Klasifikasi Single-label dan Multi-label pada Teks Menggunakan ANN dan Perbandingannya dengan Naïve Bayes dan SVM

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Abstract

Machine learning has become useful in daily life thanks to improvements in machine learning techniques. Text classification as an important part in machine learning. There are already many methods used for text classification such as Artificial Neural Network (ANN), Naïve Bayes, SVM, Decision Tree etc. ANN is a branch in machine learning which approximate the function of natural neural network. ANN have been used extensively for classification. In this research a simple architecture of ANN is used. But it needs to be pointed out that the architecture used in this research is relatively simple compared to the cutting edge in ANN development and research to show the potential that ANN have compared to other classification method. ANN, Naïve Bayes and SVM performance are measured using f1-macro. Performance of classification model is measured of multiple single-label and multi-label dataset. This research found that in single-label classification ANN have a comparable f1-macro with 0.79 compared to 0.82 for SVM. In multi-label classification ANN have the best f1-macro with 0.48 compared to 0.44 in SVM.

Keywords: ANN; F1-Macro; Naïve Bayes; Text Classification; SVM