

Diversity Statement

Muhammad Hasan Ferdous

University of Maryland, Baltimore County

Web: mhasanferdous.github.io · Email: h.ferdous@umbc.edu

Addressing the underrepresentation of groups such as women, minorities, and people with disabilities in higher education, especially in computing and information sciences, is one of the most critical challenges facing our field. Diversity and equity matter to me both personally and professionally. Having been born and raised in Bangladesh and later coming to the United States for graduate study, I understand the value of an environment where diversity is genuinely welcomed. Through five years at UMBC, I have worked with a diverse community of students and colleagues and have learned that, despite differences in background, we share a common passion for learning and excellence.

In the Classroom

In physical classroom settings, I strive to create an interactive environment where no assumptions are made based on gender, ethnicity, or religion. I use **live-coding sessions** in which I explain program logic statement by statement, ensuring that the step-by-step procedure is clear to all learners. For example, when teaching complex join operations in *IS 410: Introduction to Database Design*, I relate data relationships to real-world organizational structures, such as a university's enrollment system, to make abstract concepts tangible. I implement **rotating team leadership roles** in semester-long projects to ensure every student, particularly those from underrepresented groups, has the opportunity to develop professional communication skills. For students requiring additional assistance, I offer extended in-person discussions and separate office hours to provide a low-pressure environment for conceptual grounding.

To ensure maximum participation in online and hybrid formats, I use embedded quizzes and interactive polls to maintain real-time engagement. For asynchronous content, I manage student cognitive load by uploading smaller, modular videos rather than long singular lectures. This format allows learners to revisit specific technical segments, such as a complex Data Flow Diagram walkthrough in *IS 436: Structured Systems Analysis and Design*, at their own pace. I am committed to providing inclusive digital resources and eager to contribute to departmental initiatives such as the **Center for Women in Technology (CWIT)** and the **Meyerhoff Scholars Program**, both of which serve as nationally recognized models for supporting underrepresented students in STEM.

Through Research

My research in Causal Artificial Intelligence is driven by the motivation to solve problems that improve the quality of human life and decision-making. My work on **TimeGraph**, accepted at KDD 2025, provides a synthetic benchmark suite designed to evaluate and improve causal discovery from complex time-series data. By developing robust and interpretable benchmarks, I aim to ensure that AI systems are evaluated fairly and rigorously before deployment in sensitive domains such as healthcare or finance. I believe it is important to use technical rigor to support everyone, especially those from underrepresented groups who are often most affected by algorithmic bias.

Commitment

I want to be part of a society that appreciates people from diverse backgrounds. As a faculty member, my goal is to give students of all backgrounds the opportunity to feel comfortable, supported, and empowered in pursuing their academic and professional dreams. I am committed to promoting diversity and equal opportunity through teaching, research, and service.