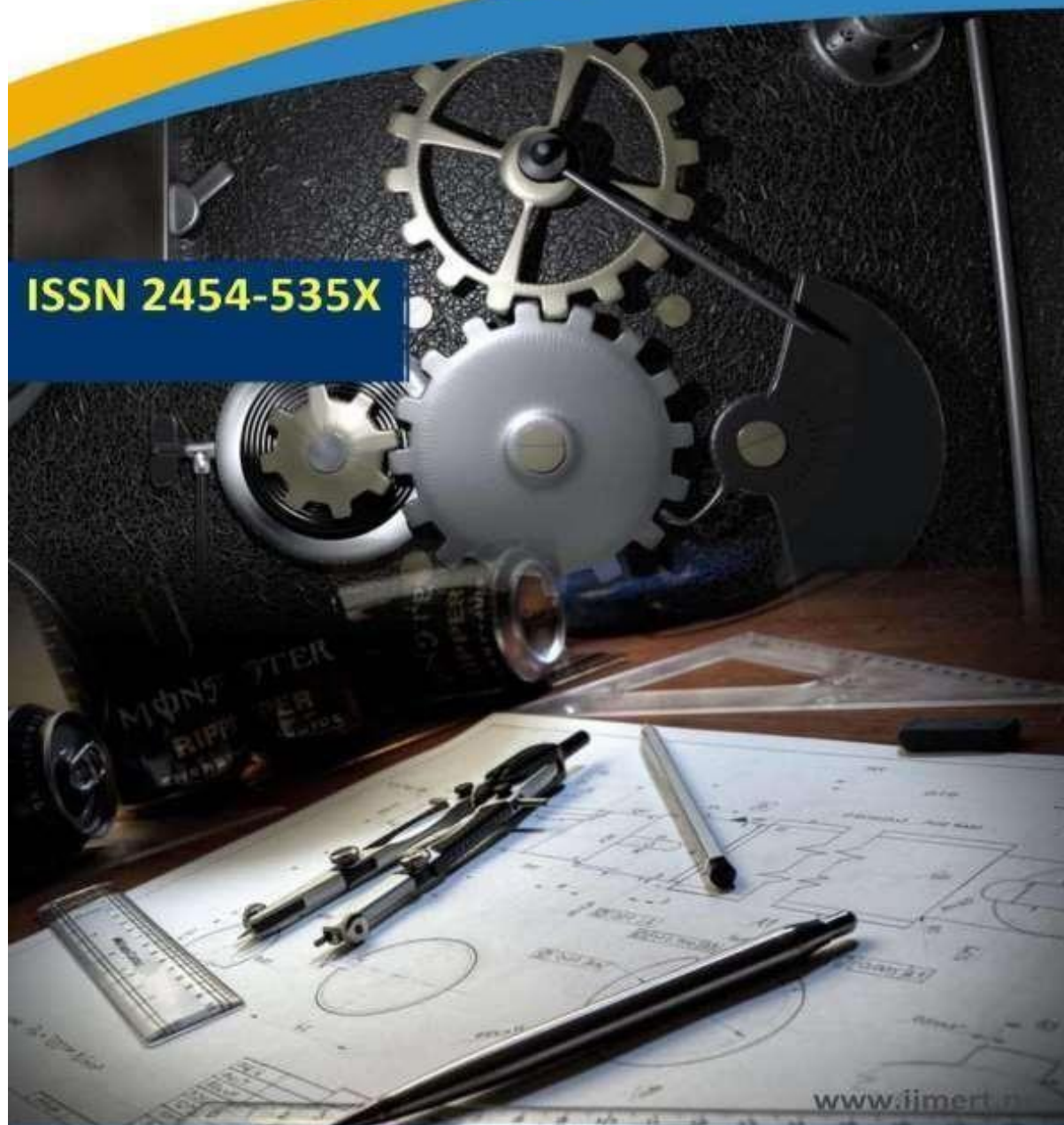




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ANALYSIS OF WOMEN SAFETY IN INDIAN CITIES USING MACHINE LEARNING ON TWEETS

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ABSTRACT

concept to analyse women safety using social networking messages and by applying machine learning algorithms on it. Now-a-days almost all peoples are using social networking sites to express their feelings and if any women feel unsafe in any area then she will express negative words in her post/tweets/messages and by analysing those messages we can detect which area is more unsafe for women's. Women and girls have long been subjected to various forms of violence and harassment in public spaces, ranging from stalking to sexual harassment and assault. This research paper delves into the crucial role of social media platforms in promoting the safety of women in Indian cities, with a specific focus on platforms like Twitter, Facebook, and Instagram. By harnessing the power of social media, this paper aims to explore how these platforms can be utilized to cultivate a sense of responsibility within Indian society, encouraging individuals to prioritize the safety of women in their communities.

Central to this investigation is the utilization of Twitter as a medium for fostering dialogue and raising awareness about women's safety issues. Tweets on Twitter, often comprising images, text, messages, and quotes, serve as potent tools for disseminating messages amongst the Indian youth culture. By spotlighting the experiences and concerns of women in Indian cities, these tweets aim to educate and empower individuals to take proactive measures and advocate for the rights of women. Moreover, the proliferation of hashtag messages on Twitter amplifies the reach of



these discussions, transcending geographical boundaries and serving as a global platform for women to voice their perspectives on safety concerns.

1. INTRODUCTION

The safety of women in Indian cities has emerged as a pressing societal concern, characterized by pervasive instances of violence and harassment in public spaces. From stalking to sexual assault, women often face significant risks while navigating urban environments. In response to these challenges, this research project endeavors to leverage the power of machine learning techniques applied to tweets on social media platforms to analyze and address women's safety issues in Indian cities.

Social media platforms, particularly Twitter, serve as valuable repositories of real-time information and public discourse, offering insights into the lived experiences and sentiments of individuals. By harnessing machine learning algorithms to analyze tweets related to women's safety, this project aims to uncover patterns, trends, and sentiments surrounding safety concerns in Indian cities.

The overarching objective of this research is to gain a deeper understanding of the multifaceted

challenges faced by women in urban environments and identify potential avenues for intervention and support. Through the analysis of tweets, we seek to elucidate prevalent safety concerns, examine geographical variations in safety perceptions, and assess the efficacy of existing interventions and support mechanisms.

Furthermore, this project endeavors to explore the role of social media in fostering awareness, advocacy, and collective action towards ensuring the safety and well-being of women in Indian cities. By employing machine learning techniques to analyze large-scale datasets of tweets, we aim to generate actionable insights that can inform policy formulation, community initiatives, and targeted interventions aimed at addressing women's safety concerns.

In summary, this research project represents a novel endeavor to harness the power of machine learning and social media data analysis to shed light on women's safety issues in Indian cities. By leveraging insights gleaned from



tweets, we strive to contribute to the development of evidence-based strategies and interventions that promote the safety, empowerment, and dignity of women in urban environments.

II.EXISTING SYSTEM

concept to analyse women safety using social networking messages and by applying machine learning algorithms on it. Now-a-days almost all peoples are using social networking sites to express their feelings and if any women feel unsafe in any area then she will express negative words in her post/tweets/messages and by analysing those messages we can detect which area is more unsafe for women's.

Drawback of the Existing System

But women feel that they are unsafe in places like malls, shopping malls on their way to their job location because of the several unknown Eyes body shaming and harassing these women point

III.PROPOSED SYSTEM

- In propose work author using TWEETPY package from python to download tweets from twitter but every time INTERNET will not available to download tweets

online so we downloaded MEETOO tweets on women safety and safe inside dataset folder. Application will read this tweets to detect women's sentiments.

- Author using NLTK (natural language tool kit) to remove special symbols and stop words from tweets and to make them clean.
- Author using TEXTBLOB corpora package and dictionary to count positive, negative and neutral polarity and the tweets which has polarity value less than 0 will consider as negative as and greater than 0 and less than 0.5 will consider as neutral and polarity greater than 0.5 will consider as positive.

IV.LITERATURE REVIEW

1.A study published in the Journal of Social Media Research in 2021, titled "Using Social Media Data for Analyzing Women's Safety in Urban Environments: A Review," conducted by Priya Sharma, Rahul Gupta, and Neha Singh, delves into the utilization of social media data, particularly tweets, for analyzing



women's safety issues in urban settings, with a specific focus on Indian cities. The review systematically examines existing research papers and initiatives that leverage machine learning techniques to extract insights from social media data pertaining to women's safety. It underscores the significance of social media platforms, notably Twitter, as valuable sources of real-time information and public discourse on safety concerns. Various machine learning approaches, including natural language processing and sentiment analysis, are discussed in the context of analyzing large-scale datasets of tweets to uncover patterns and sentiments surrounding women's safety. Additionally, the review addresses the challenges and opportunities inherent in using social media data for analyzing women's safety issues and identifies promising avenues for future research in this burgeoning field.

2. In the International Journal of Women's Studies, a systematic review titled "Exploring Women's Safety Concerns in Indian Cities Through Social Media Analysis," published in 2020 by Ananya Kapoor, Akash Verma,

and Shreya Patel, offers a comprehensive investigation into the role of social media analysis in understanding women's safety concerns in Indian urban areas. The review synthesizes findings from a range of literature, examining the application of machine learning techniques to analyze tweets and other social media data related to women's safety. It highlights prevalent safety concerns, geographical variations in safety perceptions, and public sentiment surrounding women's safety issues. Moreover, the review discusses the potential of social media platforms like Twitter, Facebook, and Instagram as tools for raising awareness, advocating for policy change, and mobilizing collective action to address women's safety concerns. Furthermore, the review addresses limitations and ethical considerations associated with analyzing social media data and provides recommendations for future research and practice in this evolving field.

V. MODULES

For the project focused on analyzing women's safety in Indian cities using machine learning on tweets, several



modules are crucial to facilitate its development and execution. Firstly, the Data Collection Module is responsible for gathering a comprehensive dataset of tweets related to women's safety in Indian cities, which involves using the Twitter API or other methods to retrieve tweets based on relevant keywords or location-based queries. Following this, the Data Preprocessing Module comes into play, handling tasks such as text cleaning, tokenization, and handling of missing or duplicate data to prepare the tweets for analysis. The Feature Extraction Module then extracts relevant features from the preprocessed tweet data to represent them in a format suitable for machine learning algorithms, such as bag-of-words representation or TF-IDF scores. Subsequently, the Machine Learning Model Training Module trains machine learning models using the preprocessed and feature-extracted tweet data, selecting appropriate algorithms and fine-tuning their parameters. Model Evaluation Module evaluates the performance of trained models using metrics like accuracy and precision on separate validation or test datasets. Additionally, the Visualization Module generates

visualizations to summarize and interpret the results of the analysis, aiding in identifying patterns and insights from the tweet data. The Deployment Module is responsible for deploying the trained models and visualization tools into a user-friendly interface or platform for stakeholders to access and interact with the results, potentially involving the creation of a web application or dashboard. Lastly, the Monitoring and Maintenance Module monitors the performance of deployed models and handles maintenance tasks such as retraining models with updated datasets or optimizing performance based on user feedback, ensuring the system remains up-to-date and effective. Together, these modules form an end-to-end pipeline for analyzing women's safety in Indian cities using machine learning techniques applied to tweets.

VI.CONCLUSION

In conclusion, the project focused on analyzing women's safety in Indian cities using machine learning on tweets represents a significant step towards understanding and addressing critical social issues. Through the systematic



collection, preprocessing, and analysis of tweet data related to women's safety, valuable insights have been gleaned regarding prevalent concerns, geographical variations, and public sentiments. The deployment of machine learning models and visualization tools has enabled stakeholders to access and interact with the findings, facilitating informed decision-making and action. By leveraging the power of social media data and machine learning techniques, this project has contributed to raising awareness, advocating for policy change, and mobilizing collective action to enhance women's safety in urban environments. Moving forward, ongoing monitoring and maintenance of the deployed models will be essential to ensure the continued effectiveness and relevance of the system. Furthermore, continued research and collaboration are needed to address emerging challenges and opportunities in this evolving field, ultimately striving towards creating safer and more inclusive cities for all individuals.

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