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HELLO,

I’m Samuel Theophylus Wieguna

Computer Science student at BINUS University, currently in my 5th semester. Passionate about technology and proficient in programming, algorithms, and data structures. Developing strong analytical and problem-solving skills.

EDUCATION

SMAK BPK PENABUR	2019-2022	Graduated with a Science degree from SMA BPK Penabur Sukabumi in May 2022. Strong foundation in biology, chemistry, and physics. Proven analytical and problem-solving skills.
Bina Nusantara, Computer Science	2022-Now	Currently in 5th semester, with cummulative GPA of 3.1. Learnt and gain experience in Computer Science.

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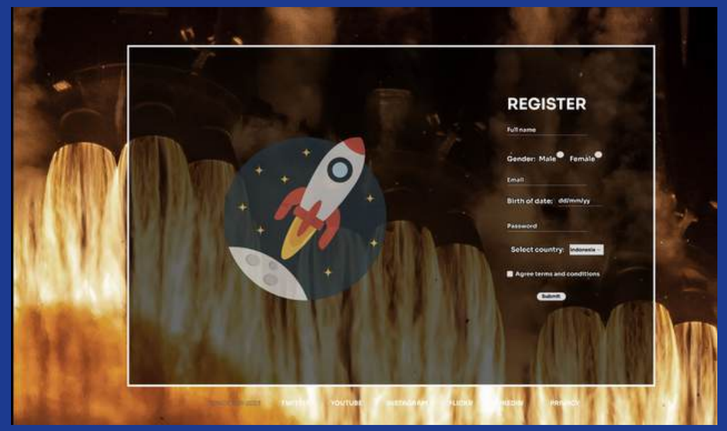

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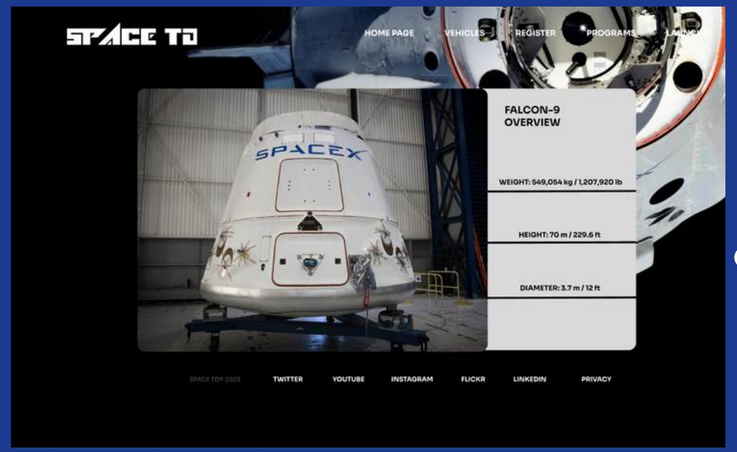

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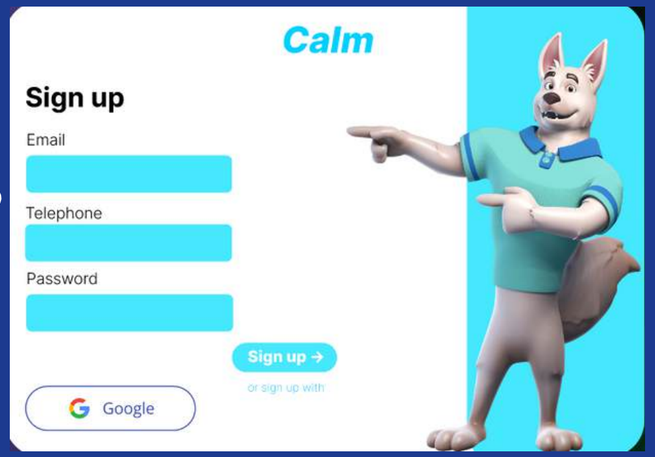

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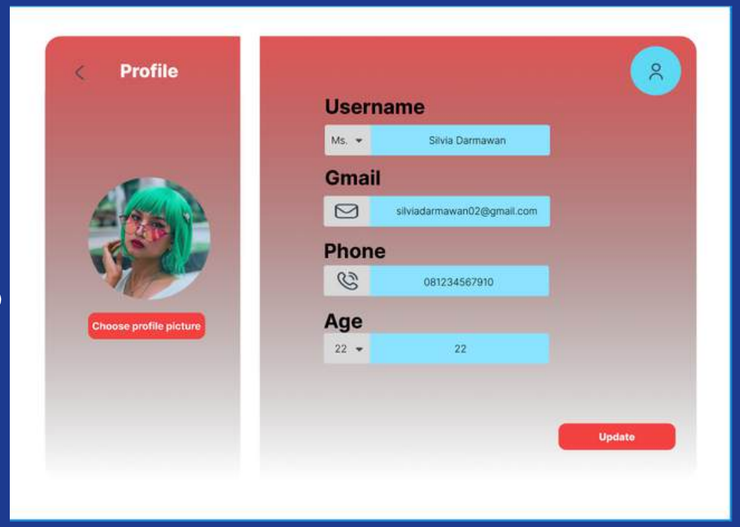

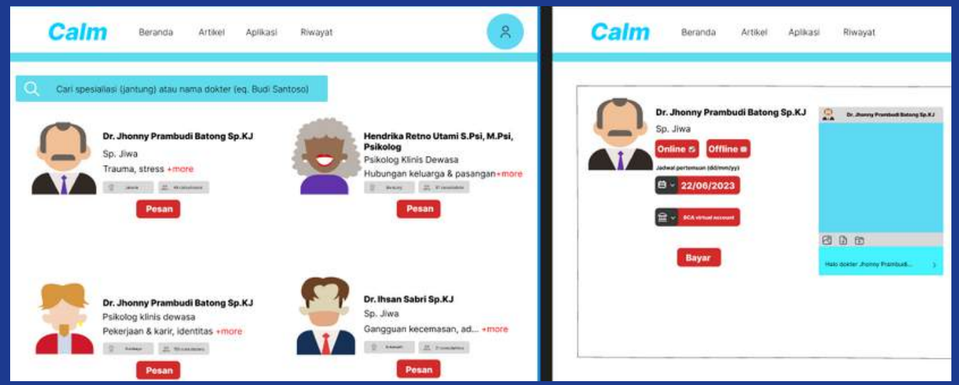

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RESEARCH PAPER

Analysis of Hate Speech on Social Media Using Machine Learning CNN and KNN

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***Abstract*— social media is a free speech platform with opinions and expressions. The freedom of the internet allowed us to surf information all over the world. Lack of regulations has made it become a breeding tool for it. Hate speech on social media has become an increasingly urgent issue with significant negative impacts on individuals and society. Effectively identifying and addressing hate speech requires predictive models that can accurately classify content. This study proposes an analysis of hate speech on social media using machine learning techniques, Convolutional Neighbors (CNN) and K-Nearest Neighbors (KNN) By using these algorithms, and a model is developed to classify text from social media platforms that are full of either hate speech or non-hate speech. Data from multiple social media sources are used to train and validate the model.**

The accuracy, sensitivity, specificity, and area under the receiver operating characteristic curve (AUC-ROC) of the model are evaluated to measure its predictive performance. The methodology involves several steps: Data reprocessing, Feature Extraction, Train test split, Evaluation Metrix. Additionally, interpretability techniques are employed to elucidate the underlying factors contributing to the classification of hate speech, providing valuable insights for policymakers and social media platforms to design targeted interventions and manage content effectively. By harnessing the power of machine learning, this analysis offers a proactive approach to combat hate speech on social media, ultimately contributing to enhanced safety and well-being of users worldwide. The result CNN are better in analyzing than KNN.

Keywords—: Machine learning, Hate speech, Convolutional Neural Network, K-Nearest Neighbour, Twitter

I. INTRODUCTION

There are currently 221.5 million internet users in Indonesia out of 278.6 million people in Indonesia. which equates to roughly 79.5% of the country's total population. Social media activities take up most of this internet usage. Most internet users in Indonesia consists of Gen Z (34,04%) and Gen X (30.62%) totaling 65.06%. The remaining users are a mix of Gen Y, Baby Boomers, Pre Boomers.

This is demonstrated by the fact that 170 million people use social media, which accounts for around 83.9% of Indonesia's overall internet user base. The top 5 social media platforms utilized by users between the ages of 16 and 64 are Facebook, Twitter, Instagram, WhatsApp, YouTube, and Facebook.[1]

Social media provides a way to communicate online. For example, tweets sent on the app allow users to engage with each other. Both positive and negative tweets are possible. The fact that hates speech is frequently incorporated into negative remarks makes them problematic because the author may face legal repercussions. Hate speech happened often due to a lack of knowledge in differentiating between criticism and statements that might contribute to this crime. Therefore, it is essential to do early detection of sentences written before causing a criminal act due to public ignorance.[2]

Up to 125 social media accounts have reportedly received warnings from the virtual police for content that may contain hate speech components. With 79 accounts, Twitter has the most accounts among those that have received warnings. The period from February 23 to March 11, 2021, is when this number was reported. The government, in preventing and addressing issues related to hate speech, has issued regulations in the form of the ITE Law. Article 28 paragraph 2 of the ITE Law states that netizens are prohibited from spreading information intended to incite hatred.[3]

II. LITERATUR REVIEW

In this Technology Era where the internet can be accessed easily. Hate speech is a negative expression that targets specific individuals based on race, ethnicity, religion, gender, disability. Hate speech is not only manifested in direct and indirect forms but also it negatively contributes negatively to society to various aspects of psychological habits of spreading hate speech. It can be spread and reach a wider audience through social media. The advantage that social media provides is anonymity allowing individuals to spread hate speech more freely and without facing any charges and consequences. [4]

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#	Authors	Title	View	paper
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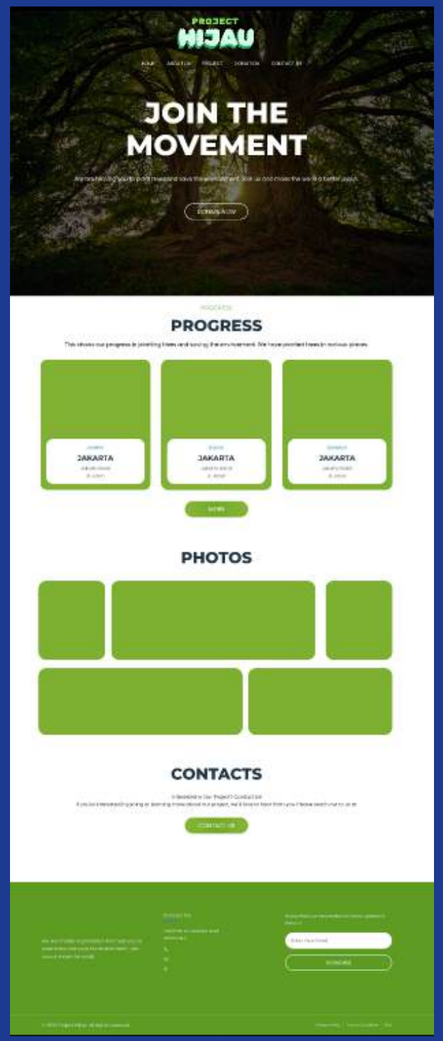

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THANK YOU