

Department of Computer Science



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 **Date: 27 March 2023 (Monday)**

 **Time: 9:30am – 10:30am**

 **Registration: <https://bit.ly/cs-ereg>**

(*Zoom details will only be provided to registrants)

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Towards Efficient Self-supervised Learning on Graphs

ABSTRACT

Graphs have become ubiquitous for describing and analysing objects with relationships in various machine learning applications, including social science, transportation services, and biomedical informatics. Recently, deep learning on graphs has gained significant attention as the demand for such applications grows. However, most of the research in this area has been focused on supervised learning, leading to several shortcomings, such as heavy label reliance, poor generalization, and weak robustness. To overcome these issues, self-supervised learning (SSL) is emerging as a promising approach for graph data. In this presentation, I will first provide an overview of the current state of SSL research on graphs and then highlight the efficiency challenges faced when working with large-scale graphs and resource-constrained applications like online services. Finally, I will describe some of our most recent works that aim to accelerate the training and inference process of SSL on graphs, which have resulted in up to 7x speedup during training and 100x speedup during inference without sacrificing performance.

BIOGRAPHY

Qiaoyu Tan is a Ph.D. candidate in the Department of Computer Science and Engineering at Texas A&M University, supervised by Dr. Xia Hu. His research interests centre around machine learning and data mining, with a particular focus on graph machine learning, self-supervised learning, automated machine learning, and tiny machine learning. He has published more than ten first-author papers in major data mining and machine learning conferences, such as KDD, WWW, AAI, and NeurIPS.

ENQUIRY