

ABSTRAK

Muhammad Ichwan Astori. 2026. Rancang Bangun Sistem Klasifikasi Sentimen Komentar *Youtube* Menggunakan Metode *Support Vector Machine* (SVM). Skripsi. Program Studi Teknik Informatika, Fakultas Teknik, Universitas PGRI Madiun. Pembimbing (I) Sekreningsih Nita, S.Kom., M.T.s. (II) Puguh Jayadi, S.Kom., M.Kom.

Penelitian ini bertujuan untuk merancang dan membangun sistem klasifikasi sentiment berbasis aspek terhadap opini masyarakat Indonesia mengenai konflik Timur Tengah pada kolom komentar *YouTube*. Keterbatasan analisis sentimen tradisional dalam memproses kalimat majemuk yang ambigu diatasi dengan pendekatan *Aspect-Based Sentiment Analysis* (ABSA) yang mencakup aspek kemanusiaan, ekonomi, dan politik. Pengembangan sistem menggunakan metode Agile dengan kerangka kerja Django berarsitektur *Model-View-Template* (MVT). Data dikumpulkan melalui web scraping eksternal dan diunggah dalam format CSV. Transformasi teks dilakukan melalui prapemrosesan (Sastrawi), ekstraksi fitur *Term Frequency-Inverse Document Frequency* (TF-IDF), serta penanganan ketidakseimbangan kelas menggunakan *Synthetic Minority Over-sampling Technique* (SMOTE). Algoritma *Support Vector Machine* (SVM) kernel linear diimplementasikan sebagai mesin pengklasifikasi. Hasil pengujian fungsionalitas (*Black-Box*) menunjukkan sistem beroperasi 100% tanpa galat. Berdasarkan pengujian Confusion Matrix terhadap 1.628 data opini, performa prediksi SVM mencatatkan Akurasi Keseluruhan sebesar 88% untuk sentimen dan 72% untuk deteksi aspek. Kesimpulannya, algoritma SVM sangat Tangguh dalam membedah opini majemuk berdimensi tinggi dan sistem ini berhasil memetakan persepsi publik secara granular. Namun, penelitian ini memiliki keterbatasan, yaitu adanya bias prediksi pada deteksi kelas minoritas (sentimen positif) yang ditunjukkan oleh nilai *Recall* 0,36 dan *F1-Score* 0,48, sebagai akibat dari tingginya ketimpangan distribusi data pada korpus pengujian, serta diperlukannya integrasi leksikon bahasa gaul tambahan.

Kata Kunci: Analisis Sentimen, ABSA, *Support Vector Machine*, Django, Konflik TimurTengah.

ABSTRACT

Muhammad Ichwan Astori. 2026. *Design and Implementation of a YouTube Comment Sentiment Classification System Using the Support Vector Machine (SVM) Method*. Undergraduate Thesis. Informatics Engineering Study Program, Faculty of Engineering, Universitas PGRI Madiun. Advisor: (I) Sekreningsih Nita, S.Kom., M.T.s. (II) Puguh Jayadi, S.Kom., M.Kom.

This study aims to design and develop an aspect-based sentiment classification system for Indonesian public opinion regarding the Middle East conflict in YouTube comments. The limitations of traditional sentiment analysis in processing ambiguous compound sentences are addressed using the Aspect-Based Sentiment Analysis (ABSA) approach, covering humanitarian, economic, and political aspects. The system development utilizes the Agile method with the Django framework based on a Model-View-Template (MVT) architecture. Data was collected via external web scraping and uploaded in CSV format. Text transformation involved preprocessing (Sastrawi), Term Frequency-Inverse Document Frequency (TF-IDF) feature extraction, and handling class imbalance using the Synthetic Minority Over-sampling Technique (SMOTE). A linear kernel Support Vector Machine (SVM) algorithm was implemented as the classifier. Black-Box functional testing results showed that the system operated at 100% without errors. Based on Confusion Matrix testing on 1,628 opinion data, the SVM predictive performance achieved an Overall Accuracy of 88% for sentiment and 72% for aspect detection. In conclusion, the SVM algorithm is highly robust in dissecting high-dimensional compound opinions, and this system successfully mapped public perception granularly. However, this study has limitations, namely a prediction bias in detecting the minority class (positive sentiment), indicated by a Recall of 0.36 and an F1-Score of 0.48, as a result of the high data distribution imbalance in the testing corpus, as well as the need for additional slang lexicon integration.

Keywords: Sentiment Analysis, ABSA, Support Vector Machine, Django, Middle East Conflict.