

Exploring Fairness and Socio-demographic Bias in Machine Learning



Recent converging advances in sensing and computing allow the ambulatory long-term tracking of individuals yielding a rich set of real-life multimodal bio-behavioral measurements, such as speech, physiology, and facial expressions. While bio-behavioral measurements coupled with machine learning algorithms have been heralded as promising solutions to empowering physical and mental healthcare, various ethical and societal challenges prevent the widespread adoption of such technologies. One such challenge is that machine learning algorithms might be driven by and potentially further perpetuate existing socio-demographic disparities. The first part of this tutorial will cover recent studies exploring ways in which algorithms might reproduce socio-demographic disparities related to gender, race, and socio-economic status (SES). The second part of the tutorial will outline ways to mitigate unwanted bias, including iterative data re-labelling, fairness regularization, and adversarial learning to reduce evidence of sensitive attributes in the data.

The tutorial workshop consists of two one-hour lecture style sessions with a short break in between. There is no hands-on session in this workshop but examples will be used to facilitate understanding in the lecture. Registration is not needed.

Background knowledge advisable: Participants should have at least a basic understanding of machine learning fundamentals.

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Date: Friday, April 23

Time: 1:00 – 3:00 p.m. US Central Time

Meeting ID: 998 4499 3279

Passcode: 724615

Faculty host: Yu Ding, TAMIDS

Biography

Dr. Theodora Chaspari is an Assistant Professor in the Computer Science & Engineering Department at Texas A&M University. She has received her Bachelor of Science (2010) in Electrical & Computer Engineering from the National Technical University of Athens, Greece and her Master of Science (2012) and Ph.D. (2017) in Electrical Engineering from the University of Southern California. Dr. Chaspari's research interests lie in the areas of affective computing, signal processing, data science, and machine learning. Papers co-authored with her students have been nominated and won awards at the ACM BuildSys 2019, IEEE ACII 2019, ASCE i3CE 2019, and IEEE BSN 2018 conferences. Dr. Chaspari's research is supported by federal and private funding sources (NSF, NIH, IARPA, AFRL, EiF, TAMU DoR).

You can also click this link to join the seminar <https://tamu.zoom.us/j/99844993279?pwd=TkJodWFVRURyMmkwakl4SWZGeVJTQT09>