Synopsis – Review Analysis and Predictive Insight

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Domain: Machine Learning

Topic and Sponsorship: Review Analysis and Predictive Insight

Abstract : Online reviews play a vital role in shaping customer opinions and influencing purchasing decisions. However, the prevalence of fake or deceptive reviews has become a significant concern, leading to misinformation and loss of trust in digital platforms. This project aims to develop a Fake Review Detection System using Machine Learning and Natural Language Processing (NLP) techniques to identify and filter out such fraudulent content. The proposed system analyzes various features of review texts—such as sentiment patterns, linguistic cues, review length, and repetition—along with optional user behavior data to classify reviews as genuine or fake. Supervised learning algorithms like Random Forest, Support Vector Machine (SVM), and deep learning models like BERT will be employed for accurate detection. The outcome of this project is a scalable and adaptable system that can be integrated into e-commerce platforms, review websites, and service apps to enhance transparency and improve consumer trust.

Keywords: AI,Behavioral Analysis, Fake Reviews, Spam Detection, Trustworthiness

Challenges identified : -Merging text-based and behavioral features into one model

-Data privacy concerns when using user data

- Real-time processing and prediction

-High imbalance between fake and real review data

-Detecting coordinated spam reviews

- Differentiating genuine extreme sentiment from fake ones

Novelty or Industrial Application: -

-Useful for movie and product review platforms like IMDB, Flipkart

- Can help platforms reduce review spam while preserving user freedom

- Easily deployable as a browser extension or API service

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Base IEEE/ Springer / Equivalent publication (paper URL):

https://ieeexplore.ieee.org/document/9141317

List of References:

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-"Identifying Review Spam with Linguistic Features", ACM, 2019

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