# Differential Evolution Based Nearest Prototype Classifier with Optimized Distance Measures and GOWA

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**Abstract**
Nearest prototype classifier based on differential evolution algorithm, pool of distances and generalized ordered weighted averaging is introduced. Classifier is based on forming optimal ideal solutions for each class. Besides this also distance measures are optimized for each feature in the data sets to improve recognition process of which class the sample belongs. This leads to a distance vectors, which are now aggregated to a single distance by using generalized weighted averaging (GOWA). In earlier work simple sum was applied in the aggregation process. The classifier is empirically tested with seven data sets. The proposed classifier provided at least comparable accuracy or outperformed the compared classifiers, including the earlier versions of DE classifier and DE classifier with pool of distances.

**Keywords**
Classification , Differential evolution, Pool of distances, generalized ordered weighted averaging operator