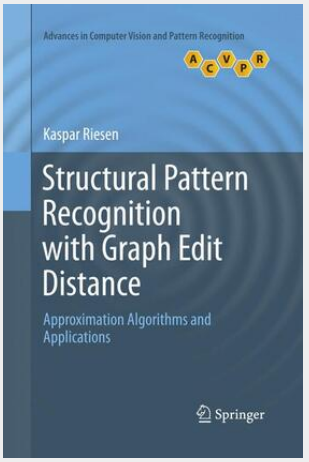
Riesen

Structural Pattern Recognition with Graph Edit Distance

Approximation Algorithms and Applications



This unique text/reference presents a thorough introduction to the field of structural pattern recognition, with a particular focus on graph edit distance (GED). The book also provides a detailed review of a diverse selection of novel methods related to GED, and concludes by suggesting possible avenues for future research. Topics and features: formally introduces the concept of GED, and highlights the basic properties of this graph matching paradigm; describes a reformulation of GED to a quadratic assignment problem; illustrates how the quadratic assignment problem of GED can be reduced to a linear sum assignment problem; reviews strategies for reducing both the overestimation of the true edit distance and the matching time in the approximation framework; examines the improvement demonstrated by the described algorithmic framework with respect to the distance accuracy and the matching time; includes appendices listing the datasets employed for the experimental evaluations discussedin the book.

This unique text/reference presents a thorough introduction to the field of structural pattern recognition, with a particular focus on graph edit distance (GED), one of the most flexible graph distance models available. The book also provides a detailed review of a diverse selection of novel methods related to GED, and concludes by suggesting possible avenues for future research. Topics and features: - Formally introduces the concept of GED, and highlights the basic properties of this graph matching paradigm - Describes a reformulation of GED to a quadratic assignment problem - Illustrates how the quadratic assignment problem of GED can be reduced to a linear sum assignment problem - Reviews strategies for reducing both the overestimation of the true edit distance and the matching time in the approximation framework - Examines the improvement demonstrated by the described algorithmic framework with respect to the distance accuracy and the matching time - Includes appendices listing the datasets employed for the experimental evaluations discussed in the book Researchers and graduate students interested in the field of structural pattern recognition will find this focused work to be an essential reference on the latest developments in GED. Dr. Kaspar Riesen is a university lecturer of computer science in the Institute for Information Systems at the University of Applied Sciences and Arts Northwestern Switzerland, Olten, Switzerland.

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