



INSTITUTE FOR MATHEMATICS
AND ITS APPLICATIONS

IMA
Workshop

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Theory and Algorithms in Graph-based Learning

Graph-based learning techniques have seen a wide range of applications in machine learning. Many forms of data are naturally modeled as a graph, such as networks of social media users, databases of images, states of large physical and biological systems, or collections of DNA sequences. Graph structure encodes interdependencies among constituents and provides for a convenient representation of the high-dimensional data. Patterns in the graph structure can be used to inform the design of scalable, graph-based learning algorithms in semi-supervised and unsupervised settings that deal with a limited amount of labeled information.

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