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Development of Sorrow Analysis Dataset for Speech Depression Prediction

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Abstract

Computers can get insight into the user's mental state, including depression prediction, by analyzing speech signals. Numerous uses exist, ranging from customer service to depression-related suicide prevention. In this study, we proposed a novel depression detection method based on deep learning. Deep neural network variants, 1D-CNN, 2D-CNN, and BiLSTM, were utilized. This research developed a new speech depression dataset, namely the Sorrow Analysis Dataset. It is an English depression audio dataset of 64 recordings of depressed and non-depressed individuals. Results showed that of the various architectures tested, 1D-CNN was found to produce the highest average accuracy of 97% with 5-fold validation. © 2023 IEEE.

Author Keywords

BiLSTM; CNN; deep learning; k-fold validation; speech depression dataset

Index Keywords

BiLSTM, Customer-service, Deep learning, Detection methods, K-fold validation, Mental state, Speech depression dataset, Speech signals; Deep neural networks

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