Meric Altug Gemalmaz

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OBJECTIVE: Seeking Software Engineering roles starting May 2025.

EDUCATION

Purdue University, West Lafayette, Indiana
- Ph.D. in Computer Science **3.96/4.0** — Jan 2020 – Present
- 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

Programming Languages: Python, C/C++, C#, JavaScript, Java, HTML/CSS, R, Bash
Machine Learning Tools: scikit-learn, NumPy, Pandas
Tools & Platforms: Git, Meteor.js, MongoDB, MTurk, Android SDK, Firebase

EXPERIENCE

Human-subject Experiments, Purdue — Jan. 2020 – Present
- 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**.
- Delivered **90%** participant satisfaction and **80%** bot attack robustness by designing scenario-based, interactive UIs with robust security measures.

Exploring Fairness in Algorithmic Management, Purdue — Dec. 2023 – Present
- Collaborating 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.

Fairness and Loan Applicant Engagement in AI Decisions, Purdue [P1,W1] — 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, Purdue [P2] — Mar. 2020 – Mar. 2021
- Leveraged 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.

TEACHING EXPERIENCE

Graduate Teaching Assistant: Data Mining, Systems Programming, Computer Architecture — Jan. 2019 – Present
- Led lab sections each semester for **50+** students and supervised **10+** undergraduate TAs.
- Served as a **guest lecturer** on implementing a concurrent web server and AI Ethics and Fairness, collaborated with GTAs to develop teaching materials, and managed administrative responsibilities.
- Enhanced student learning outcomes, earning top teaching evaluations and multiple teaching awards for leadership, communication, and adaptability.

Undergraduate Teaching Assistant: Operating Systems, Systems Programming — Jan. 2018 – Dec. 2018

HONORS AND AWARDS

Recipient of the Graduate Teaching Award, Purdue — 2022
Recipient of the Raymond Boyce Graduate Teaching Award, Purdue — 2020
Dean's List and Semester Honors (**8 Semesters**), Purdue — Aug. 2015 – Dec. 2018

SELECTED PAPERS

[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, August 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, August 2021.

[W1] 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 (Under Review)*