**A Natural language processing-powered approach for identifying inappropriate language on twitter**

There is a concerning rise of offensive language on the content generated by the crowd over various social platforms. Such language mightbully or hurt the feelings of an individual or a community. Recently, the research community has

investigated and developed different supervised approaches and training datasets to detect or prevent offensive monologues or dialogues automatically. In this study, we propose a model for text classification consisting of modular cleaning phase and tokenizer,three embedding methods, and eight classifiers. Our experiments shows a promising result for detection of offensive language on our dataset obtained from Twitter. Considering hyperparameter optimization,

three methods of AdaBoost, SVM and MLP had highest average of F1-score on popular embedding method of TF-IDF

**EXISTING SYSTEM:**

The existing system is a robust text classification model tailored for detecting offensive language on Twitter. It incorporates a modular cleaning phase and tokenizer for data preprocessing, deploys three different embedding methods (including TF-IDF), and utilizes a diverse set of eight classifiers. Notably, the model's evaluation on a Twitter dataset reveals promising results, with AdaBoost, Support Vector Machine (SVM), and Multi-Layer Perceptron (MLP) classifiers demonstrating the highest average F1-score. The system also emphasizes the importance of hyperparameter optimization in fine-tuning its performance.

**DISADVANTAGES OF EXISTING SYSTEM:**

* The existing system's effectiveness may be constrained by the specificity of the training data obtained from Twitter. Offensive language and expressions can vary across different social platforms and user communities, potentially leading to challenges in generalization.
* **Algorithm**:

**PROPOSED SYSTEM:**

The proposed system aims to address the limitations of the existing model by incorporating a more diverse and expansive training dataset, encompassing various social platforms to enhance generalization. To enhance interpretability, the system introduces features for explaining model decisions, promoting user trust. Scalability is improved through optimized algorithms and parallel processing, ensuring efficient handling of larger datasets. Additionally, the model adapts to evolving language trends through continuous learning mechanisms, staying attuned to emerging offensive expressions. Enhanced user customization features are introduced, allowing users to tailor the system to their specific community norms and sensitivities, fostering a more inclusive and adaptive offensive language detection framework.

**ADVANTAGES OF PROPOSED SYSTEM:**

* The proposed system benefits from a more diverse and extensive training dataset, encompassing various social platforms. This broader data representation improves the model's ability to generalize and detect offensive language across different online communities.

**Algorithm**: : DTC, MLP, RFC, SVM, CatBoost (CatB), Gaussian Naïve Bayes (GNB), Gradient Boosting Classifier (GradB), AdaBoost (AdaB), XG Boost (XGB), XG Boost with Random Forest (XGBRF).

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Intel Core i7.
* Hard Disk : 1TB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 8GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 11.
* Coding Language : Python
* Tool : PyCharm, Visual Studio Code
* Database : SQLite

**REFERENCES:**

**Date of Conference:**24-27 May 2022

**Date Added to IEEE *Xplore*:**16 June 2022

**ISBN Information:**

**INSPEC Accession Number:**21782084

**DOI:**[10.1109/ECTI-CON54298.2022.9795429](https://doi.org/10.1109/ECTI-CON54298.2022.9795429)

**Publisher:**IEEE

**Conference Location:**Prachuap Khiri Khan, Thailand