

**FRIDAY, AUG 7TH | 3:30 PM- 4:30 PM**

# MACHINE LEARNING

## Abstract:

With the advent of the internet-of-things and big data movements, the rate of gathering and accumulating information is growing dramatically. Enormous data that contain heterogeneous features representing different views of the same objectives are arisen in various scientific fields. For instance, audio and video signals can be seen as two different views of the same person. In signal processing, machine learning and data science, multiview learning is an emerging field with well-appreciated analytical tools and wide-range application domains, such as image processing, gene-expression measurement data analytics, natural language processing, etc. Numerous multiview learning approaches have been proposed in the literature. However, the existing methods are limited to either linear data models, two-view data analysis, (semi-)supervised setups, or unique machine learning task. Thus, my research is on designing new multiview learning models to break these limitations, and bringing new discoveries in both theory and application. In this talk, I will introduce my newly designed graph multiview canonical correlation analysis models to break these limitations, devise the generalization bound under mild conditions, and demonstrate the effectiveness of the new models via numerical real-world applications. My second topic in this talk will be concentrated on my novel models for discriminative analytics of multiple datasets, which extract the most discriminative information from one dataset (a.k.a. target data) of particular interest relative to the other(s) (a.k.a. background data). Albeit simple to comprehend and practically relevant, such discriminative data analytics has not been thoroughly addressed. Under certain conditions, this model is proved to be least-squares optimal in recovering the latent subspace vector unique to the target data relative to the background data. The performance of the proposed models is validated in substantial dimensionality reduction applications.

**Guest Speaker:**

**DR. JIA CHEN**

**Assistant Professor Electrical and  
Computer Engineer**

**Zoom Link:**

**<https://utrgv.zoom.us/j/99290269755>**

**Meeting ID: 992 9026 9755**

**<https://sites.google.com/view/spiestudentchapter/home?authuser=0>**

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