SEMINAR SERIES

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ALGORITHMIC FAIRNESS AND MULTI-OBJECTIVE OPTIMIZATION- APPLICATIONS OF MACHINE LEARNING AND OPERATIONS RESEARCH

Featuring Dr. Christian Haas

University of Nebraska at Omaha

November 20, 2020 | 12:00 - 1:00 pm

Zoom Link: https://unomaha.zoom.us/j/97755588516

ABOUT DR. HAAS

Dr. Christian Haas is an Assistant Professor at the College of Information Science and Technology at UNO. His research applies Machine Learning approaches to data-driven decision making, specifically focusing on heuristic optimization, statistical machine learning, and algorithmic fairness. He leads an industry project on ML for recommender systems and is a member of several other machine learning related projects. He teaches undergraduate and graduate classes in data analytics and statistical machine learning. Prior to his position at UNO, Dr. Haas worked as a Senior Data Scientist at IBM Germany where he conducted data analytics projects for a variety of industries.

PRESENTATION ABSTRACT

Data-driven models are frequently used for inference, prediction, or prescription of actions in various domains. In this talk I highlight two of my current research projects that focus on specific applications of these data-driven models. First, the question of fairness. It is well known that data can suffer from various biases, and without interventions these biases can be propagated into predictions or decisions made by machine learning models. To ensure the fairness of the model output for different groups of affected users, Algorithmic Fairness defines various approaches and strategies to mitigate potential biases. Second, as an example of prescriptive models I will give an overview of a current project utilizing multi-objective optimization and heuristics. Specifically, the project aims to develop algorithms to create diverse (and 'fairer') voting districts while considering a multitude of different objectives.

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