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Novel biclustering algorithms for binary microarray data

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In this paper, we present three new algorithms called, *BiBinConsmeans*, *BiBinConsmax*, *BiBinAltermeans*, *BiBinAltermax*, *BiBinConvmeans* and *BiBinConvmax*, for biclustering of binary microarray data. There are novel alternatives to extract biclusters from sparse binary datasets. Our algorithms are based on *Iterative Row and Column Clustering Combination* (IRCCC) and *Divide and Conquer* (DC) approaches, *BiMax* initialization and the *CroBin* evaluation function. Applied on binary synthetic datasets, our algorithms outperform other biclustering algorithms for binary microarray data. Biclusters with different numbers of rows and columns can be detected, varying from many rows to few columns and few rows to many columns. Our algorithms allow the user to guide the search towards biclusters of specific dimensions.

Biography

Haifa Ben Saber is a PhD student of the Bioinformatics Group (BIG) of The Laboratory of Technologies of Information and Communication, and Electrical Engineering (LaTICE), National High School of Engineers of Tunis (ENSIT), University of Tunis, Tunisia, and is also an Assistant Professor at the Time Université, Tunisia.

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