Fair Prediction in Virtual Math Learning Environment

With growing concerns about AI, there are now a growing set of interdisciplinary research communities for understanding and mitigating these risks, like the ACM Conference on Fairness, Accountability, and Transparency in Machine Learning (FAT/ML) commonly known as ACM FAccT.

Thus far, little work on fairness has been conducted in an educational context. To address this gap and attract students and Learning Engineers interested in both education and fairness issues, the University of Florida is proposing to host a data science competition centered around the fair prediction of end-of-section Algebra performance using the Algebra Nation dataset. This grant would support the relevant data cleaning, costs of running the competition, and prize awards.

This competition and dataset have several unique characteristics including (1) focus on fairness issues specific to AI-driven educational systems like how an algorithm performs on different subgroups of students, (2) data on a virtual learning environment with naturalistic learning processes such as video lectures, homework, tests, and online communications (student-student, student-teacher), (3) longitudinal data which will allow data scientists to design, develop, and evaluation fair algorithms by incorporating temporal features.