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***Submitted to:***

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**AI in social media**

### **Introduction :**

**Social media** is made up of websites, apps, and other platforms that allow users to share information and ideas with virtual communities through text, photos, videos, and more.Social media is a powerful tool that has completely changes the world and the way we connect, communicate to each other and also shares information.It become very important part of our lives,to connect with our loved one’s no matter where they are in this world.Some platforms of social media are : Facebook, Whatsapp, Twitter and Instagram etc.

**AI (artificial intelligence) in social media** refers using AI technologies to enhances social media platforms and strategies. AI can assist in generating social media posts for different platforms.It also help people to understand user experience according to the feedback the gave according to the posts. It also used to improve your content.It also helps in boosting customer engagement.AI-powered chat-bots and virtual assistants improve customer service by providing instant and accurate responses to user inquiries.

A recent study explored how AI can help everybody to decide that what they are watching in online platforms are **true or false**. AI learns from the user feedback and gives content according to the feedback for new data.AI can help people to avoid wrong information. A big advantage is that it allows everybody to control their choices.We situate our work in this literature related to detecting and dealing with wrong information on social media platforms, as well everybody is willing to make their decisions on their own.

**AI tools** like ChatGPT, Poe and Blackbox etc are getting famous, and many people talk about them. But we don't know what people feel about AI tools.People are worried about their privacy and some are not able to understand how to use these tools.First of all, we have to understand people's thoughts and then according to thoughts AI will help them in a positive way to meet their needs in future.We use methods like topic modeling and sentiment analysis to reveal people thoughts towards AI tools.

Today's social media is facing several serious problems. **Misinformatio**n spreads quickly, causing confusion and mistrust among users. Many people also experience mental health issues due to excessive use, leading to anxiety, depression, stress, and feelings of loneliness. Furthermore, social media becomes a platform for cyberbullying, where harassment and negative interactions can have a lasting impact on individuals lives. Moreover commercials while watching something annoys the user which can degrade content quality.

We can cope up with these problems using AI solutions like AI can detect false information and analyze content which reduces the spread of fake news. To support **mental health**, AI can monitor how people use social media and moniter their emotional health and suggest breaks when needed and dont show the data which may cause for depression. For cyberbullying AI can spot hurtful comments and alert controllers to take action quickly. It can also personalize ads making them less annoying and more relevant to users.

The world is converting from manual to digital rapidly, and AI is in the middle of this. AI make sure that machines think and response like humans.The relative work to do is we can do email responses using AI techniques to track user behaviour and response according to that behaviour using **UTM (Urchin Tracking Module).**

**Literature View :**

### **This article** explores what a personal AI can do on behalf of everyone to locate inaccurate information on social media. The AI observes how everyone responds to tweets and what they learn from it. Then it attempts to predict how everybody react on new tweets. So in this test everyone is using the I and everybody feedback and everybody sees it gets better over time. They found that the AI did shape what people thought. The idea is not to replace a human thinker, but to assist people in making better decisions when they are challenged with a mass of online posts.

**This study** examines public perceptions of AI technologies such as ChatGPT on social media platforms. Researchers gathered 34,000 comments from various groups. Individuals in tech-focused communities discussed the mechanics of AI, while those in non-tech groups expressed concerns about job loss. The study analyzed the overall sentiment of these comments, finding that tech groups exhibited more intense and varied feelings. This research contributes to our understanding of how people perceive AI.

**This pape**r explores how artificial intelligence (AI) affects social media. It shows that companies using AI for marketing make a lot more money than those that don’t. AI also helps keep user data safe and private. The paper suggests that social media companies should improve their AI tools, do more research on how AI can boost profits and focus on protecting users' privacy.

**This study** looks at how Tik-Tok users interact with AI to improve their experiences on the app. Through interviews, it finds that users like the personalized content AI provides and actively shape the algorithms to suit their needs. AI also helps users create content and connect with others. The research shows that the relationship between human and machine agency is important for user engagement on Tik-Tok. Overall, it highlights how AI changes the way users experience social media.

**The researchers** explores artificial intelligence (AI), especially machine learning, is being used in social media marketing. The researchers used a model called Unified Theory of acceptance and use o Technology (UTAUT) to understand how people accept and use new technology. They conducted a quantitative analysis with 100 people from different countries to see how their experience in marketing and knowledge of AI affect how they use AI tools. The findings reveal that AI features like understanding the audience, analyzing emotions in posts, and studying images help marketers create better and more personalized content. However, since the study had a small number of participants, the results are limited. Moreover, future research could explore AR(augmented reality) and other technology in social media marketing more deeply.

**Methodology:**

Methodology means the way you used to your research.

It explains how you collect your data, what tools you used for research, and how you analyzed it to find your final results.

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| **Area** | **What it does** | **Used in Daily Apps** | **Tools** | **Common**  **Alogrithms** | **Best**  **Alogrithm** |
| 1. Content Moderation | Blocks hate speech, Spam bad images and fake news | Facebook, Instagram,  TikTok, WhatsApp | Jigsaw AI,  Comment Blockers, AI filters | CNN, BERT, Logistic Regression | **BERT**-best for text (moderation, sentiment) |
| 1. Post Suggestions | Shows post, stories and reels you may like | Instagram, Facebook and YouTube Shorts | Movie Lens, Criteo ads | Matrix Factorization, Deep Learning | **Deep Learnin**g-to recommend posts |
| 1. Chat-bots | Auto-reply, help from business | Facebook Pages, Instagram and WhatsApp Business | Auto-reply bots, Chat-bots tools | RNN, Seq2Seq, Transformers | **Transforme**r-best for chatbots and translation |
| 1. Sentiment Analysis | Understands mood **(happy/sad/angry/silly)**  from your text | Twitter, Facebook  and Instagram Comments | Sentiment140, Emotion/Mood Analyzers | Navie Bayes, LSTM,  BERT | **BERT**-best for text (moderation, sentiment) |
| 1. Image/ Video Check | Detects Harmful images and Videos **(nudity and violence)** | Instagram, TikTok,  Facebook, WhatsApp | Hateful memes datasets, Image filters, Safety Checkers | CNN,  ResNet | **ResNet-**best for image and video detection |
| 1. Voice Recognition | Converts voice to text | Google Assistant,  YouTube, WhatsApp and Instagram **(voice messages)** | ASR Systems and  Voice to text apps | RNN,  Wav2Vec,  Deep Search | **Wav2Vec-**  best for voice  recognition |
| 1. Auto-Translation | Translates text or captions | YouTube, Facebook and Instagram | Google translate API, built-in translation tools | Seq2Seq, Transformers | **Transforme**r-best for chatbots and translation |
| 1. Trending Topics | Finds what’s going viral | Twitter, TikTok and Instagram | Topic Modeling, Hashtag checker | LDA, BERT, Clustering | **BERT**-best for text + **Clustering-** groups similar posts |
| 1. Face Tagging | Tags faces in photos | Facebook, Instagram | FaceNet  (limited due to privacy) | CNN,  FaceNet,  VGGFace | **FaceNet-** that accurately recognizes and compare faces |
| 1. Info Detection | Find name, places and dates in messages | Gmail, Google, WhatsApp **(links, numbers)** | BERT models, Info decetors, text scanners | CRF,  BERT,  SpaCy NER | **BERT**-best for text |
| 1. Security and Privacy | Detects fraud, fake accounts and protects messages | WhatsApp, Facebook and Instagram | End-to-end encryption, Spam alerts, Login alerts | Random forest, Isolation forest | **Isolation forest-** best for detecting fraud anomalies in security |

**References:**

* **Content Moderation –** Jigsaw Toxic Comment (2018), Hate Xplain (2021), Facebook Community Standards (2016–ongoing) -to detect and filter harmful content.
* **Post Recommendation –** Movie Lens (1998), Criteo Ads Dataset (2014), used by Instagram, Facebook, YouTube -it used for what users see on Instagram and other apps.
* **Chat-bots –** Facebook Wit.ai (2015), Daily Dialog (2017), WhatsApp Business API (2018) -used for automated response.
* **Sentiment Analysis –** Sentiment140 (2009), Go Emotions by Google (2021) -to understand user emotions and reactions.
* **Image/Video Moderation –** Yahoo NSFW Classifier (2016), Facebook Hateful Memes (2020) -used to detect hateful content.
* **Voice Recognition –** Mozilla Common Voice (2017), WhatsApp transcription feature (testing in 2023) -support voice based feauters
* **Auto Translation –** Facebook AI Translator (2018), Google Translate APIs (2006, AI updates in 2016) -used for voice translation
* **Trend Prediction –** Twitter trends (since 2009), IEEE NLP trend research (2020) -used for prediction.
* **Face Recognition –** LFW (2007), VGGFace (2015), Facebook tagging (2010–2021) - used for detection of faces on some common platforms.
* **Entity Detection (NER) –** CoNLL-2003 (2003), WNUT 2017 (2017), used by Google, Gmail, NLP tools -used for smart suggestions.
* **Security & Privacy** – WhatsApp encryption (2016), Meta fraud/spam AI (2020), Gmail spam filter (2007) -used for safety.

**Conclusion:**

**Artificial intelligence (AI)** is becoming more common on social media and it is affecting in many ways. It helps to detect **false information, understands feelings of everybody** and improve how everybody interact with social media platforms. AI also supports f**eedback response, content filtering and boosts marketing efforts**. While many of the persons appreciate these **benefits** and some still concerned about their **privacy** and the ethical side of AI. Research can show that how AI can influence people **thinking and behavior**, usually when platforms use **feedbacks** to improve their systems. Some studies are limited by small sample sizes, which means that more research needed. So we can use new technologies like **augmented reality (AR)**. Overall, AI changing the life of users and companies to connect in online platforms.