Introduction:

This project is funded by IES, Schmidt Family Foundation, UF AI Catalyst, and UFII Seed Grant. Online learning has received great popularity in K-12 and higher education as instruction increasingly migrates from conventional methods. To support online learners at a large scale, educational researchers have adopted artificial intelligence (AI) and learning analytics (LA) techniques such as machine learning (ML) to predict their learning outcomes automatically. However, limited attention has been paid to the fairness of prediction with AI in educational settings that could enlarge inequality in education. In this project, we aim to explore methods and strategies to evaluate and mitigate AI bias as well as explain AI decision-making to support students in Algebra Nation, an online math learning platform with more than 500,000 active students every year. Specifically, we have explored different strategies to enhance AI fairness for education in different tasks such as academically at-risk prediction, peer recommender for help-seeking, and conversational AI for socio-emotional support.

Research supported by the funding:

Yet Another Predictive Model? Fair Predictions of Students’ Learning Outcomes in an Online Math Learning Platform

Toward building a fair peer recommender to support help-seeking in online learning