

Fake Social Media Detection Using Machine Learning Techniques

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Abstract: *The proliferation of fake accounts on social media platforms, particularly Instagram, has raised concerns regarding misinformation, fraud, and compromised user trust. This study explores the efficacy of machine learning techniques for detecting fake accounts by leveraging two prominent datasets—InstaFake and IJECE. Using preprocessing techniques like SMOTE for class balancing and models such as Random Forest, Decision Trees, and Neural Networks, we aim to identify attributes that distinguish real from fake accounts. The Random Forest model emerged as the best performer with an F1-score of 0.95, demonstrating its robustness in identifying fraudulent accounts. This paper discusses the methodologies, results, and opportunities for enhancing social media platform integrity through advanced detection mechanisms.*

Keywords: Fraud Detection, Machine Learning, Random Forest, Class Imbalance, Social Media Security, Data Preprocessing