# Al in the Public Eye: A Comprehensive Sentiment Analysis of Public Opinion Toward Artificial Intelligence on Social Media Platforms.

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### Introduction

- Rapid Evolution of AI: Al technology is evolving quickly and generating significant public discussion on social media.
- Study Purpose: Conducts sentiment analysis of Al-related posts on Twitter, YouTube, and Reddit from 2017 to 2024 to evaluate public perceptions and attitudes. Through three steps:
  - Identify and classify users' sentiments (positive, negative, or neutral) towards AI in their social media posts.
  - 2. Extract and analyse users' opinions, concerns, and expectations regarding various aspects of AI, such as its impact on employment, privacy, and ethical considerations.
  - 3. Analyse the temporal dynamics of sentiment and opinion toward AI, tracking how perceptions evolve.

# 1. Data Collection & Sentiment Analysis



YouTube









Classification

negative neutral

52,256

61,302

19,446 positive

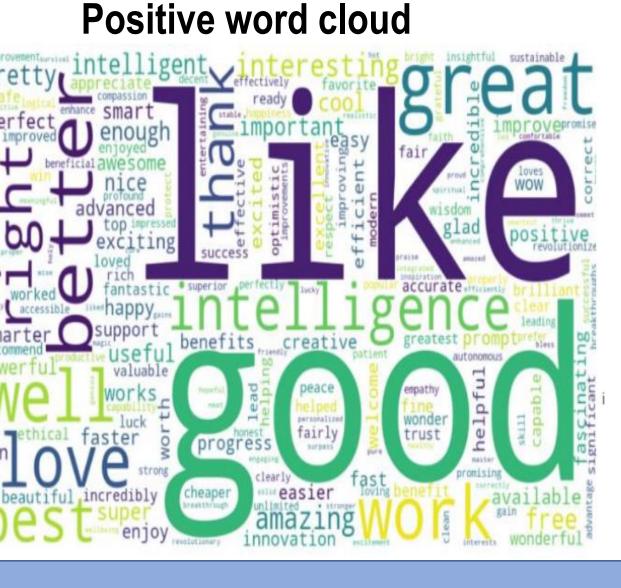
**Negative posts** 

133,004 social media posts between 2017 and 2024

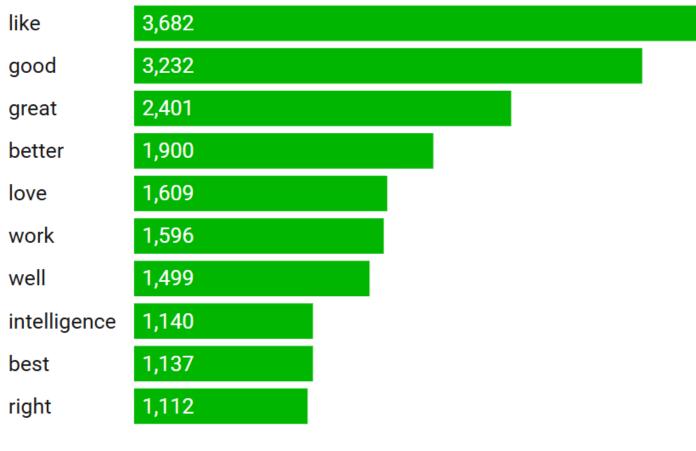
**Huggingface Transformer Model:** twitter-roberta-base-sentiment-latest

**Sentiment Distribution Count** 

#### Positive posts



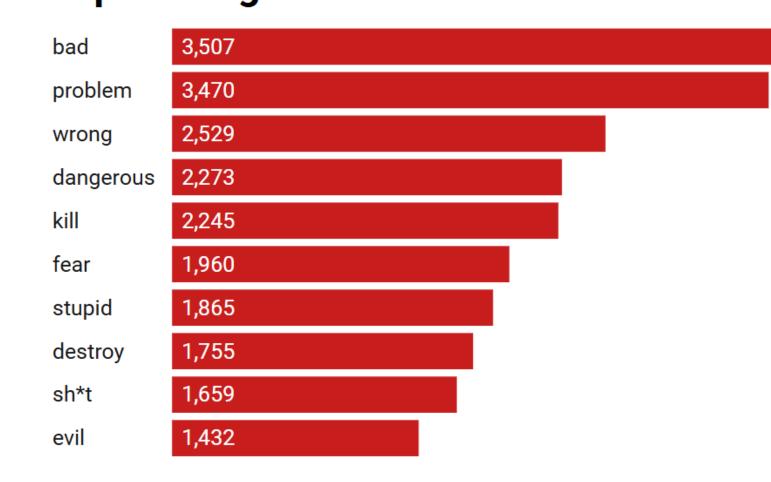




#### **Negative word cloud**

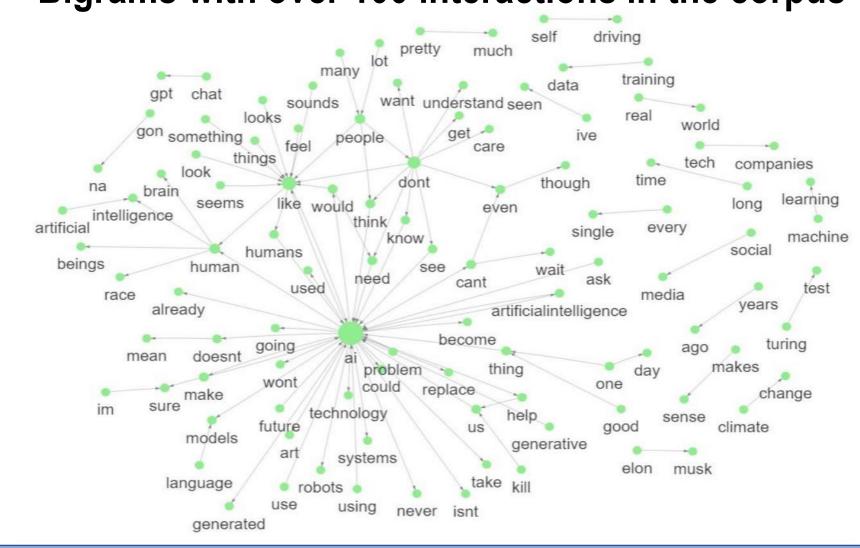


#### Top ten negative terms



## 2. Topic modelling

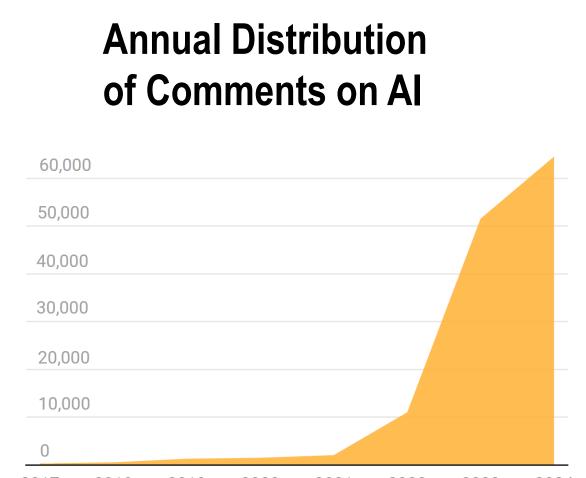
# Bigrams with over 100 interactions in the corpus

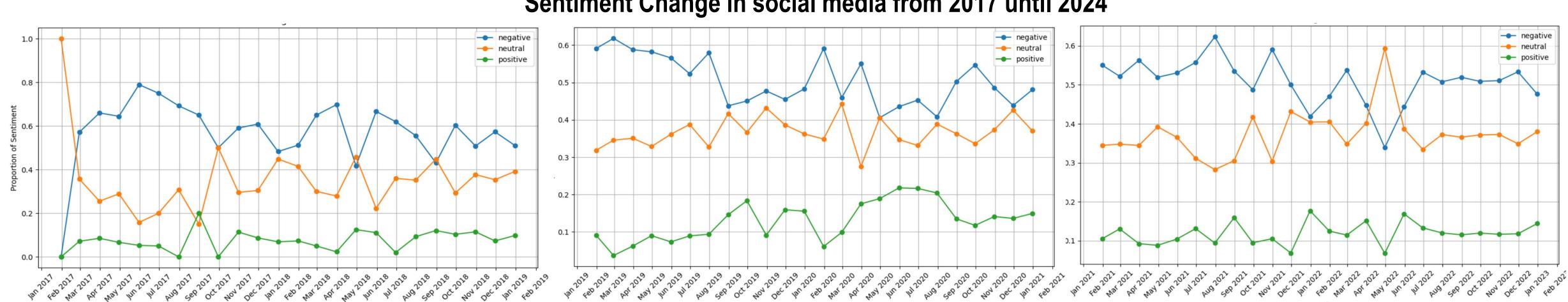


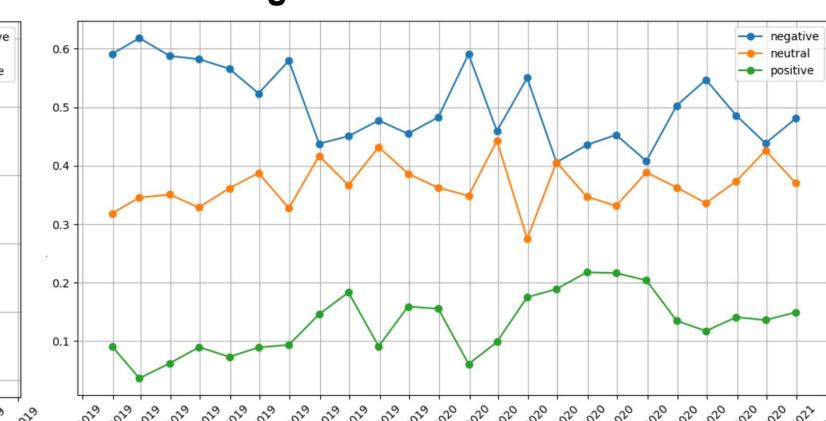
#### Sample of LDA Topic Distribution

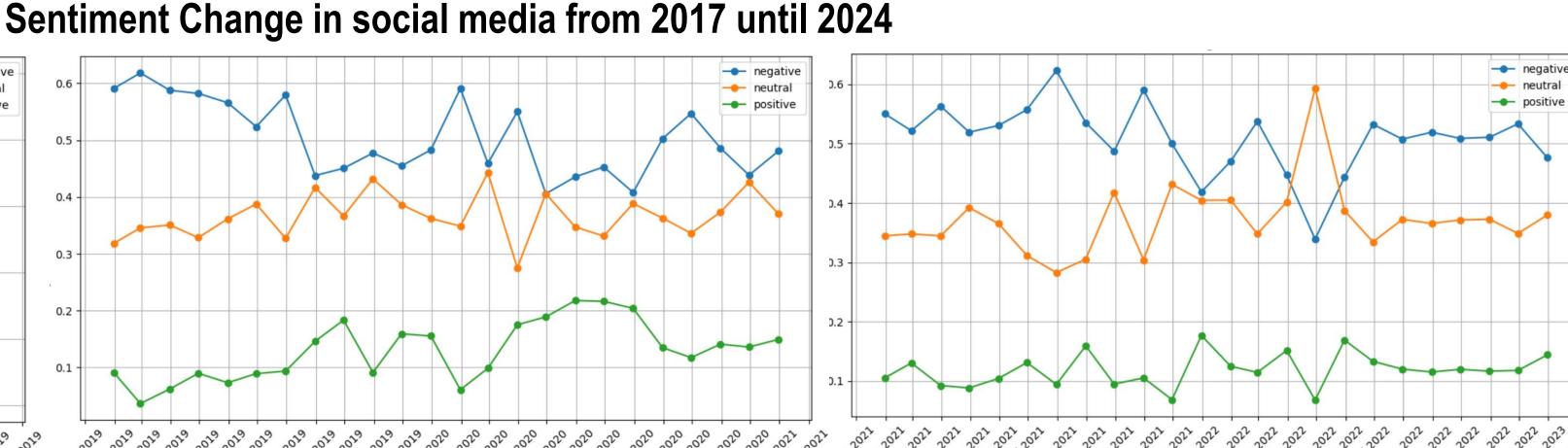
Discovered Topic/Theme	Keywords
General AI Technology and Applications	chatgpt, machine learning, potential, artificial intelligence, generative, data science, robotics, art
Al and Spiritual/Philosophical Concepts	god, people, life, jesus, know, love, believe, world, evil, created, gods, man, christ, beast, spirit
Al and Human Consciousness	human, humans, intelligence, us, consciousness, think, become, life, conscious, emotions
Al in Education, Law, and Copyright	data, school, law, copyright, kids, students, fair, used, article, way, legal
Al's Impact on Jobs and Creative Industries	jobs, people, job, work, replace, music, replaced, new, artists, take, art
Al in Business, Economy, and Job Market	companies, money, people, tech, work, company, cost, market, pay, jobs, less
User Experiences with AI	like, chatgpt, time, good, didnt, could, feel, asked, gpt, person, used

# 3. Temporal Analysis









#### Suggestions

- Public Education: Create Al programs to inform the public about its technical, ethical, and societal implications.
- Clear Communication: Ensure tech companies explain Al's capabilities and limits to set realistic expectations.
- Ethical Guidelines: Establish ethical standards for Al development to address safety and ethical concerns.
- Public Sentiment Tracking: Conduct regular analysis of public opinion on AI to identify trends and concerns.

#### **Future work**

- Global Perspectives: Research should analyse social media data across different languages and cultures to gauge global AI perceptions.
- Demographic Influences: Study how factors like age, education, and profession impact perceptions of AI for better-targeted educational efforts.
- Domain-Specific Studies: Investigate AI perceptions in key sectors such as healthcare, education, and finance to develop customized AI strategies.
- **Direct Interactions**: Examine how user experiences with AI systems (like chatbots) influence their attitudes toward AI technology.