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**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| AI | Artificial Intelligence |
| CPU | Central Processing Unit |
| FN | False Negative |
| FP | False Positive |
| GPU | Graphics Processing Unit |
| LSTM | Long-short term memory |
| Mbps | Mega bytes per second |
| ML | Machine Learning |
| MLP | Multi-Layer Perceptron |
| NLP | Natural Language Processing |
| RAM | Random Access Memory |
| RNN | Recurrent Neural Network |
| ROM | Read Only Memory |
| TN | True Negative |
| TP | True Positive |
| VoC | Voice of Customer |

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**ABSTRACT**

The project chosen is Sentiment Analysis using Natural Language Processing.

The purpose of this research is to investigate sentiment analysis in the field of (NLP) using deep learning techniques, particularly Recurrent Neural Networks (RNNs). Sentiment analysis plays a crucial role in understanding and analysing emotions, opinions, attitudes expressed in textual data, making it an essential task in domains such as social media monitoring, customer feedback analysis, & market research.

Previous research has shown promising results in sentiment analysis using traditional machine learning algorithms. However, with the advancements in deep learning, specifically RNNs, there is a need to explore it’s potential using these techniques.

The objective of this research is to evaluate the effectiveness of RNN-based models for sentiment analysis tasks and determine the ability of RNNs to capture contextual dependencies and long-term dependencies within textual data, which can lead to enhanced sentiment classification accuracy and robustness.

To achieve our objective, we will employ research methods that involve data collection, pre-processing, data cleaning, extraction, classification, training and evaluation of RNN-based models on sentiment analysis datasets. We will analyse the results to determine the strengths and limitations of these models and provide insights into their potential applications and future research directions