FARHAT TASNIM PROGGA

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I am a Ph.D. candidate (ABD) in Computer Science specializing in Human-Computer Interaction (HCI), with expertise in social computing, user research, and data analytics. My work bridges technical rigor and human-centered inquiry, exploring how data-driven systems and storytelling can support equitable and impactful digital experiences. Through fellowships and recognitions for my research in data science and storytelling, I have developed a track record of advancing both scholarly knowledge and applied solutions. I am seeking opportunities to collaborate on projects in social computing, data-driven technologies, and user-centered design that contribute to both academic innovation and societal impact.

RESEARCH FOCUS

Human - Computer Interaction | Data Analysis | Data Analytics | Human - Centered Machine Learning | Social Computing

EDUCATION

Marquette University   **Milwaukee, WI**
PhD Candidate in Computer Science, CGPA: 3.96   *August 2021 - Present*
- **Arthur J. Schmitt Leadership Fellowship** 2025-26 recipient.
- **Deans Research Enhancement Award** 2025 & 2024 recipient.
- **Computer Science Summer Research Fellowship** 2023 recipient.
- **Relevant Courses:** Advanced Machine Learning, Data Analytics, Data Ethics, Data Mining, Principles of Database Systems, Social and Collaborative Computing, UI Design and Evaluation.

North South University   **Dhaka, Bangladesh**
B.Sc. in Computer Science, CGPA: 3.56 (Cum-Laude)   *Jan 2016 to Jan 2020*
- **Relevant Courses:** Analysis of Algorithms, Data Structures, Machine Learning, Networking, Software Engineering.

EXPERIENCE

Marquette University   **Milwaukee, WI**
Graduate Research Assistant   *Aug 2021 to present*
- Employing **data mining** techniques to collect data from online communities and **evaluating and cleaning data** using **quantitative, qualitative, statistical analysis** to better understand the social support dynamics for online postpartum depression.
- Conducting **interview study** with mothers to investigate the potential of storytelling in the context of online postpartum depression communities.
- Utilizing **natural language processing (NLP) techniques** to identify prevalent topics in online groups, and thus, creating a **web-based storytelling system** that effectively supports women facing perinatal mental health challenges.

Parkview Health   **Fort Wayne, IN**
Informatics Research Intern   *May 2025 to August 2025*
- Investigated **user perceptions of mental health chatbots** through mixed-methods research (qualitative coding, thematic analysis, and quantitative survey evaluation) using a trauma-informed care lens.
- Designed a **focus group study with healthcare professionals** to gather expert perspectives on opportunities and challenges in digital mental health support.
- Derived **actionable design implications** from user insights to inform the development of safer, more equitable, and trustworthy chatbot-based interventions.

Marquette University   **Milwaukee, WI**
Graduate Teaching Assistant   *Aug 2024 to Dec 2024*
- Supporting undergraduate courses: **Introduction to Artificial Intelligence, Introduction to Data Science, and Introduction to Machine Learning.**
- Facilitating learning by preparing instructional materials, assignments and clarifying complex topics in AI, data science, and Machine Learning.
- Assisting grading assignments, exams, and projects to evaluate student performance.

Northwestern Mutual   **Milwaukee, WI**
Data Engineering Intern   *May 2024 to August 2024*
- Collaborated with UDP MLOps and GenAI teams to **automate the evaluation framework** for domain-specific LLMs (multi-agents based), fine-tuning models with custom data and metrics.
- Integrated the framework into **a scalable CI/CD pipeline** on Azure API, optimizing AI solutions in financial services.

Marquette University   **Milwaukee, WI**
Mentor   *May 2023 to October 2023*

- Collaborated with undergraduates on assigned research projects at the Social and Ethical Computing Lab, offering support, advice, and assistance as needed under the REU program.
- Assessed with the students to address specific challenges, guiding effective problem-solving strategies.

Therap (BD) Ltd.   **Dhaka, Bangladesh**
Associate Software Engineer, QA   *Jun 2020 to July 2021*

- Reviewed quality specifications of Therap mobile application, created technical design documents to provide timely with meaningful feedback using both manual and automated testing techniques.
- Developed comprehensive test plans outlining the testing approach, scope, resources, schedule, and deliverables.
- Worked closely with development teams, product managers, and other stakeholders to understand requirements and address quality concerns.

Banglalink Digital Communications Ltd.   **Dhaka, Bangladesh**
Service Assurance Intern   *April 2020 to June 2020*

- Conducted regular audits and assessments of network and service performance, ensuring compliance with established standards, identifying areas for improvement, and implementing measures to enhance overall service quality.
- Participated in quality assurance activities to ensure that services meet predefined quality standards. This involved testing procedures, analyzing results, and providing feedback for improvement.

North South University   **Dhaka, Bangladesh**
Teaching Assistant   *Jan 2019 to May 2020*

- Supported 120+ students' learning goals by providing individualized and small-group support for classroom lessons.
- Helped preparing course materials, including lecture notes, presentations, and assignment sheets.

PROJECTS (SELECTED)

- **Evaluating a Web-Based Digital Storybook Platform:** Evaluating the effectiveness, usability, and clinical relevance of a web-based, storytelling intervention designed to support perinatal mental health. It includes qualitative interviews with healthcare providers and a longitudinal study with perinatal participants to measure changes in depressive symptoms, perceived support, and user engagement.
- **Developing a Web-Based Digital Storybook Platform Using Generative AI Storytelling Techniques:** Designing and implementing an interactive digital storybook platform leveraging generative AI to create personalized and culturally sensitive narratives. The platform aims to enhance user engagement and accessibility for diverse audiences by incorporating adaptive storytelling methods and user-centric design principles.
- **Evaluating AI- vs. Human-Generated Stories for Perinatal Mental Health:** Conducted a mixed-methods study with 400 perinatal participants on MTurk to compare perceptions of AI- and human-generated stories. Findings revealed that AI narratives were polished but emotionally distant, while human stories were culturally specific and resonant, highlighting co-creation as a design direction and raising questions around trust, authenticity, and emotional impact.
- **Online Social Support Dynamics Prediction:** Employed both supervised and unsupervised learning in R to predict the presence of support-seeking behavior in posts and comments within online postpartum depression (PPD) communities, achieving a notable accuracy of 85.06%.
- **Exploring Women's Perspectives and Barriers in Adopting Perinatal Mental Health Technologies:** Conducted in-depth semi-structured interviews with 15 mothers who were either pregnant or in their postpartum, and the qualitative assessment elucidated the ethnographic diverse experiences of women around professional help, social support, anonymity, and misinformation when adopting and using perinatal technologies.
- **Understanding the Online Social Support Dynamics:** Utilized mixed-method analysis techniques to examine a dataset from online postpartum depression communities, consisting of approximately 10,000 posts and comments (textual content), to categorize discussion topics and social support interactions within these digital forums.
- **Investigating the Potential of Storytelling in Online Postpartum Depression Communities:** Employed a mixed-methods approach to analyze interview and survey data from mothers dealing with postpartum depression. This analysis investigated the potential design implications of integrating storytelling as a concept-testing strategy while considering the benefits of online sharing of postpartum stories.
- **Child Labour Detection:** A child labor recognition model based on convolutional neural network (CNN) was developed using a novel video dataset, and its performance was compared with two popular transfer learning methods for enhanced accuracy (90.625%) assessment.

PUBLICATIONS

- **Progga, F.T.**, & Rubya, S. **Who Tells the Better Story? Comparing Human- and AI-Generated Narratives on Perinatal Mental Health Topics** (Under Review).
- **Progga, F.T.**, Faye, K., & Nova, F. **Strengths, Weaknesses, Opportunities, and Threats of Mental Health Chatbots: Insights from User Experiences** (Under Review).

- **Progga, F.T.**, & Rubya, S. **Women's Perspectives and Barriers in Adopting Perinatal Mental Health Technologies** *ACM International Conference on Supporting Group Work (GROUP 2025)*. ACM.
- **Progga, F.T.**, & Rubya, S. **Women's Perspectives and Barriers in Adopting Perinatal Mental Health Technologies** *ACM International Conference on Supporting Group Work (GROUP 2025)*. ACM.
- **Progga, F.T.**, Khan, A., Rubya, S. **Large Language Models and Personalized Storytelling for Postpartum Wellbeing** *The 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2024)*. ACM.
- **Progga, F.T. Storytelling as a Social Support Tool for Perinatal Mental Health and Wellbeing** *The 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2024)*. ACM.
- **Progga, F.T.**, Kumar, A. S., & Rubya, S. **Understanding the Online Social Support Dynamics for Postpartum Depression.** *2023 CHI Conference on Human Factors in Computing Systems*. ACM.
- **Progga, F.T.**, & Rubya, S. **"Just like Therapy!": Investigating the Potential of Storytelling in Online Postpartum Depression Communities.** *ACM International Conference on Supporting Group Work (GROUP 2023)*. ACM.
- **Progga, F.T.**, Shahria, M. T., Arisha, A., & Ahmed, M.U. **A Deep Learning Based Approach to Child Labour Detection.** *6th Information Technology International Seminar Virtual Conference 2020 (ITIS2020)*. IEEE.
- **Progga, F.T.**, Shahria, M. T., & Ahmed, N. **The Effectiveness and Acceptance of Collaborative E-learning in the Context of Bangladesh.** *In 2020 IEEE International Conference on Engineering, Technology and Education (TALE2020)*. IEEE.
- **Progga, F.T.**, Shahriar, H., Zhang, C., & Valero, M. **AI and Blockchain for Vehicular Network: A Review.** *In Artificial intelligence and Blockchain for Future Cybersecurity Applications by Springer "Studies in Big Data"*. Springer.
- Shahria, M. T., **Progga, F.T.**, Arisha, A., & Ahmed, S. **Application of Neural Networks for Detection of Sexual Harassment in Workplace.** *In 2021 IEEE International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2021)*. IEEE.

POSTER PRESENTATION

- **Storytelling as a Social Support Tool for Perinatal Mental Health and Wellbeing** *In the 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2024)*. ACM.; San Jose, Costa Rica

- **Large Language Models and Personalized Storytelling for Postpartum Wellbeing** *In the 27th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2024)*. ACM.; San Jose, Costa Rica

- **The Potential of Storytelling using Generative AI for Perinatal Mental Health (PMH) Support.** *In the Graduate Student Research Competition, 2024*; Milwaukee, WI

- **Exploring the Potential of Storytelling using Large Language Models in Online Perinatal Mental Health (PMH) Communities.** *In Northwestern Mutual Data Science Institute Fall Showcase, 2023*; Milwaukee, WI

- **"Just like Therapy!": Investigating the Potential of Storytelling in Online Postpartum Depression Communities** *In ACM International Conference on Supporting Group Work (GROUP) 2023*; Hilton Head Island, SC

- **"Please tell me I'm not the only one…": Understanding Online Support-Seeking for Postpartum Depression.** *In CRA-WP Grad Cohort for Women, 2022*; New Orleans, LA

AWARDS & HONORS

- *Marquette University Arthur J. Schmitt Leadership Fellowship 2025-26.*
  Description: I was Awarded for demonstrating academic excellence, leadership potential, and service commitment, including a competitive stipend and full tuition support for doctoral study.
- *Marquette University Deans Research Enhancement Award 2025.*
  Description: My project title "Evaluation of Storytelling as a Social Support Tool for Perinatal Mental Health and Wellbeing" - got the Deans research enhancement award.
- *Marquette University 3MT Competition Finalist 2025.*
  Description: I selected as a finalist for effectively presenting complex doctoral research to a non-specialist audience in under three minutes; recognized for clarity, engagement, and research impact.
- *Marquette University Graduate School Poster Competition 2024:* **Best Poster Award**.
  Description: Our poster titled "The Potential of Storytelling using Generative AI for Perinatal Mental Health (PMH) Support" - got the best poster award at the competition.
- *Marquette University Deans Research Enhancement Award 2024.*
  Description: My project title "Storytelling as a Social Support Tool for Perinatal Mental Health and Wellbeing" - got the Deans research enhancement award.
- *Nothwestern Mutual: Intern Achievement Recognition 2024 Cohort.*
  Description: During my internship at Northwestern Mutual, I was honored to receive an award in recognition of the valuable contributions I made to the team and the organization through communication.
- *Grace Hopper Celebration 2024 AnitaB.org Advancing Inclusion Scholar.*
  Description: Awarded the prestigious Advancing Inclusion Scholarship by AnitaB.org to attend the Grace Hopper Celebration 2024, recognizing commitment to fostering diversity, equity, and inclusion in technology.
- *Nothwestern Mutual Data Science Institute Student Scholarship:* Student Scholars Program for Spring and Summer

2024 & 2025 Cohort.
Project: Crafting Digital Story Narratives using Generative AI to Facilitate Social Support for Postpartum Depression.

- *Marquette University* Research Fellowship: Computer Science Summer Research **Fellowship** for Summer'23.
Project Description: This study aims to leverage storytelling in online postpartum depression (PPD) communities to enhance social support, addressing a gap in Human-Computer Interaction (HCI) research. Using natural language processing (NLP), we identified discussion topics, develop a technology integrating storytelling, and evaluate its impact on maternal mental well-being, contributing to effective technology-based interventions in perinatal mental health.

- *Gary Marsden Travel Award by ACM:* Scholarship for Conference Travel (CHI 2023).
Description: Received ACM travel scholarship for attending CHI 2023 to present the research paper "Understanding Online Social Support Dynamics for Postpartum Depression".

- *Northwestern Mutual Data Science Institute* Speaker Series Webinar: **Invited Panelist**.
Description: Invited as a panelist to talk about the ongoing research on developing technology for mental health domain titled: DEVELOPING TECH FOR MENTAL HEALTH.

- *ACM* International Conference on Supporting Group Work GROUP 2023: **Best Poster Recognition**.
Description: Our poster titled "Just like Therapy!": Investigating the Potential of Storytelling in Online Postpartum Depression Communities - got the best poster award at the GROUP 2023 Conference.

- *Forward Thinking Research Symposium 2022, **Marquette University**:* **Awarded** as one of the **"Forward Thinking Research"** involving gender-related research. **Description:** Our study aiming to understand online social support dynamics for postpartum depression, exploring women's views on perinatal technology, and assess the impact of storytelling in online communities. Through a user-centered approach, the goal is to merge storytelling and technology for effective and inclusive interventions in perinatal mental health. This research is awarded as on of the *"forward thinking"* research happening at Marquette.

- *NASA Human Exploration Rover Challenge 2019,* Huntsville, Alabama, USA (Position: 32nd): An engineering design challenge to engage students worldwide in the next phase of human space exploration.

- *IEEE YESIST12- Age of Innovation 2019 (Finalist)*: An international talent show for students and young professionals to showcase their innovative ideas to solve humanitarian and social issues affecting directly the community.

VOLUNTEER & CO-CURRICULAR ACTIVITIES

Leader   Serving as the **co-chair** of *Northwestern Mutual Data Science Institute's Talent Subcommittee.*
Serving as the **Academic Senate member** at *Marquette University* to represent Marquette's Graduate School.
Serving as the student member of *Graduate Student Organization* representing the College of Arts and Sciences of Marquette University.
Served as the treasurer of *IEEE North South University Women In Engineering Affinity Group (2018-2019).*

Peer-Reviewer   Served as a peer-reviewer to the following conference:
2023, 2024 ACM Conference on Human Factors in Computing Systems (CHI),
2023, 2024 ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW).
2023, 2024 International AAAI Conference on Web and Social Media (ICWSM).

Volunteer   Served as a volunteer in multiple conferences including
ACM International Conference on Supporting Group Work (GROUP) 2023, 2025,
ACM Conference On Computer-Supported Cooperative Work And Social Computing (CSCW) 2023,
ACM Conference on Human Factors in Computing Systems (CHI) 2023,
Marquette's Data Ethics symposium.

TECHNICAL SKILLS

- **Computational Skills:** Programming Languages (C, C++, C#, Java, PHP, Python, R, MySQL, Power BI, Tableau, MATLAB), Machine Learning (PyTorch, Keras, Scikit-Learn, TensorFlow), and Natural Language Processing (NLTK).
Certification: Coursera Deep Learning Specialization.

- **Data Management:** Data Analytics, Data Visualization, Data Quality Assessment, Data Storytelling, and Data Mining.
Certification: Google Data Analytics Professional Certificate (Ongoing).

- **User Experience Research:** Interview Study, Survey Creation, Quantitative and Qualitative Assessment, Statistical Analysis, Concept Testing and Usability Testing.

- **Version Controls:** Git, Github, Jira.