



Statistics and Actuarial Science Seminar

Title: Manifold structure in graph embeddings

Speaker: Patrick Rubin-Delanchy (University of Bristol)

Date: Mon 16th November 2020 at 12:00PM

Location: Online

Abstract: Statistical analysis of a graph often starts with embedding, the process of representing its nodes as points in space. How to choose the embedding dimension is a nuanced decision in practice, but in theory a notion of true dimension is often available. In spectral embedding, this dimension may be very high. However, in this talk I will show that existing random graph models, including graphon and other latent position models, predict the data should live near a much lower dimensional set. One may therefore circumvent the curse of dimensionality by employing methods which exploit hidden manifold structure. The research is motivated by cyber-security, anti-human-trafficking and anti-corruption applications. <https://arxiv.org/abs/2006.05168>