University of Houston - Biomedical Engineering Seminar
Friday, Oct. 11, 2019 Noon, Rm 204 SEC
Towards Man-Machine Symbiosis

Professor A. H. Tewfik

Abstract

Numerous articles in the general press warn against a dark future in which evermore powerful machines will displace humans. Yet, empirical evidence establishes that properly designed human – machine systems outperform man and machine and have the potential of increasing human creativity and cognitive abilities. In this talk, I will provide an overview of cognitive biases in human decision-making, give examples of man-machine symbiosis and review our recent work in the area. In particular, I will focus on machine-assisted human decision making and the use of brain machine interfaces to improve speech recognition, recognize the audio source a person is listening to and whether the person is listening to her mother tongue. Time permitting, I will describe some of the work that we have been performing on reducing the amount of data needed to train support vector machines and deep neural networks.

Biosketch

Dr. Tewfik received B.Sc. from Cairo University and his M.Sc., E.E. and Sc.D. from MIT. He is the Cockrell Family Regents Chair in Engineering and the Chairman of the Department of Electrical and Computer Engineering at the University of Texas Austin. Previously he was the E. F. Johnson professor of Electrical Engineering at the University of Minnesota and worked at Alphatech, Inc. His current research interests are in cognitive augmentation through man-machine symbiosis and mobile computing, low energy broadband communications, applied machine learning and brain computing interfaces. Prof. Tewfik is a Fellow of the IEEE. He was a Distinguished Lecturer of the IEEE Signal Processing Society. He received the IEEE third Millennium award in 2000 and the IEEE Signal Processing Society Technical Achievement Award in 2017. He was President-elect of the IEEE Signal Processing Society in 2017 and VP Technical Directions of that Society in 2009