

Partially Optimal Cubic Subspace Clustering

Research Project Machine Learning

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Partial Optimality for Cubic Clique Partition Problem

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Partial Optimality Algorithm:

Input: clustering y without fixed labels

while condition applied **do**

 apply subproblem-CUT-condition exhaustively

 apply one of JOIN-conditions (in effective order)

end while

apply CUT-conditions exhaustively

Output: partially optimal clustering y with some fixed labels

Program Structure

Class Diagram Algorithm implementation in ClusteringProblem

Features: ClusteringProblem is generally defined for all types of Cubic Clique Partition Problem (not necessarily points), cost function + sparse costs!, label computation, cut triples, logs joins and cuts! (add screenshots)

Subproblem-CUT

A couple of words about the split and the implementation (with picture of splitting)

JOIN-conditions

Special attention to 3.11 (+ my adjustment) Mention reduction to Min-Cut problem and the complexity!!!

JOIN-conditions

Overview of the other join-conditions (with pictures)

Overview of the cut-conditions (with pictures)

Example

Pyramid example for my algorithm