

# Meric Altug Gemalmaz, Ph.D.

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## RESEARCH INTERESTS

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Human-AI Interaction, Crowdsourcing and Human Computation, Applied AI, Fairness

## EDUCATION

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### Purdue University, West Lafayette, Indiana

- Ph.D. in Computer Science **3.96/4.0** Jan. 2020 – June 2025
- M.S. in Computer Science (Transferred to Ph.D.) **3.93/4.0** Jan. 2019 – Dec. 2019
- B.S. in Computer Science (Software Engineering Track, **Distinction**) **3.92/4.0** Aug. 2015 – Dec. 2018

## SKILLS

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**Programming Languages:** Python, C/C++, C#, JavaScript, Java, HTML/CSS, R, Bash

**Machine Learning Tools:** scikit-learn, GSL, NumPy, Pandas

**Tools & Platforms:** Git, Meteor.js, MongoDB, MTurk, Android SDK, Firebase, GDB

**Soft Skills:** Leadership, Teamwork, Time Management, Problem-Solving, Adaptability, Communication

## PUBLICATIONS

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**[P1] Meric Altug Gemalmaz**, Ming Yin. “Understanding Decision Subjects’ Fairness Perceptions and Retention in Repeated Interactions with AI-Based Decision Systems.” *Proceedings of the 5th AAAI/ACM Conference on AI, Ethics, and Society (AIES)*, Oxford, UK, Aug. 2022.

**[P2] Meric Altug Gemalmaz**, Ming Yin. “Accounting for Confirmation Bias in Crowdsourced Label Aggregation.” *Proceedings of the 30th International Joint Conference on Artificial Intelligence (IJCAI)*, Online, Aug. 2021.

**[P3] Meric Altug Gemalmaz**. “Fairness in the Machine Learning Pipeline: A Human-in-the-Loop Perspective.” *Ph.D. Dissertation, Department of Computer Science, Purdue University, West Lafayette, Indiana, USA*, June 2025.

## WORK INCLUDED IN PH.D. DISSERTATION

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**[W1] Meric Altug Gemalmaz**, Ming Yin. “An Investigation of Decision Subjects’ Interaction With Periodically Updated ML-Based Task Allocations.” (See Chapter 5)

**[W2] Meric Altug Gemalmaz**, Ming Yin. “Understanding Decision Subjects’ Engagement with and Perceived Fairness of AI Models When Opportunities of Qualification Improvement Exist.” *arXiv:2410.03126* (See Chapter 4)

## RESEARCH EXPERIENCE

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### Human-subject Experiments

Jan. 2020 – May 2025

- Coordinated **1,500+** human participants across **4+** research projects on **MTurk** for data collection and analysis.
- Developed and deployed web applications using **JavaScript** and the **Meteor.js** framework, managed back-end databases with **MongoDB**, and implemented front-end interfaces using **HTML** and **CSS**.
- Increased participant engagement and facilitated high-quality data collection by implementing interactive, scenario-based user interfaces, while ensuring robustness against bot attacks through effective security measures.

### Exploring Fairness in Algorithmic Management [W1]

Dec. 2023 – May 2025

- Collaborated with gig workers to explore their long-term behavior toward AI-driven gig assignments with varying levels of fairness, aiming to encourage AI developers to make more responsible and inclusive design choices.

### Understanding Decision Subjects’ Fairness Perceptions and Engagement [W2, P1]

Mar. 2021 – Dec. 2023

- Conducted human-subject experiments to examine how loan applicants’ repeated interactions with an AI-based loan approval system affect their fairness perceptions and willingness to continue engaging with the AI.
- Simulated loan applicants’ AI interactions with a **Markov Decision Process** to estimate proper human-subject experiment parameters, then collected data to analyze real human-AI interactions with **regression analysis** to understand human behavior.
- Discovered a critical fairness issue: similar AI usage across demographics often hides unfairness, as people continue using biased models out of necessity, not fairness. This persistence challenges developers to rethink usage as a measure of model fairness.

### Data Bias Mitigation Algorithm [P2]

Mar. 2020 – Mar. 2021

- Leveraged advanced unsupervised learning techniques to detect and mitigate cognitive bias in crowdsourced data annotations.
- Utilized **probabilistic graphical models** to model annotator bias and used the **Expectation-Maximization algorithm** to infer ground-truth annotations.
- Achieved over **10% increase** in inferred label accuracy over existing baselines through reduction in annotation bias.

## SELECT COURSES

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**Graduate Courses:** Data Mining (A), Algorithm Design, Analysis, And Implementation (A+), Statistical Machine Learning (A-), Simulation And Modeling Of Computer Systems (A), Operating Systems (A)

**Undergraduate Courses:** Software Engr Senior Project (A), Software Engineering I (A), Object-Oriented Programming (A), Programming In C (A+), Foundations Of Computer Science (A-)

## TEACHING EXPERIENCE

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### Graduate Teaching Assistant, Purdue University

Jan. 2019 – May 2025

- **Courses:** Data Mining (2 semesters), Systems Programming (4 semesters), Computer Architecture (3 semesters).
- Led lab sections each semester for **50+** students, supervised **10+** undergraduate TAs, collaborated with GTAs to develop teaching materials, and managed administrative responsibilities.
- Received excellent teaching evaluations (avg. **4.5/5.0**) and awarded multiple teaching awards for leadership, communication, and adaptability.
- **Guest lecturer** on Human-Computer Interaction; Lecture on AI Ethics and Fairness
- **Guest lecturer** on Systems Programming; Lecture on Implementation of a Concurrent Web Server

### Undergraduate Teaching Assistant, Purdue University

Jan. 2018 – Dec. 2018

- **Courses:** Systems Programming (2 semesters), Operating Systems (1 semester).
- Supported lab sessions, provided individualized student support, and collaborated on grading assignments.
- Developed scripts in **Bash** to streamline the evaluation process.

## HONORS AND AWARDS

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### The Graduate Teaching Award

Nov. 2022

- Recognized for exceptional teaching and leadership in graduate level Data Mining course. Awarded based on positive feedback from faculty and students, highlighting approachability, support, and ability to clarify complex concepts.

### Raymond Boyce Graduate Teaching Award

Apr. 2020

- Honored for outstanding contributions to the Computer Architecture course. Received recognition on a permanent plaque in the Lawson Computer Science Building.

### Graduated with Distinction, B.S. in Computer Science

Dec. 2018

- Awarded to the top **10%** of undergraduate Computer Science students, recognizing exceptional academic performance with a GPA ranking in the 90th percentile of the graduating class.

### Dean's List and Semester Honors (8 Semesters)

Aug. 2015 – Dec. 2018

- Placed consistently on the Dean's List and received Semester Honors during all semesters of the CS undergraduate program.

## REVIEWER

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### Conference Reviewer; \*Outstanding Reviewer Recognition

ACM CHI: 2024\*

### Program Committee Member

ACM IUI: 2025

## REFERENCES

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### Prof. Ming Yin

Computer Science, Purdue University  
Areas: Human-AI Interaction, Crowdsourcing  
mingyin@purdue.edu

### Prof. Dan Goldwasser

Computer Science, Purdue University  
Areas: NLP, Large Language Models, Machine Learning  
dgoldwas@purdue.edu

### Prof. Sooyeon Jeong

Computer Science, Purdue University  
Areas: Human-Robot Interaction, Social Robotics  
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### Prof. Chris Clifton

Computer Science, Purdue University  
Areas: Data Privacy, Data Mining, Database Systems  
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