

How to Decompose a Graph into a Tree-Like Structure

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Abstract

Many NP-hard problems on graphs are known to be tractable if we restrict the input to have a certain decomposition into a tree-like structure. Width parameters of graphs are measures on how easy it is to decompose the input graph into a tree-like structure. The tree-width is one of the most well-studied width parameters of graphs and the rank-width is a generalization of tree-width into dense graphs. This talk will present a survey on width parameters of graphs such as tree-width and rank-width and discuss known algorithms to find a decomposition of an input graph into such tree-like structures efficiently.

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