

Abstract—

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The objective of this paper is to introduce a novel solution for the automated sentiment classification of texts using a hybrid deep learning algorithm known as a C-LSTM, which integrates a convolutional neural network (CNNs) and long-short-term memory neural networks (LSTMs). The network is referred to as the “Predict Text Classification Network” (PTCN). Advancements in natural language processing (NLP) techniques provide the necessary ability to embed word vector spaces into layers of the neural networks. Adaptable parameters in the model architecture allow for the network to adjust to various types of text classification tasks. The PTCN expressed success in accurately predicting congressional roll call votes from legislative texts with varying dimensions []. The dimensional space representing language is diverse. The PTCN is tested on two samples of texts reflecting different forms of language use to further reflect the adaptability of the model to various inputs. The first sample is movie scripts, and the second is Twitter tweets. The feature space each form of text represents contains latent patterns uniquely and language structures. The adaptable features in the PTCN further extend its capabilities to reliably produce accurate results for short-text and long-text sentiment classification tasks.