Finding Representative Subsets in Multiobjective Discrete Optimization

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We consider several formulations of the problem of selecting a representative subset of alternatives from the nondominated set of a biobjective discrete optimization problem, according to some property of interest. These formulations can be seen as a special type of facility-location problems. In particular, we introduce algorithms to find subsets with respect to the epsilon-indicator, coverage, uniformity and combinations thereof. We analyse these algorithms in terms of time and space complexity and discuss their performance in an experimental setting. Extensions to more objectives are also presented.

Keywords: Combinatorial Optimization, Multi-Criteria Combinatorial Optimization, Multi-Objective Optimization.