Good Morning,
You are invited to attend our weekly ECE Graduate Seminar.

Old Dominion University
College of Engineering and Technology
Department of Electrical and Computer Engineering

All lectures to be held at 3:00pm on Fridays online at
https://vs.prod.odu.edu/kvs/zoom/?cid=202120_ECE731831GraduateSeminarSpring2022VS_96353
For more information, contact Dr. Chung Hao Chen at (757) 683-3475 or email cxchen@odu.edu.

Friday, January 28, 2022 Seminar Topic:

Deep Domain Adaptation for Child Facial Expression Analysis by Megan Witherow, Ph.D.
Candidate from the Department of Electrical & Computer Engineering at Old Dominion University

Abstract:
From signaling identity to emotion, our faces are a rich medium for nonverbal communication. The morphology and kinematics of facial expressions enable the quantitative measurement of psychophysical information for characterizing differences in social communication and identifying markers for developmental and behavioral disorders in children. Such markers may be identified through facial expression analysis (FEA) techniques and subsequently used to measure and monitor symptoms. Early diagnosis and intervention are important for best supporting children with developmental and behavioral disorders, motivating the need for child targeted FEA. Unfortunately, labeled facial expression images for children are scarce and there remain few studies on recognition of child facial expressions. Furthermore, multiple studies have documented that expression classifiers trained on adult ground truth data fail to generalize to child expressions. The production and patterns of expressions are not constant throughout childhood and into adulthood, resulting in a demonstrable distribution shift between adult and child expression data. To overcome this distribution shift, transfer learning and domain adaptation techniques may be used to leverage abundant adult expression data to improve child FEA. This presentation will discuss the application of transfer learning and adult-to-child domain adaptation in the multi-class classification of child facial expressions.

Bio:
Megan Witherow received her B.S. degree in computer engineering from Old Dominion University (ODU) in 2018. She is currently a PhD student at the Vision Lab, Department of Electrical and Computer Engineering, ODU, and a 2020 NSF Graduate Research Fellow. Her graduate research focuses on domain adaptation and computer vision for quantitative study of facial expressions and eye gaze data of children and young adults with Autism Spectrum Disorder. Her research interests include computer vision, machine learning, statistics, human-computer interaction, and affective computing.