Statistics and Actuarial Science Seminar

Title: Stochastic block model with Bayesian nonparametrics for directed acyclic graphs

Speaker: Clement Lee (Lancaster University)

Date: Mon 15th November 2021 at 12:00PM

Location: Online

Abstract: Directed acyclic graphs (DAGs) are usually being used as models, such as Bayesian networks, in statistics. While less attention is paid to data that are DAGs, they do exist and come with a topological ordering, a feature that is exclusive to DAGs. We propose a stochastic block model for DAGs, with the number of groups K being accounted for by the use of Pitman-Yor process, a popular model in Bayesian nonparametrics. The two regimes of the process are incorporated in the inference algorithm, allowing us to investigate the behaviour of K as the number of nodes grows. Applications to a small citation network, which is inherently a DAG, are illustrated. This is ongoing joint work with Marco Battiston.

Join the Zoom call: https://ucd-ie.zoom.us/j/68316324831