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Basket Classifier: Fast and Optimal Restructuring of the Classifier for Differing Train and Target Samples

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The common approach for constructing a classifier for particle selection assumes reasonable consistency between train data samples and the target data sample used for the particular analysis. However, train and target data may have very different properties, like energy spectra for signal and background contributions. We suggest using ensemble of pre-trained classifiers, each of which is trained on exclusive subset of the total dataset, data baskets. Appropriate separate adjustment of separation thresholds for every basket classifier allows to dynamically adjust combined classifier and make optimal prediction for data with differing properties without re-training of the classifier. The approach is illustrated with a toy example. Quality dependency on the number of used data baskets is also presented

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