

# **Perbandingan Evaluasi Kernel Support Vector Machine Untuk Klasifikasi Sentimen Apple Vision Pro Pada Sosial Media X**

**Laporan Tugas Akhir**

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### PERBANDINGAN EVALUASI KERNEL SUPPORT VECTOR MACHINE UNTUK KLASIFIKASI SENTIMEN APPLE VISION PRO PADA SOCIAL MEDIA X

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**MACHINE UNTUK KLASIFIKASI SENTIMEN APPLE**  
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Dengan ini saya menyatakan bahwa Tugas Akhir dengan judul **“PERBANDINGAN EVALUASI KERNEL SUPPORT VECTOR MACHINE UNTUK KLASIFIKASI SENTIMEN APPLE VISION PRO PADA SOSIAL MEDIA X”** beserta seluruh isinya adalah karya saya sendiri dan bukan merupakan karya tulis orang lain, baik sebagian maupun seluruhnya, kecuali dalam bentuk kutipan yang telah disebutkan sumbernya.

Demikian surat pernyataan ini saya buat dengan sebenar-benarnya. Apabila kemudian ditemukan adanya pelanggaran terhadap etika keilmuan dalam karya saya ini, atau ada klaim dari pihak lain terhadap keaslian karya saya ini maka saya siap menanggung segala bentuk resiko/sanksi yang berlaku.

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## ABSTRAK

Penelitian ini bertujuan untuk menganalisis sentimen terkait Apple Vision Pro menggunakan algoritma Support Vector Machine (SVM) serta mengevaluasi performa berbagai kernel, seperti Linear, Polynomial, Radial Basis Function (RBF), dan Sigmoid. Data dikumpulkan dari platform X melalui proses crawling, menghasilkan 1.825 tweet yang dikategorikan sebagai positif, negatif, atau netral, dengan pelabelan otomatis menggunakan VADER. Sebelum analisis, data diproses melalui tahap preprocessing, termasuk case folding, pembersihan data, penghapusan stopword, lemmatization, dan tokenisasi. Hasil penelitian menunjukkan bahwa kernel Linear dan Polynomial mencapai akurasi sebesar **81%** pada pembagian data 70:30 maupun 80:20 dengan teknik TF-IDF tanpa SMOTE. Namun, penerapan SMOTE pada kernel Polynomial meningkatkan akurasi hingga **99%**, menegaskan bahwa penanganan ketidakseimbangan data berperan penting dalam meningkatkan performa model. Penelitian ini juga merekomendasikan eksplorasi algoritma lain, seperti Random Forest, Gradient Boosting, atau model berbasis Deep Learning (LSTM, BERT), serta teknik representasi kata yang lebih bermakna, seperti Word2Vec atau GloVe, guna meningkatkan akurasi analisis sentimen di masa depan. Temuan ini memberikan wawasan mengenai efektivitas SVM dalam memilih kernel yang optimal untuk klasifikasi sentimen.

**Kata Kunci:** Analisis sentiment, Support Vector Machine (SVM), Kernel SVM, Apple Vision Pro, SMOTE (Synthetic Minority Over-sampling Technique).

## ABSTRACT

*This study aims to analyze sentiment related to Apple Vision Pro using the Support Vector Machine (SVM) algorithm and evaluate the performance of various kernels, including Linear, Polynomial, Radial Basis Function (RBF), and Sigmoid. The data was collected from platform X through a crawling process, resulting in 1,825 tweets categorized as positive, negative, or neutral, with automatic labeling using VADER. Prior to analysis, the data underwent preprocessing steps such as case folding, data cleaning, stopword removal, lemmatization, and tokenization. The results indicate that the Linear and Polynomial kernels achieved an accuracy of 81% with a 70:30 and 80:20 data split using the TF-IDF technique without SMOTE. However, applying SMOTE to the Polynomial kernel significantly improved accuracy to 99%, highlighting the importance of addressing data imbalance to enhance model performance. This study also suggests exploring other algorithms, such as Random Forest, Gradient Boosting, or Deep Learning models (LSTM, BERT), as well as more meaningful word representation techniques like Word2Vec or GloVe, to improve sentiment analysis accuracy in future research. These findings provide valuable insights into the effectiveness of SVM in selecting the optimal kernel for sentiment classification.*

**Keywords:** *Sentiment Analysis, Support Vector Machine (SVM), SVM Kernel, Apple Vision Pro, SMOTE (Synthetic Minority Over-sampling Technique).*

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### **“Perbandingan Evaluasi Kernel Support Vector Machine Untuk Klasifikasi Sentimen Apple Vision Pro Pada Sosial Media X”**

Tulisan ini, akan dipaparkan pokok-pokok bahasan termasuk latar belakang, metode penelitian, serta hasil dan pembahasan yang dihasilkan dari proses penelitian yang telah dilakukan.

Peneliti menyadari bahwa tulisan ini masih memiliki kekurangan dan keterbatasan. Oleh karena itu, peneliti mengharapkan saran yang membangun untuk memperbaiki dan meningkatkan kualitas tulisan ini agar dapat memberikan manfaat yang lebih besar bagi perkembangan ilmu pengetahuan.

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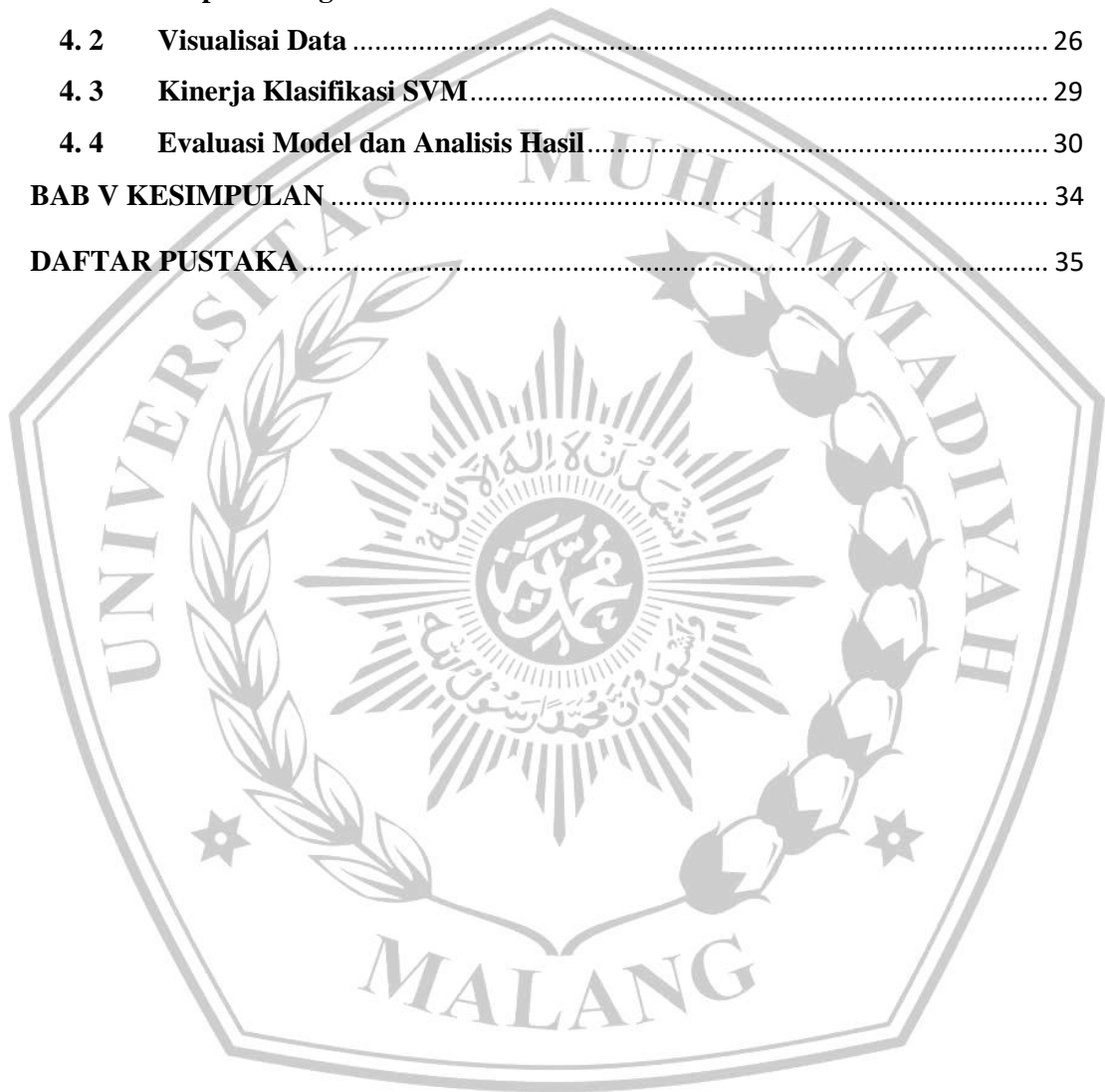


Ach. Nofriyanto Sayuti

## DAFTAR ISI

LEMBAR PERSETUJUAN .....	i
LEMBAR PENGESAHAN .....	ii
LEMBAR PERNYATAAN .....	iii
ABSTRAK .....	iv
ABSTRACT .....	v
LEMBAR PERSEMBAHAN .....	vi
KATA PENGANTAR .....	vii
DAFTAR ISI .....	viii
DAFTAR GAMBAR .....	x
DAFTAR TABEL .....	xi
BAB I PENDAHULUAN .....	1
1.1 Latar Belakang .....	1
1.2 Rumusan Masalah .....	4
1.3 Tujuan Penelitian .....	4
1.4 Manfaat penelitian .....	5
BAB II TINJAUAN PUSTAKA .....	6
2.1 Apple Vision Pro .....	6
2.2 X (Twitter) .....	7
2.3 Crawling Data X .....	10
2.4 Analisis Sentimen .....	12
2.5 Support Vector Machine (SVM) .....	14
2.6 SMOTE Oversampling .....	17
BAB III METODOLOGI PENELITIAN .....	18
3.1 Pengumpulan Data .....	18
3.2 Preprocessing .....	19

3.3	Pembobotan Kata .....	20
3.4	Pembagian Data .....	21
3.5	Klasifikasi Model .....	21
3.6	Evaluasi Model.....	23
<b>BAB IV HASIL DAN PEMBAHASAN .....</b>		<b>25</b>
4.1	Preprocessing .....	25
4.2	Visualisasi Data .....	26
4.3	Kinerja Klasifikasi SVM.....	29
4.4	Evaluasi Model dan Analisis Hasil.....	30
<b>BAB V KESIMPULAN.....</b>		<b>34</b>
<b>DAFTAR PUSTAKA.....</b>		<b>35</b>



## DAFTAR GAMBAR

Gambar 2.1. Apple Vision Pro.....	6
Gambar 2. 2 Logo baru dan lama X (Twitter) .....	8
Gambar 2.3. Pendekatan analisis sentiment.....	14
Gambar 3.1. Model klasifikasi dengan SVM untuk analisis sentiment.....	18
Gambar 3.2. Hasil distribusi data berdasarkan kelas sentiment.....	19
Gambar 4.1. Wordcloud sentiment positif.....	27
Gambar 4.2. Wordcloud sentiment negatif.....	28
Gambar 4.3. Hasil distribusi pembagian data 80:20.....	28
Gambar 4.4. Confusion Matrix tanpa SMOTE (70:30).....	30
Gambar 4.5. Confusion Matrix tanpa SMOTE(80:20).....	31
Gambar 4.6. Confusion Matrix dengan SMOTE (70:30).....	31
Gambar 4.7. Confusion Matrix dengan SMOTE (80:20).....	32
Gambar 4.8. Grafik kurva ROC tanpa SMOTE (80:20).....	33
Gambar 4.9. Grafik kurva ROC dengan SMOTE (80:20).....	33

## DAFTAR TABEL

Tabel 4.1. Hasil Preprocessing.....	26
Tabel 4.2. Perbandingan akurasi empat kernel SVM dengan metode TF-IDF.....	29



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### FORM CEK PLAGIARISME LAPORAN TUGAS AKHIR

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**Judul TA** : Perbandingan Evaluasi Kernel Support Vector Machine Untuk Klasifikasi Sentimen Apple Vision Pro Pada Sosial Media X

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