Meric Altug Gemalmaz

mgemalma@purdue.edu gemalmaz.org linkedin.com/in/agem github.com/mgemalma

Seeking Software/ML Engineering roles starting May 2025.

EDUCATION

Purdue University, West Lafayette, Indiana

- Ph.D. in Computer Science (Human-AI Interaction Focused) **3.96/4.0** — Jan. 2020 – May 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

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

EXPERIENCE

Web App Development for Data Collection, 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.

Fairness in AI-Driven Gig Work: User-Centric Insights, Purdue — Dec. 2023 – Present

- Initiated a collaborative study with gig workers to examine the long-term impact of AI-driven gig assignments at varying fairness levels, providing actionable insights for fairer algorithmic job management practices.

Design Implications of Fairness in Human-AI Interactions, Purdue [P1, P3] — Mar. 2021 – Dec. 2023

- Conducted **six** human-subject experiments to examine how loan applicants' repeated interactions with an AI-based loan approval system impact applicants' perceptions of fairness and willingness to continue engaging with the AI.
- Simulated **1,000** loan applicant interactions using a **Markov Decision Process** in **Python** to estimate experiment parameters; collected real-world data and applied **regression analysis** in **R** to uncover key human-AI interaction trends.
- Founded crucial fairness insights, including a critical issue: over **75%** of users continue using biased models out of necessity rather than perceived fairness, urging developers to rethink usage metrics as indicators 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.
- Applied **probabilistic graphical models** and the **Expectation-Maximization** algorithm using the **GSL** library in **C** to reduce annotator bias, improving label accuracy across **100** simulated and **12** real-world tasks.
- Achieved over **10%** increase in inferred label accuracy over existing baselines through reduction in annotation bias.

TEACHING EXPERIENCE

Graduate Teaching Assistant (GTA): Data Mining, Systems Programming, Computer Architecture — Jan. 2019 – Present

- Led lab sections each semester for **50+** students and supervised **10+** undergraduate TAs.
- Delivered **guest lectures** on web server implementation and AI ethics; collaborated with GTAs to develop teaching materials (**scikit-learn**, **NumPy**, **Pandas**) and streamlined grading with **Bash** scripts for **80+** students.
- Fostered student learning, achieving top evaluations (avg. **4.5/5.0**) and receiving **2** teaching/leadership awards.

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

HONORS AND AWARDS

Recipient of the Graduate Teaching Award, Purdue — Nov. 2022
Recipient of the Raymond Boyce Graduate Teaching Award, Purdue — Apr. 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, 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, Ming Yin. "Understanding Decision Subjects' Engagement with and Perceived Fairness of AI Models When Opportunities of Qualification Improvement Exist." *arXiv:2410.03126* (**Under Review**)