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## SUMMARY

Results-driven practitioner with expertise in applied cognitive science and human factors. Focused on improving safety, usability, and system performance in complex environments. Skilled in AI integration, user behavior analysis, workflow optimization, and usability evaluation across healthcare and autonomous systems.

## RECENT EXPERIENCES

### *Research Fellow Trainee*

Vanderbilt University Medical Center | 2025 – Present

- Project Management
- Project focus: Patient Perspective on Artificial Intelligence and Medical Chatbot

### *Postdoctoral Researcher*

Perelman School of Medicine, University of Pennsylvania | 2024 – 2025

- Workflow analysis of OR-to-ICU handoffs
- Facilitating collaboration between the Contextual Inquiry team and the Implementation team
- Mentored students on human-centered design and data collection techniques

## AWARDS & CERTIFICATIONS

- Doctoral Finishing Fellowship, Michigan Technological University | 2023
- 3rd Place, Computing[MTU] Poster Session | 2022
- Graduate Certificate, AI in Healthcare, Michigan Technological University | 2021
- Penn Implementation Science Institute, University of Pennsylvania | 2024

## POSTGRADUATE EDUCATION

- Ph.D. Applied Cognitive Science & Human Factors

Michigan Technological University, Houghton, MI | 2019 – 2023

Dissertation: Investigating Collaborative Explainable AI (CXAI)/Social Forum in Autonomous Driving

Advisor: Dr. Shane T. Mueller

- M.S. Applied Cognitive Science & Human Factors

Michigan Technological University | 2019 – 2021

Thesis: The Impact of Online Human Collaboration in the Explanation of AI Systems

## PRACTICUMS

### Defense Advanced Research Projects Agency (DARPA) - XAI Project

*Institute for Human and Machine Cognition* | 2020

- Advanced explainable AI system development in collaboration with Dr. Robert Hoffman

### Rail Crossing Violation Warning Application Project

*Center for Human-Centered Computing, Michigan Tech* | 2021

- Usability evaluation of rail crossing systems for the Federal Railroad Administration
- Led behavioral analysis of drivers in rail crossings and system usability assessment

## TOOLS/METHODS

*Technical:* R, Python, C, PHP, Java, C++, Ruby, PEBL (**Git:** [GitHub](https://github.com/tmamun012) - <https://github.com/tmamun012>)

*Research:* Cognitive Task Analysis, Usability Evaluation, Contextual Inquiry, Computational Modeling

*Development:* R libraries for data management, XAI system

*Project Management:* Scrum, Agile

## FEATURED LEADERSHIP ROLES

- Vice President, Bangladeshi Student Association, Michigan Technological University | 2020 – 2021
- Vice President, Ahsanullah University Computer Science & Engineering Society | 2014 – 2015
- President, Notre Dame Nature Study Club (Photography Department) | 2009 – 2010

## INTERESTS

[Photography](#) | App Development | Video and Photo Editing