

Computer Science Seminar Series

National Capital Region

Factor Analysis in Multi-X Learning

Speaker: Dr. Luke Huan

University of Kansas
Friday, September 30, 2016
1:00PM- 2:00PM, NVC T3

Abstract

In this talk we present a new direction of multi-task multi-view learning where we have data sets with multiple tasks, multiple views and multiple labels. We call this problem a multi-task multi-view multi-label learning problem or MTVL learning for short. There is a wide application of MTVL learning where examples include Internet of Things, brain science, and text categorization. In designing effective MTVL learning algorithms, we hypothesize that a key component is to “disentangle” interactions among tasks, views, and labels, or performing factor analysis to better understand task-view-label interactions. For that purpose, we have developed an adaptive-basis multi-linear analyzers that utilizes a tensor loading factor to modulate interactions among multiple latent factors. We designed a new MTVL learning algorithm, aptMTVL, and evaluated its performance on several real-world data sets. The experimental results demonstrated the effectiveness of our proposed method as compared to state-of-the-art MTVL learning algorithms.

Biography



Dr. Jun (Luke) Huan is a Professor in the Department of Electrical Engineering and Computer Science at the University of Kansas. He directs the Data Science and Computational Life Sciences Laboratory at KU Information and Telecommunication Technology Center (ITTC). He holds courtesy appointments at the KU Bioinformatics Center, the KU Bioengineering Program, and a visiting professorship from GlaxoSmithKline plc. Dr. Huan received his Ph.D. in Computer Science from the University of North Carolina.