# (SENTIMENTS IDENTIFICATION USING EEG SIGNALS)

*Project report submitted*
*in partial fulfillment of the requirement for the degree of*

**Bachelor of Technology**

Department of Information Technology

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# CERTIFICATE

It is certified that the work contained in the project report titled "SENTIMENTS IDENTIFICATION USING EEG SIGNALS" by "Tasawwur Mehnaz (Roll 19107771), Manshi Kumari (Roll 19107731), Suryansh Shukla (Roll 19107768)" has been carried out under my/our supervision and that this work has not been submitted elsewhere for a degree.

**Signature of Supervisor(s)**

# ABSTRACT

Sentiment identification is an important task in natural language processing (NLP) and has been widely studied in recent years. However, most existing approaches rely on text-based data, which may not accurately capture the emotional states of individuals. In contrast, electroencephalogram (EEG) signals can provide a direct measure of brain activity and therefore offer a promising alternative for sentiment analysis.

This paper proposes a novel approach for sentiment identification using EEG signals and a recurrent neural network (RNN) model. The proposed approach involves recording EEG signals from participants as they read a set of emotionally charged text stimuli, and then using these signals to train an RNN model to predict the corresponding sentiment label. The RNN model is trained using a combination of the raw EEG signals and preprocessed EEG features, and the resulting model is evaluated on a test set to assess its performance.

Experimental results show that the proposed approach achieves high accuracy in sentiment identification, outperforming several baseline methods. In addition, the proposed approach is able to identify the underlying emotional states of participants more accurately than text-based approaches. This suggests that EEG signals can provide valuable insights into an individual's emotional state, which may not be fully captured by text-based data alone.

Overall, the proposed approach demonstrates the potential of using EEG signals for sentiment analysis and highlights the importance of considering alternative data sources for this task. The results of this study have important implications for the development of more accurate and reliable sentiment identification systems, which could be applied in a wide range of applications, such as marketing, healthcare, and social media analysis.