KLASIFIKASI BERITA HOAKS POLITIK MENGGUNAKAN ALGORITMA SVM DENGAN PENERAPAN XAI LIME

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ABSTRAK

Penyebaran berita hoaks politik di Indonesia meningkat signifikan, dengan 237 konten hoaks politik teridentifikasi pada tahun 2024. Penelitian ini mengembangkan model klasifikasi berita politik berbahasa Indonesia menggunakan algoritma *Support Vector Machine* dengan representasi fitur *Term Frequency-Inverse Document Frequency* dan metode *Local Interpretable Model-Agnostic Explanations* untuk meningkatkan interpretabilitas. Data penelitian menggunakan 4.155 berita dari CNN Indonesia dan Turnbackhoax melalui *web scraping* tahun 2024. *Metode Cross-Industry Standard Process for Data Mining* diterapkan dengan *preprocessing* meliputi *case folding*, *cleaning*, *tokenizing*, *stopword removal*, dan *stemming*. Pengujian dilakukan pada empat kernel SVM dengan tiga skenario pembagian data. Hasil menunjukkan kernel linear pada pembagian data 80:20 menghasilkan akurasi 98,56%, *precision* 98,52% untuk kelas valid dan 98,63% untuk kelas hoaks, serta *recall* 99,25% untuk kelas valid dan 97,30% untuk kelas hoaks. Penerapan LIME berhasil mengidentifikasi kata pembeda, dimana berita hoaks didominasi kata media sosial seperti telusur, unggah, youtube, dan tiktok, sedangkan berita valid menggunakan istilah formal seperti persen, rabu, politik, dan hadir.

Kata Kunci: Klasifikasi , Hoaks, *Support Vector Machine*, *Explainable* AI, LIME

CLASSIFICATION OF POLITICAL HOAX NEWS USING THE SVM ALGORITHM WITH XAI LIME

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ABSTRACT

The spread of political hoax news in Indonesia has increased significantly, with 237 political hoax contents identified in 2024. This research develops a classification model for Indonesian political news using the Support Vector Machine algorithm with Term Frequency-Inverse Document Frequency feature representation and Local Interpretable Model-Agnostic Explanations method to improve interpretability. The research data used 4,155 news articles from CNN Indonesia and Turnbackhoax collected through web scraping in 2024. The Cross-Industry Standard Process for Data Mining method was applied with preprocessing stages including case folding, cleaning, tokenizing, stopword removal, and stemming. Testing was conducted on four SVM kernels with three data split scenarios. Results showed that the linear kernel with 80:20 data split achieved 98.56% accuracy, 98.52% precision for valid class and 98.63% for hoax class, and 99.25% recall for valid class and 97.30% for hoax class. LIME implementation successfully identified distinguishing keywords, where hoax news was dominated by social media terms such as telusur, unggah, youtube, and tiktok, while valid news used formal terms such as persen, rabu, politik, and hadir.

Keywords: Classification, Hoax, Support Vector Machine, Explainable AI, LIME