

A dataset for suggesting variable orderings for cylindrical algebraic decompositions

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Data have been playing a vital role in many successful applications of artificial intelligence. To embrace the power of modern AI technology to accelerate symbolic algorithms, it is indispensable to have a large amount of data of high quality. Unfortunately, such datasets are rare in the area of symbolic computation. Indeed, generation of a large dataset from scratch often costs a lot of time and effort. In this work, we make public a random dataset on suggesting the variable ordering of cylindrical algebraic decomposition. We report in detail the design, generation as well as statistical information of the dataset. The value of this dataset is demonstrated by training and testing on it with several machine learning models.

Keywords

Dataset, Symbolic computation, Cylindrical algebraic decomposition, Variable ordering, Machine learning.