

Research on some spam filtering algorithms and their application in internal email filtering

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Abstract: This study investigates several spam filtering algorithms and their application to internal email systems. Given the increasing volume of unsolicited and malicious emails within organizational networks, effective filtering is critical for security and productivity. The research evaluates the performance of traditional machine learning methods, including Naïve Bayes and Support Vector Machines, alongside advanced deep learning approaches such as Convolutional Neural Networks and Long Short-Term Memory networks. A comparative analysis is conducted based on accuracy, precision, recall, and F1-score using a dataset of Vietnamese internal emails. The experimental results demonstrate that deep learning models significantly outperform classical algorithms in detecting nuanced spam patterns, particularly in a localized context. Furthermore, the study proposes an optimized hybrid model that balances computational efficiency with high detection rates, suitable for real-time deployment in internal email servers. The findings provide a practical framework for enhancing email security in Vietnamese enterprises, contributing to the broader field of adaptive spam filtering.

Keywords: Spam filtering, Filtering algorithm, Internal email, Text classification