ABSTRAK

Mohammed Hafizh Al-Areef, NIM 4193250014 (2023). Analisis Sentimen Pengguna Twitter Mengenai Calon Presiden Indonesia Tahun 2024 Menggunakan Algoritma *Long Short Term Memory*.

Penggunaan internet semakin meluas dengan banyaknya *platform* yang menyediakan berbagai layanan kepada masyarakat untuk mengakses internet. *Platform* media sosial Twitter menjadi salah satu platform yang banyak digunakan oleh masyarakat Indonesia untuk berkomunikasi, dan mengakses informasi dengan cepat. Dilansir dari *We Are Social*, pengguna Twitter di Indonesia mencapai 18,45 juta pada tahun 2022. Hal ini membuktikan bahwa terdapat banyak sekali sentimen masyarakat Indonesia yang terdapat pada *platform* Twitter yang dapat dijadikan sebagai studi kasus salah satunya mengenai calon presiden Indonesia tahun 2024. Beberapa tokoh publik seperti Ganjar Pranowo, Prabowo Subianto, dan Anies Baswedan sudah mulai banyak dibicarakan oleh masayarakat sebagai calon presiden dalam beberapa sentimen pada *platform* Twitter. Sentimen mengenai para tokoh publik tersebut akan diklasifikasikan dengan algoritma *Long Short Term Memory* (LSTM) dengan label positif dan negatif. Data sentimen selanjutnya akan melewati proses *pre-processing*, pelabelan data dengan textblob, *word embedding* dengan *fasttext*, hingga *data balancing* dengan SMOTE sebelum akhirnya model akan dilatih dan diuji. Tahapan penentuan *hyperparameter tuning* dilakukan sebelum melatih model LSTM seperti penentuan jumlah unit, *learning rate*, *dropout*, batch size hingga jumlah epoch agar menghasilkan model latih yang baik. Hasil uji dan evaluasi performa untuk setiap model yang telah dilatih adalah 82% akurasi, 86% presisi, 92% *recall*, dan 89% *f1-score* pada model Ganjar Pranowo. 82% akurasi, 82% presisi, 96% *recall*, dan 89% *f1-score* pada model Prabowo Subianto. 78% akurasi, 79% presisi, 92% *recall*, dan 85% *f1-score* pada model Anies Baswedan. 87% akurasi, 91% presisi, 95% recall, 93% *f1-score* pada model Ridwan. 87% akurasi, 87% presisi, 96% recall, 91% *f1-score* pada model Puan Maharani.

Kata Kunci: Analisis Sentimen, Twitter, *Fasttext*, *Textblob*, SMOTE, LSTM, Hyperparameter Tuning, Confusion Matrix.

ABSTRACT

Mohammed Hafizh Al-Areef, NIM 4193250014 (2023). Sentiment Analysis of Twitter Users Regarding Indonesian Presidential Candidates in 2024 Using Long Short Term Memory Algorithm.

The use of the internet is increasingly widespread with many platforms that provide various services to the public to access the internet. The social media platform Twitter is one of the platforms that is widely used by Indonesians to communicate, and access information quickly. Reporting from We Are Social, Twitter users in Indonesia reached 18.45 million in 2022. This proves that there are a lot of sentiments of Indonesian people on the Twitter platform that can be used as a case study, one of which is about the Indonesian presidential candidate in 2024. Several public Gambars such as Ganjar Pranowo, Prabowo Subianto, and Anies Baswedan have begun to be discussed by the public as presidential candidates in several sentiments on the Twitter platform. Sentiments about these public Gambars will be classified with the Long Short Term Memory (LSTM) algorithm with positive and negative labels. Sentiment data will then go through a pre-processing process, data labeling with textblob, word embedding with fasttext, to data balancing with SMOTE before finally the model will be trained and tested. The hyperparameter tuning stage is carried out before training the LSTM model such as determining the number of units, learning rate, dropout, batch size to the number of epochs in order to produce a good training model. The test results and performance evaluation for each model that has been trained are 82% accuracy, 86% precision, 92% recall, and 89% f1-score on the Ganjar Pranowo model. 82% accuracy, 82% precision, 96% recall, and 89% f1-score on Prabowo Subianto model. 78% accuracy, 79% precision, 92% recall, and 85% f1-score on Anies Baswedan model. 87% accuracy, 91% precision, 95% recall, 93% f1-score on Ridwan model. 87% accuracy, 87% precision, 96% recall, 91% f1-score on Puan Maharani model.

Keywords: Sentiment Analysis, Twitter, Fasttext, Textblob, SMOTE, LSTM, Hyperparameter Tuning, Confusion Matrix.

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