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# Fake News Classification Using Fuzzy Based Deep Convolutional Neural Networks (FDNN) on Social Media Data

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## Abstract

**Background:** Fake news was not heard much in the last decades. Today, with the rise of digital media, it is considered as an issue that the society has to address [1]. Recently the social networks online has developed extremely where they have to handle with fake news in terms of business and political use which has been emerging enormously as well as broadcasting through online. By these words the users of social network have been affected since they are fake news that created the remarkable effects among the group of people. It is more important in developing the trust among the people using social network. So, it is very important to detect the fake news at the earliest [2].

**Objective:** This research proposed the system that designs the text classification for fake news detection with fuzzy logic.

**Methodology:** The concept of a fuzzy deep convolutional neural network (FDNN) is a conceptual framework that combines the advantages of a CNN framework and fuzzy logic [3]. It aims to extract high-level features from text data then classify fake or real news accurately. The feature extraction has been carried out using the deep learning techniques. After the extraction of features the indexing has been done by high dimensionality. Then based on the indexing measures the fuzzy based deep neural networks (F-DNN) for differentiating fake and real news.

**Result and Discussion:** In this research, the simulation output and their discussion is presented by the results the proposed design using F-DNN classifier for the fake news identification in social media has been attained. Simulation has been done Kaggle database collected from social media [4]. The proposed model accuracy is 95.46%. In the fake news detection task, the FDNN model performed better than the classic CNN model.

**Future Work:** Future extensions to this work can be done using Bidirectional Encoder Representations from Transformer (BERT) embeddings instead of global vector for word representation (GloVe) and LSTM + CNNs with ensemble architectures that can increase their performance.

## References

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