ABSTRAK

PERBANDINGAN PERFORMA ALGORITMA *SUPPORT VECTOR MACHINE* DAN *Bi-DIRECTIONAL LONG SHORT TERM MEMORY* DALAM MENGKLASIFIKASI BERITA HOAKS

(2025:xv + 59 halaman + 22 gambar +12 tabel + 9lampiran)

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Perkembangan teknologi digital dan kecerdasan buatan mendorong inovasi dalam deteksi otomatis berita hoaks. Penelitian ini membandingkan kinerja dua algoritma klasifikasi teks, yaitu *Support Vector Machine* (SVM) dan *Bi-Directional Long Short-Term Memory* (Bi-LSTM), untuk mendeteksi berita hoaks berbahasa Indonesia. Dataset terdiri dari 19.264 berita, terbagi rata antara hoaks dan non-hoaks, dengan proporsi 80% data latih dan 20% data uji. Model SVM menggunakan pendekatan TF-IDF dan SVC linear, sementara Bi-LSTM menggunakan embedding layer dan dua lapisan LSTM dua arah. Evaluasi dilakukan menggunakan akurasi, precision, recall, dan F1-score. Hasilnya, SVM mencatat akurasi 98,70%, precision 99,26%, recall 98,13%, dan F1-score 98,68%. Bi-LSTM memberikan hasil lebih baik dengan akurasi 99,21%, precision 99,26%, recall 99,15%, dan F1-score 99,19%. Bi-LSTM terbukti lebih konsisten dalam mendeteksi hoaks. Kedua model telah diterapkan dalam sistem web untuk memudahkan masyarakat dalam mengidentifikasi berita hoaks secara cepat dan efisien.

Kata Kunci : Berita Hoaks, Deteksi Hoaks, Evaluasi Model, Klasifikasi Teks, Sistem Berbasis Web*, Support Vector Machine, Bi-Directional Long Short-Term Memory*

ABSTRACT

COMPARISON OF THE PERFORMANCE OF SUPPORT VECTOR MACHINE AND BI-DIRECTIONAL LONG SHORT-TERM MEMORY ALGORITHMS IN CLASSIFYING HOAX NEWS

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The advancement of digital technology and artificial intelligence has driven innovation in the automatic detection of hoax news. This study compares the performance of two text classification algorithms, Support Vector Machine (SVM) and Bi-Directional Long Short-Term Memory (Bi-LSTM), in detecting Indonesian-language hoaxes. The dataset consists of 19,264 news articles, evenly divided between hoax and non-hoax content, with 80% used for training and 20% for testing. The SVM model utilizes a TF-IDF approach with a linear SVC, while the Bi-LSTM model employs an embedding layer and two bidirectional LSTM layers. Evaluation metrics include accuracy, precision, recall, and F1-score. Results show that the SVM model achieved 98.70% accuracy, 99.26% precision, 98.13% recall, and a 98.68% F1-score. The Bi-LSTM model performed slightly better, with 99.21% accuracy, 99.26% precision, 99.15% recall, and a 99.19% F1-score. Bi-LSTM demonstrated more consistent predictions. Both models have been implemented in a web-based system to help the public quickly and efficiently identify hoax news.

Keywords: *Hoax News, Hoax Detection, Model Evaluation, Text Classification, Web-Based System, Support Vector Machine, Bi-Directional Long Short-Term Memory*