

# Hate Speech Detection using Modified Principal Component Analysis and Enhanced Convolution Neural Network on Twitter Dataset

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## Research Article

**Keywords:** Hate speech detection, Natural Language Processing (NLP), Modified Principal Component, Modified Principal Component Analysis (MPCA), Enhanced Convolution Neural Network (ECNN)

**Posted Date:** May 17th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-352817/v1>

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## **Abstract**

Online social media are increasingly catching people's eye among users of the Internet. Services provided by social networking vendors like Twitter and Facebook are very attractive, with widespread proliferation among internet users. As a downside of their predominance in the domain of social networking, Twitter and Facebook are frequently pestered with the problem of handling offensive, threat, fake, hate words. One of the major problems, apparent in online social media, is the toxic online content. In the existing system, the methods are not dealt with large dataset. Also the feature extraction method is not efficient to extract important features in the given dataset. To overcome the above mentioned issues, in this work, Modified Principal Component Analysis (MPCA) and Enhanced Convolution Neural Network (ECNN) is proposed. Natural Language Processing (NLP) is implemented to build an automatic system through the inclusion of syntactic and semantic analysis. This work contains main phases are such as pre-processing, feature extraction and classification process. The pre-processing is done by using normalization method which is used to remove the white spaces, replace the consecutive exclamation and question marks, and eliminate stop words. These preprocessed features are taken into feature extraction process. MPCA algorithm is applied to perform feature extraction process. It uses set of correlated features and extracts more informative features for the given dataset. Then the classification algorithm is proposed to detect the hate speech or abusive languages. ECNN is proposed to classify hate and non-hate from the online content more accurately. It takes many inputs and generates output with minimum amount of time with higher accuracy for larger dataset. Thus, the result concludes that the proposed MPCA+ECNN algorithm provides higher accuracy, precision, recall and F-measure values rather than the existing methods.

## **Full Text**

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