS 6.S977 (Instructor: Marzyeh Ghassemi). March 2024.

5. "AI for Clinical Diagnostic Decision Making: Can Explainability be a Back-Stop Against Biased AI?" Invited talk at Michigan Integrated Center for Health Analytics & Medical Prediction. February 2024.

6. "Developing AI Tools for the Diagnosis of Hospitalized Patients: Can Clinicians Make Up for AI Shortcomings?" Invited talk at University of Michigan 7th Summer School on Computational Interaction. June 2023.

7. "Machine Learning for Aiding Clinicians in Diagnosing Acute Cardiopulmonary Conditions." Invited talk at University of Michigan EECS 183: Elementary Programming Concepts. March 2022.

8. "A Robust Multi-Modal Approach to Diagnosing Acute Cardiopulmonary Conditions." Invited talk at University of Michigan EECS 183: Elementary Programming Concepts. October 2019.

POSTER PRESENTATIONS

1. Sarah Jabbour. "Measuring the Impact of AI in the Diagnosis of Hospitalized Patients: A Randomized Survey Vignette Multicenter Study." *Michigan AI Symposium*. October 2023.

2. Sarah Jabbour. "Deep Learning Applied to Chest X-rays: Exploiting and Preventing Shortcuts." *Michigan AI Symposium*. October 2021.

3. Sarah Jabbour. "Deep Learning Applied to Chest X-rays: Exploiting and Preventing Shortcuts." *Michigan AI Symposium*. October 2020.

4. Sarah Jabbour. "A Robust Multi-Modal Approach to Diagnosing Acute Cardiopulmonary Conditions." *Center for Healthcare Engineering and Patient Safety (CHEPS)*. November 2019.

5. Sarah Jabbour. "A Robust Multi-Modal Approach to Diagnosing Acute Cardiopulmonary Conditions." *Michigan Institute for Data Science (MIDAS) Symposium*. November 2019.

6. Sarah Jabbour. "A Robust Multi-Modal Approach to Diagnosing Acute Cardiopulmonary Conditions." *Michigan AI Symposium*. November 2019.

AWARDS AND HONORS

1. 2nd-Place Presentation in Graduate Student Honors Competition; University of Michigan CSE; 2023

2. HACKS Spirit Award: *aims to recognize the student who most embodies the HACKS Values within the CSE Community*; University of Michigan CSE; 2023

3. Top Reviewer: AISTATS 2023

EMPLOYMENT

Machine Learning for Data Driven Decisions Lab *Ann Arbor, MI, USA*
Research Assistant for Dr. Jenna Wiens May 2019–Sep 2020

Developed multi-modal machine learning models based on chest X-rays and electronic health record data to aid clinicians in diagnosing patients with acute cardiopulmonary conditions.

NIKE Inc. *Portland, OR, USA*
Software Engineering Intern May 2018–Sep 2018

Developed data visualization desktop application in Electron using JavaScript and HTML for technologies used by NIKE to enable architects to make informed technology investment and divestment decisions using application visuals.

Ross School of Business *Ann Arbor, MI, USA*
Research Assistant for Dr. Mohamed Mostagir Jun 2017–Jun 2018

Created MATLAB simulations for learning in networks under a Bayesian inference model to understand how learning happens in networks with changing distributions combined with varying popularity of network agents.

Avfuel Corporation *Ann Arbor, MI, USA*
Marketing Intern Jun 2016–Sep 2016

Researched customer service and sales techniques to implement online customer service and sales training, resulting in aviation-specific online training modules to help Avfuel branded fixed base operators increase customer satisfaction rates.

TEACHING

EECS 442: Computer Vision *Ann Arbor, MI, USA*
Graduate Student Instructor. Guest Lectures: (1) Neural Networks, (2) Diffusion. Sep 2023-Dec 2023

TO 502: Applied Business Statistics *Ann Arbor, MI, USA*
Lead TA for Dr. Mohamed Mostagir in MBA course at the Ross School of Business. Sep 2017-Dec 2020

TO 301: Business Analytics and Statistics *Ann Arbor, MI, USA*
TA for Dr. Mohamed Mostagir in BBA course at the Ross School of Business. Sep 2016–Dec 2016

PROFESSIONAL SERVICE, ACTIVITIES, AND VOLUNTEERING

Reviewer
CVPR 2023, ECCV 2023, AAAI 2023 (meta reviewer), AISTATS 2023 (top reviewer), AISTATS 2022, ML4H 2022, MLHC 2022, AAAI TAIH 2022, NeurIPS 2021, MLHC 2021, ICLR 2021, AAAI 2021, TAIH 2021, MLHC 2020

ML4H Organizer Dec 2023
Organized research roundtables for ML4H symposium co-located with NeurIPS.

Grad School Demystified Nov 2023
Visited Florida International University to present on the University of Michigan CSE graduate program and discuss with prospective students.

Graduate Student Panel
Graduate Student Visit Day Mar 2022
Introduction to Graduate Studies Sep 2021
Explore Graduate Studies Oct 2021

AI4ALL Teaching Volunteer Jul 2021, Jul 2022

Taught introduction to computer science and artificial intelligence to cohort of 30 high school students.

Lunch and Lab with a Grad Mentor Program Volunteer Jan 2020, Jan 2021

Met with undergraduate students to discuss questions regarding graduate school and its application process.

Michigan AI Symposium Poster Session Organizer Oct 2021

Organized Michigan AI Symposium poster session with 50+ posters and 200+ attendees.

Graduate Admissions Committee Dec 2021

Aided the University of Michigan Computer Science and Engineering Department in reviewing graduate student applications.

Mentor Dec 2021

Mentor for Give Merit, Inc. Nonprofit Arm of Merit Goodness, Inc. in Detroit, MI.
Lead group discussions for tenth and eleventh grade students, teaching them communication, problem solving, and thought organization skills useful for future professional and academic settings.

TECHNICAL SKILLS

Programming Languages: Python, SQL, C++, R

LANGUAGES

Native: English, Arabic