Pacific Institute for the Mathematical Sciences

Join us for this talk in the Seminar Series: *Mathematics of Ethical Decision-making Systems*

Thursday, November 3rd, 2022
Talk @ 3:30 pm
Reception @ 4:30 pm

Engineering Computer Science
Room - ECS 660
University of Victoria

Jamie Morgenstern
University of Washington

Shifts in Distributions and Preferences in Response to Learning

Prediction systems face exogenous and endogenous distribution shift -- the world constantly changes, and the predictions the system makes change the environment in which it operates. For example, a music recommender observes exogeneous changes in the user distribution as different communities have increased access to high speed internet. If users under the age of 18 enjoy their recommendations, the proportion of the user base comprised of those under 18 may endogeneously increase. Most of the study of endogenous shifts has focused on the single decision-maker setting, where there is one learner that users either choose to use or not. In this talk, I'll describe several settings where user preferences may cause changes in distributions over the life of an ML system, and how these changes will affect the long-term performance of such systems. Joint work with Sarah Dean, Mihaela Curmei, Maryam Fazhel and Lillian Ratliff.

Bio: Jamie Morgenstern is an assistant professor in the Paul G. Allen School of Computer Science & Engineering at the University of Washington. She was previously an assistant professor in the School of Computer Science at Georgia Tech. Prior to starting as faculty, she was fortunate to be hosted by Michael Kearns, Aaron Roth, and Rakesh Vohra as a Warren Center fellow at the University of Pennsylvania. She completed her PhD working with Avrim Blum at Carnegie Mellon University. She studies the social impact of machine learning and the impact of social behavior on ML's guarantees. How should machine learning be made robust to behavior of the people generating training or test data for it? How should ensure that the models we design do not exacerbate inequalities already present in society?

****For those unable to attend this talk in person, we have a Zoom alternative. For the Zoom meeting ID/Passcode, please send an email to pims@uvic.ca . Thank you ****