APPLIED MATHEMATICS SEMINAR SERIES:

The Four Elements of Tensor Graph Mining & Learning

Dr. Vagelis Papalexakis

University of California Riverside

Date:
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Time:
3:00 PM – 4:15 PM

Location:
COB1 105

Abstract:

Tensors methods have been very popular and effective tools for analyzing multi-aspect data in a wide variety of fields, ranging from Psychology to Chemometrics, and from Signal Processing to Data Mining and Machine Learning. A major application of tensor methods in the fields of Data Mining and Machine Learning is mining and learning on Graphs. In this talk, we introduce the four essential elements that encompass and empower tensor methods for graph mining and learning. Subsequently, we present state of the art results in tensor methods for graphs including community detection and tracking, node embeddings, node and entity alignment, and adversarial robustness.

About The Speaker:

Evangelos (Vagelis) Papalexakis is an Associate Professor of the CSE Dept. at University of California Riverside. He received his PhD degree at the School of Computer Science at Carnegie Mellon University (CMU). Prior to CMU, he obtained his Diploma and MSc in Electronic & Computer Engineering at the Technical University of Crete, in Greece. Broadly, his research interests span the fields of Data Science, Machine Learning, Artificial Intelligence, and Signal Processing. His research involves designing interpretable models and scalable algorithms for extracting knowledge from large multi-aspect datasets, with specific emphasis on tensor factorization models, and applying those algorithms to a variety of real-world problems, including detection of misinformation on the Web, explainable AI, and gravitational wave detection. His work has appeared in top-tier conferences and journals, and has attracted a number of distinctions, including the 2017 SIGKDD Dissertation Award (runner-up), a number of paper awards, the National Science Foundation CAREER award, the 2021 IEEE DSAA Next Generation Data Scientist Award, the 2022 IEEE Signal Processing Society Donald G. Fink Overview Paper Award, and the IEEE ICDM 2022 Tao Li Award which awards excellence in early-career researchers in data mining. He has extensive experience in conference organization, including organizing a workshop at KDD 2019 on "Tensor Methods for Emerging Data Science Problems", being the Deep Learning Day Co-Chair for KDD 2019, the Doctoral Forum Co-Chair for SDM 2021, the Demos Co-Chair for WSDM 2022, the Program Co-Chair for SDM 2022, and the General Co-Chair for SDM 2024.

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