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TITLE:

Enhancing Reliability Prediction in Amazon Reviews

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PROBLEM STATEMENT

Online reviews play a crucial role in consumer decision-making, yet many are unreliable due to manipulation, bias, or misleading content. Existing detection methods often fail against sophisticated tactics. This project aims to develop a reliable review prediction system that evaluates Amazon reviews using a combination of machine learning, web scraping, and user engagement metrics.

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ABSTRACT

This research focuses on developing an advanced system to predict the reliability of Amazon reviews by combining multiple techniques. It uses web scraping for data collection, APIs for structured retrieval, and machine learning models to classify reviews. The system employs BERT for analyzing review text and Random Forest to assess metadata, such as timestamps, reviewer history, and purchase verification.

In addition to analyzing the content of the reviews, the system incorporates user engagement metrics like helpful votes, verified purchase status, and reviewer history. These elements help detect patterns such as sentiment trends, repetitive phrases, and sudden spikes in positive or negative reviews, which could indicate manipulation.

By integrating these diverse data sources and advanced analytics, the system improves the accuracy of fake review detection. Its scalability and adaptability to new manipulation tactics make it a valuable tool for enhancing transparency in e-commerce, ultimately boosting trust for users and platforms alike.