# Computer Science
# Seminar

## *Multi-Facet Contextualized Graph Mining with Cube Networks*

Carl Yang, PhD
University of Illinois, Urbana Champaign

**Abstract:** Graph data are ubiquitous and indispensable in a variety of high-impact data mining problems and applications, due to its natural and unique modeling of interconnected objects. However, real-world graph data are often massive, complex, and noisy, challenging the design of both effective and efficient knowledge discovery frameworks. In this talk, I will present our recent progress on multi-facet contextualized graph mining, centered around the objective of multi-modal data integration across different domains. In particular, I will focus on (1) a new data model of cube networks, which organizes massive complex networks into controllable small subnetworks with clear structures and semantics under multi-facet contexts; (2) a few algorithmic examples on what can be done on top of cube networks. Beyond that, I will also briefly give examples on how to construct cube networks from existing data models like attributed heterogeneous networks, and what real-world impact cube networks can make on industry-level applications. Finally, I will conclude with some visions and future plans regarding learning with cube networks.

**Bio:** Carl Yang is a final-year Ph.D. student with Jiawei Han in Computer Science at University of Illinois, Urbana Champaign. Before that, he received his B.Eng. in Computer Science at Zhejiang Uni-versity under Xiaofei He in 2014. In his research, he develops data-driven, weakly supervised, and scalable techniques for knowledge discovery from massive, complex and noisy network (graph) data. His interests span graph data mining, network data science, and applied machine learning, with a focus on designing novel graph analysis and deep learning frameworks for the construction, modeling, and application of real-world network data, towards tasks like conditional structure generation, contextualized network embedding, graph-aided recommendations, and so on. Carls leading-author research results have been published and well-cited in top conferences like KDD, WWW, NeurIPS, ICDE, WSDM, ICDM, CIKM, ECML-PKDD, SDM and ICML.

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