

Experimental Study of Hyperparameter Tuning a Deep Learning Convolutional Recurrent Network for Text Classification

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Abstract : The sequence of words in text data has long-term dependencies and is known to suffer from vanishing gradient problems when developing deep learning models. Although recurrent networks such as long short-term memory networks help to overcome this problem, achieving high text classification performance is a challenging problem. Convolutional recurrent networks that combine the advantages of long short-term memory networks and convolutional neural networks can be useful for text classification performance improvements. However, arriving at suitable hyperparameter values for convolutional recurrent networks is still a challenging task where fitting a model requires significant computing resources. This paper illustrates the advantages of using convolutional recurrent networks for text classification with the help of statistically planned computer experiments for hyperparameter tuning.

Keywords : long short-term memory networks, convolutional recurrent networks, text classification, hyperparameter tuning, Tukey honest significant differences

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