

## A Survey of Feature Selection and Feature Extraction Techniques in Machine Learning

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**Abstract :** Dimensionality reduction as a preprocessing step to machine learning is effective in removing irrelevant and redundant data, increasing learning accuracy, and improving result comprehensibility. However, the recent increase of dimensionality of data poses a severe challenge to many existing feature selection and feature extraction methods with respect to efficiency and effectiveness. In the field of machine learning and pattern recognition, dimensionality reduction is important area, where many approaches have been proposed. In this paper, some widely used feature selection and feature extraction techniques have analyzed with the purpose of how effectively these techniques can be used to achieve high performance of learning algorithms that ultimately improves predictive accuracy of classifier. An endeavor to analyze dimensionality reduction techniques briefly with the purpose to investigate strengths and weaknesses of some widely used dimensionality reduction methods is presented.

**Keywords :** age related macular degeneration, feature selection feature subset selection feature extraction/transformation, FSA's, relief, correlation based method, PCA, ICA

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