CRUNCH Seminars at Brown, Division of Applied Mathematics

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Graph Embedding Method for Network Data Analysis

Mengjia Xu

In real world applications, networks can be used as a powerful language for describing and modeling complex systems, e.g. social networks, economic networks, biomedical networks, internet networks, etc. In the past few decades, machine learning-based graph representation has become an active research area, since it can provide insights into how to make good use of the information hidden in graphs and facilitate more accurate and efficient downstream graph analysis tasks (e.g., community detection or link prediction). In the talk, I will first give an overview of the latest graph embedding methods, and then I will specifically introduce the principles of Gaussian embedding technique with uncertainty quantification. Finally, I will illustrate a real-world functional brain network application using the Gaussian embedding method.