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.

<u>**Friday, April 8, 2022 Seminar Topic:**</u>

"ATTL: An Automated Targeted Transfer Learning with Deep Neural Networks" by Sayyed Farid Ahamed,
PhD student in the Department of Electrical & Computer Engineering at Old Dominion University

<u>**Abstract:**</u>

Success of machine learning algorithms hinges on access to labeled dataset. Obtaining a labeled dataset is an expensive, challenging and time-consuming process, leading to the development of transfer learning (TL) methodology. TL incorporates gained knowledge from a previously trained source model into specific yet similar task models with limited data domain coverage. In this project, we propose an automated targeted transfer learning (ATTL) method to resolve the transferability between source and target with minimal data requirements. The ATTL method decides how much target data is essential for model training, along with selected source data, to obtain the stakeholder's specified performance metrics. The ATTL framework optimizes the system to select minimal target data based on two approaches: combinatorial coverage and adaptive selection methodology, along with specific source data for fine-tuning given a pre-trained source model. We evaluated the ATTL method on the Kaggle's 'planes in satellite imagery' dataset and the

University of Dhaka in 2016 and 2018 respectively. His research interests include transfer learning, machine learning, computer vision and artificial intelligence. He previously worked in hardware security like FPGAs. Currently, his work is focused on developing machine learning/deep learning-based algorithms for artificial intelligence security.