

# Analysis of Societal Occupation Shift in Response to AI Development that has the Potential to Eliminate Jobs in the World

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## Introduction

The rapid advancement of artificial intelligence (AI) has sparked both excitement and concern about its potential impact on society. As AI systems become increasingly sophisticated, they are capable of performing tasks that were once exclusive to humans, raising questions about the future of work and the skills that will be in demand.

This research paper aims to analyze public sentiment on Twitter regarding the potential for AI to eliminate jobs. By analyzing tweets related to AI and job displacement, we can gain insights into the hopes, fears, and expectations of individuals and communities as they grapple with the changing landscape of work in the age of AI.

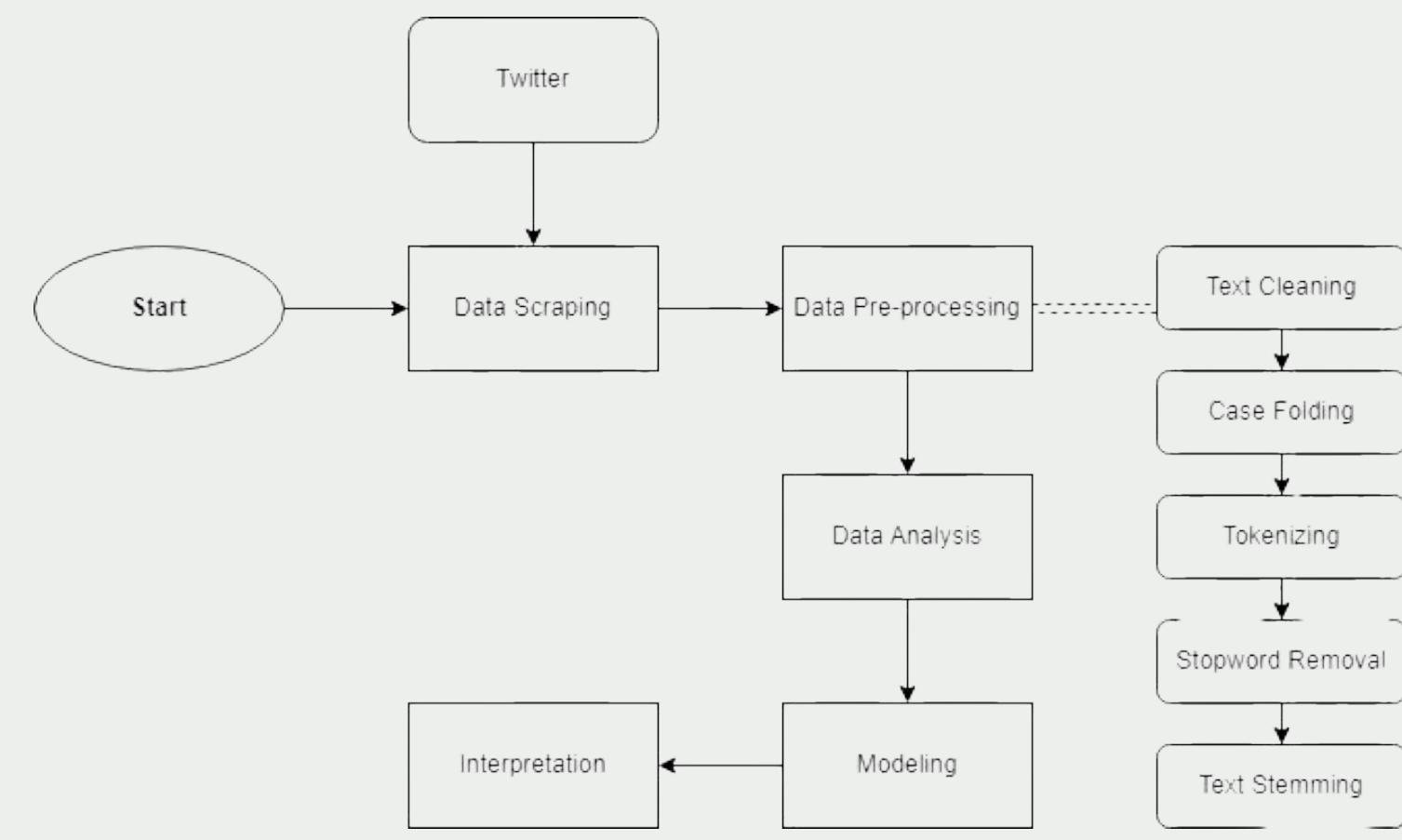
This study will employ sentiment analysis techniques to examine the emotional tone and opinions expressed in tweets about AI and job displacement.



## Literature Review

1. The results of the study by Edward, Manav and Robert (2020) provide substantial evidence that AI may complement rather than replace human labor, at least in the short term.
2. Michael Webb's (2019) research, AI is much more likely to affect highly educated and older workers than these earlier technologies.
3. The study by Ali Zarifhonvar (2023), the article provides evidence that both the positive and negative impacts of Generative AI (such as Chat GPT) on the labor market are expected to be significant. On the one hand, it is expected that it will lead to the displacement of workers.
4. Research by Daron Acemoglu, David Autor, Jonathon Hazell and Pascual Restrepo (2022), explains that as AI-exposed firms adopt AI, they simultaneously reduce hiring in non-AI positions and change the skill requirements of the remaining positions.

## Methodology



## Result & Discussion

### Collecting Data

We retrieve data from Twitter social media using selenium bot. The results of scraping data obtained are **185 tweets** in English from twitter's popular page with the keyword 'Artificial Intelligence will'.

### Text Cleaning

Text	Cleaned Text
So apparently AI will be called "Apple Intelligence" and not "Artificial Intelligence" in iOS 18	so apparently ai will be called apple intelligence and not artificial intelligence in ios
"AI Will Replace Tasks, Not Jobs," Says Justin Trudeau Canadian Prime Minister Justin Trudeau recently shared his insights on the impact of artificial intelligence during an interview on Hard Fork's YouTube channel. When asked about the potential for AI to cause mass	ai will replace tasks not jobs says justin trudeau canadian prime minister justin trudeau recently shared his insights on the impact of artificial intelligence during an interview on hard forks youtube channel when asked about the potential for ai to cause mass

### Case Folding

Cleaned Text	Case Folding
so apparently ai will be called apple intelligence and not artificial intelligence in ios	so apparently ai will be called apple intelligence and not artificial intelligence in ios
"AI Will Replace Tasks, Not Jobs," Says Justin Trudeau Canadian Prime Minister Justin Trudeau recently shared his insights on the impact of artificial intelligence during an interview on Hard Forks YouTube channel. When asked about the potential for AI to cause mass	ai will replace tasks not jobs says justin trudeau canadian prime minister justin trudeau recently shared his insights on the impact of artificial intelligence during an interview on hard forks youtube channel when asked about the potential for ai to cause mass

### Tokenizing

Case Folding	Tokenizing
so apparently ai will be called apple intelligence and not artificial intelligence in ios	['so', 'apparently', 'ai', 'will', 'be', 'called', 'apple', 'intelligence', 'and', 'not', 'artificial', 'intelligence', 'in', 'ios']
"AI Will Replace Tasks, Not Jobs," Says Justin Trudeau Canadian Prime Minister Justin Trudeau recently shared his insights on the impact of artificial intelligence during an interview on Hard Forks YouTube channel. When asked about the potential for AI to cause mass	['ai', 'will', 'replace', 'tasks', 'not', 'jobs', 'says', 'justin', 'trudeau', 'canadian', 'prime', 'minister', 'justin', 'trudeau', 'recently', 'shared', 'his', 'insights', 'on', 'the', 'impact', 'of', 'artificial', 'intelligence', 'during', 'an', 'interview', 'on', 'hard', 'forks', 'youtube', 'channel', 'when', 'asked', 'about', 'the', 'potential', 'for', 'ai', 'to', 'cause', 'mass']

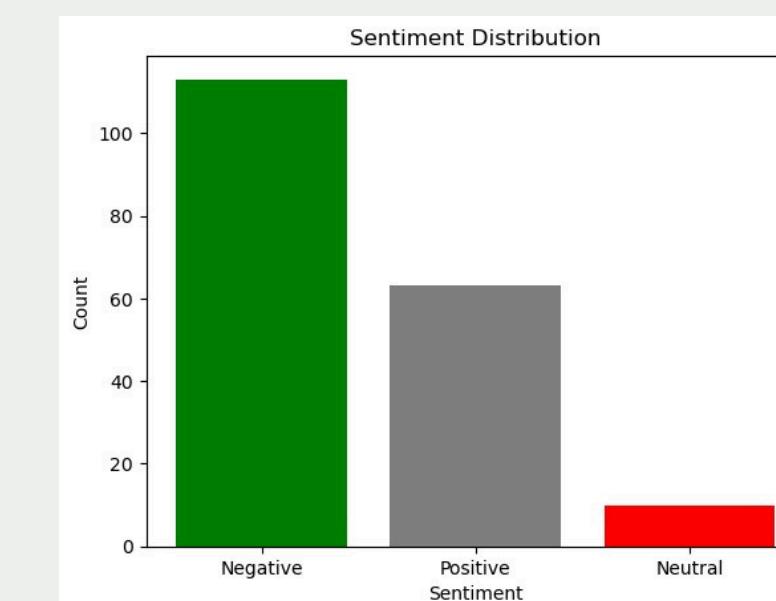
### Stopword Removal

Tokenizing	Stopword Removal
['so', 'apparently', 'ai', 'will', 'be', 'called', 'apple', 'intelligence', 'and', 'not', 'artificial', 'intelligence', 'in', 'ios']	['apparently', 'called', 'apple', 'ios']
['ai', 'will', 'replace', 'tasks', 'not', 'jobs', 'says', 'justin', 'trudeau', 'canadian', 'prime', 'minister', 'justin', 'trudeau', 'recently', 'shared', 'his', 'insights', 'on', 'the', 'impact', 'of', 'artificial', 'intelligence', 'during', 'an', 'interview', 'on', 'hard', 'forks', 'youtube', 'channel', 'when', 'asked', 'about', 'the', 'potential', 'for', 'ai', 'to', 'cause', 'mass']	['replace', 'tasks', 'jobs', 'says', 'justin', 'trudeau', 'canadian', 'prime', 'minister', 'justin', 'trudeau', 'recently', 'shared', 'insights', 'impact', 'interview', 'hard', 'forks', 'youtube', 'channel', 'when', 'asked', 'potential', 'cause', 'mass']

### Text Stemming

Stopword Removal	Stemmed Text
['so', 'apparently', 'ai', 'will', 'be', 'called', 'apple', 'intelligence', 'and', 'not', 'artificial', 'intelligence', 'in', 'ios']	['apparently', 'called', 'apple', 'io']
['ai', 'will', 'replace', 'tasks', 'not', 'jobs', 'says', 'justin', 'trudeau', 'canadian', 'prime', 'minister', 'justin', 'trudeau', 'recently', 'shared', 'his', 'insights', 'on', 'the', 'impact', 'of', 'artificial', 'intelligence', 'during', 'an', 'interview', 'on', 'hard', 'forks', 'youtube', 'channel', 'when', 'asked', 'about', 'the', 'potential', 'for', 'ai', 'to', 'cause', 'mass']	['replace', 'task', 'job', 'say', 'justin', 'trudeau', 'canadian', 'prime', 'mister', 'justin', 'trudeau', 'recently', 'shared', 'insight', 'impact', 'interview', 'hard', 'fork', 'youtube', 'channel', 'when', 'asked', 'about', 'the', 'potential', 'for', 'ai', 'to', 'cause', 'mass']

### Data Visualization



From this bar plot we can see more than **100 tweets** are considered negative, **60 of the tweets are positive** and only a few are neutral.

Based on this word cloud, there are evident concerns about the future of work, with AI seen as potentially replacing human roles. Words like "future," "next," "human," "technology," "new," "create," "develop," "company," "tech," and "data." indicate this uncertainty and worry.

Overall, this negative sentiment indicates fears about AI replacing humans, uncertainty about the future of work, and pressure to quickly adapt to technological changes.

## Conclusion

Through sentiment analysis of a dataset of 185 tweets, we found a predominance of negative sentiment, indicating widespread concern about the potential for AI to displace human workers. Qualitative analysis of tweets with strong negative sentiment revealed several recurring themes. These findings suggest that public discourse on Twitter is largely characterized by anxiety and skepticism about the future of work in the age of AI. This sentiment may be driven by factors such as media portrayals of AI, personal experiences with automation, and a lack of understanding about the potential benefits of AI.

## References

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