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Probabilistic Graphical Models: A Modern Approach

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Probabilistic graphical models are a common framework for modeling the joint probability distribution of random variables that uses parameterized graphical structures to more compactly and comprehensively represent probability distributions and independence relationships between variables. In this regard, various presentation methods (such as Bayesian networks, Markov networks, Template-based methods), approximate and exact inference methods, as well as structure learning methods and examples of the applications of these models in applications of image processing, audio processing, text processing, bioinformatics problems expressed. These topics are very important and many problems can be solved by learning them. For this purpose, the book "Probabilistic Graphical Models" by Daphne Koller and Nir Friedman, which covers most of the mentioned topics, can be introduced to those interested.