

**When:** Friday 15:30 – 16:00, October 4, 2019

**Where:** ETB 1035

**Speaker:** Omar Maddouri

Ph.D. Student in Prof. Byung-Jun Yoon's Group  
Department of Electrical and Computer Engineering  
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**Title:** Deep Network-Based Approaches for  
Robust Biomarkers Identification and Disease Classification

**Abstract:** Accurate disease diagnosis and prognosis based on omics data rely on the effective identification of robust prognostic and diagnostic markers that elucidate the mechanistic processes underlying the disease pathogenesis and progression. In this talk, I will briefly introduce a novel network based approach for biomarkers identification that leverages deep graphical convolutional neural networks and biological prior knowledge to identify highly reproducible markers with consistent performance across independent datasets possibly from different platforms. I will first focus on representation learning by deep architectures and then graph clustering by message passing. Also, I will show some analysis results of complex disorders such that Schizophrenia, Breast cancer, and Ovarian cancer.

**Bio:** Omar Maddouri received his BS in Computer Science from the National School of Computer Science (ENSI), Tunisia in 2010 and an MS in Biological and Biomedical Sciences from the College of Science and Engineering of HBKU, Qatar in 2017. Between 2010 and 2015, he served as a software engineer in LG Electronics and Continental Automotive. He is currently pursuing his Ph.D. in Electrical Engineering at Texas A&M University. His main research interests are in bioinformatics, computational biology, machine learning, and Bayesian learning.