

Comparing The Accuracy Classification of the Machine Learning Algorithms Using Anxiety Data

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Abstract

Kernel methods are a class of machine learning that has received more attention and become an increasingly popular tool for learning tasks such as pattern recognition, classification or novelty detection. The purpose of this research was to compare the accuracy classification of the linear and non-linear Kernel Support Vector Machine(SVM) and Naive Bayes classifier using anxiety data in a student sample. **Method:** In 2017, 345 university students (243 females and 102 males) from the city of Karaj were measured on the short form NEO questionnaire, Spielberger's State - Trait Anxiety Inventory, and anxiety group membership and neuroticism (N), extroversion(E) openness(O), agreeableness(A), and conscientiousness (C) were considered as target and feature variables respectively. The obtained data were analyzed using linear and non-linear Kernel Support Vector Machines (SVMs) and a Naive Bayes classifier with R software. **Results:** The confusion matrices indicated that Kernel SVM, naïve Bayes and linear SVM all had a high classification accuracy.

Keywords: confusion matrix; Kernel; naive Bayes classifier; sensitivity; specificity; support vector machine(SVM)