

ABSTRAK

Mochamad Yoga Kurniawan. 2025. Analisis Sentimen Kepuasan Publik Terhadap Pembaruan Alun-Alun Jember Menggunakan Metode Random Forest. Universitas Muhammadiyah Jember.

Advisors: Deni Arifianto, M.Kom; Wiwik Suharso,.

Pembaruan Alun-Alun Jember menimbulkan beragam respons dari masyarakat yang banyak diekspresikan melalui media sosial, sehingga diperlukan metode otomatis untuk menganalisis opini publik tersebut secara efisien. Penelitian ini bertujuan untuk menganalisis sentimen publik terhadap pembaruan Alun-Alun Jember menggunakan algoritma Random Forest serta mengidentifikasi distribusi sentimen ke dalam tiga kategori: positif, negatif, dan netral. Data dikumpulkan melalui teknik web scraping menggunakan API dari platform X dan TikTok dengan kata kunci #jembernusantara dan #alunalunjember pada periode 6 Juni 2024 hingga 20 Februari 2025, memperoleh sebanyak 1.420 komentar yang kemudian diproses melalui tahapan cleaning, case folding, tokenizing, normalization, stopword removal, stemming, dan pembobotan fitur menggunakan TF-IDF, serta penyeimbangan kelas dengan SMOTE dan evaluasi model menggunakan K-Fold Cross Validation (K=2 hingga K=10). Hasil pengujian menunjukkan bahwa model Random Forest mampu mengklasifikasikan sentimen dengan akurasi berkisar antara 89% hingga 96%, dengan nilai tertinggi 96% pada K=6, K=8, dan K=10, serta F1-Score terbaik pada kelas negatif mencapai 100%, sehingga disimpulkan bahwa kombinasi metode Random Forest dan SMOTE efektif digunakan untuk analisis sentimen opini publik pada data teks media sosial.

Kata Kunci: Analisis Sentimen, *Random Forest*, TF-IDF, SMOTE, *K-Fold Cross Validation*, Alun-Alun Jember

ABSTRACT

Mochamad Yoga Kurniawan. 2025. Analysis Of Public Satisfaction Toward The Renovation Of Jember Square Using The Random Forest Method. Muhammadiyah University of Jember.

Advisors: Deni Arifianto, M.Kom; Wiwik Suharso

The renovation of Jember Alun-Alun has sparked a variety of responses from the public, many of which have been expressed on social media, necessitating an automated method to efficiently analyze these public opinions. This study aims to analyze public sentiment toward the renovation of Jember Alun-Alun using the Random Forest algorithm and to identify the distribution of sentiment into three categories: positive, negative, and neutral. Data was collected via web scraping techniques using APIs from the X and TikTok platforms with the keywords #jembernusantara and #alunalunjember during the period from June 6, 2024, to February 20, 2025, yielding a total of 1,420 comments, which were then processed through the stages of cleaning, case folding, tokenization, normalization, stopword removal, stemming, and feature weighting using TF-IDF, as well as class balancing with SMOTE and model evaluation using K-Fold Cross Validation ($K=2$ to $K=10$). The test results showed that the Random Forest model was able to classify sentiment with an accuracy ranging from 89% to 96%, with the highest accuracy of 96% at $K=6$, $K=8$, and $K=10$, and the best F1-Score for the negative class reaching 100%. It is therefore concluded that the combination of the Random Forest and SMOTE methods is effective for analyzing public sentiment in social media text data.

Keywords: Sentiment Analysis, Random Forest, SMOTE, K-Fold Cross-Validation, Jember Square.