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ROBUST BICLUSTERING ALGORITHM (ROBA) FOR DNA MICROARRAY DATA ANALYSIS (WedPmOR2)

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✱ Abstract :

Recently, biclustering algorithms have been used to extract useful information from large sets of DNA microarray experimental data. They refer to a distinct class of clustering algorithms that perform simultaneous row–column clustering. The goal is to find submatrices, that is, subgroups of genes and subgroups of conditions, where the genes exhibit highly correlated activities for every condition. Almost all of the methods proposed in the literature search for one or two types of bicluster among four. Also, most of the proposed methods rely on solving an optimization problem. Therefore, the method is dependant on the optimally criterion which most of the time, is likely to miss some significant biclusters. In this study, we develop a Robust Biclustering Algorithm to address the two issues mentioned above: optimum results and type of biclusters. Our algorithm is simple because it uses basic linear algebra and arithmetic tools and there is no need to solve an optimization problem.

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