



A hybrid LDA and genetic algorithm for gene selection and classification of microarray data

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Auteur	Huerta, Edmundo Bonilla [1], Duval, Béatrice [2], Hao, Jin-Kao [3]
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Mots-clés	classification [4], dedicated genetic algorithm [5], gene selection [6], Linear discriminant analysis [7]
Résumé en anglais	<p>In supervised classification of Microarray data, gene selection aims at identifying a (small) subset of informative genes from the initial data in order to obtain high predictive accuracy. This paper introduces a new embedded approach to this difficult task where a genetic algorithm (GA) is combined with Fisher's linear discriminant analysis (LDA). This LDA-based GA algorithm has the major characteristic that the GA uses not only a LDA classifier in its fitness function, but also LDA's discriminant coefficients in its dedicated crossover and mutation operators. Computational experiments on seven public datasets show that under an unbiased experimental protocol, the proposed algorithm is able to reach high prediction accuracies with a small number of selected genes.</p>
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Liens

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