ABSTRAK

Fariz, Muhammad Ivan. 2023. Optimasi Metode *Multinomial Naïve Bayes* Dengan Menggunakan Metode *Levenshtein Distance* Pada Ulasan Aplikasi *KAI Access*. Tugas Akhir. Program Sarjana. Program Studi Teknik Informatika. Universitas Muhammadiyah Jember.

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KAI Access merupakan aplikasi untuk mempermudah pengguna dalam mengakses layanan dan informasi terkait tiket perjalanan kereta api. *KAI Access* memiliki fitur ulasan beraneka ragam yang merupakan wadah bagi pengguna untuk memberikan *feedback*. Pada penelitian ini akan dilakukan analisis sentimen terhadap data ulasan *KAI Access* sejumlah 8713 data ulasan. Metode yang digunakan yaitu *multinomial naïve bayes* dan metode *levenshtein distance.* Dari kombinasi metode tersebut diharapkan dapat meningkatkan hasil klasifikasi. Seluruh data akan dilakukan pemodelan menggunakan metode *K Fold Cross Validation* dengan nilai k=2,3,4,5,6,7,8,9 dan 10. Berdasarkan hasil pengujian menggunakan *multinomial naïve bayes* diperoleh nilai tertinggi yaitu *accuracy* sebesar 92%, tingkat *precision* sebesar 60% dan tingkat *recall* sebesar 45%. Sedangkan kombinasi metode *multinomial naïve bayes-levesnhtein distance* mengalami peningkatan pada pengujian K-ke 9 yang awalnya menggunakan *multinomial naïve bayes* saja mendapatkan nilai *accuracy* 83%, *precision* 59% dan *recall* 44%, kemudian meningkat ketika menggunakan kombinasi metode *levenshtein distance* sebesar *accuracy* 84%, *precision* 60% dan *recall* 46%. Proses pengujian yang telah dilakukan dapat disimpulkan bahwa optimasi *multinomial naïve bayes* menggunakan *levenshtein distance* meningkatkan hasil *accuracy*, *precision* dan *recall* sebesar 1-2%.

Kata Kunci: *KAI Access, Analisis Sentimen, Multinomial Naïve Bayes, Levenshtein Distance*

ABSTRACT

Fariz, Muhammad Ivan. 2023. Optimization of the Multinomial Naïve Bayes Method Using the Levenshtein Distance Method on KAI Access Application Reviews. Final Project. Undergraduate Program, Informatics Engineering Study Program. University of Muhammadiyah Jember.

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KAI Access is an application to facilitate users in accessing services and information related to train travel tickets. KAI Access has a diverse review feature which is a forum for users to provide feedback. In this research, sentiment analysis will be carried out on KAI Access review data totaling 8713 review data. The methods used are multinomial naïve bayes and levenshtein distance method. The combination of these methods is expected to improve classification results. All data will be modeled using the K Fold Cross Validation method with a value of k = 2,3,4,5,6,7,8,9 and 10. Based on the test results using multinomial naïve bayes, the highest value is obtained, namely accuracy of 92%, precision level of 60% and recall level of 45%. While the combination of the multinomial naïve bayes-levesnhtein distance method experienced an increase in the K-9th test which initially used multinomial naïve bayes alone to get an accuracy value of 83%, precision of 59% and recall of 44%, then increased when using a combination of levenshtein distance methods of 84% accuracy, 60% precision and 46% recall. It can be concluded from the testing process that has been carried out that naïve Bayes multinomial optimization using Levenshtein distance increases accuracy, precision and recall by 1-2%.

***Keywords**: KAI Access, Sentiment Analysis, Multinomial Naïve Bayes, Levenshtein Distance*