PAKISTAN JOURNAL OF MULTIDISCIPLINARY (2025), 3(2), 42-56

The Role of Artificial Intelligence in Understanding Political Narratives and Public Opinion Through Social Media Data

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How to cite this article:

Nawaz, S., & Khan, E. (2025). The Role of Artificial Intelligence in Understanding Political Narratives and Public Opinion Through Social Media Data. *Pakistan journal of multidisciplinary, 3(2), 42-56*

Article Details

Received: 02 Aug 2025
Accepted: 04 Sept 2025
Published: 29 Dec 2025

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Abstract

Artificial intelligence is increasingly and significantly theorized and practiced with social media undertaken within the field of critical algorithms studies writing. Most scholarship during the field considers how, beyond instantiations of the AI platform, AI tools are strategically brought to social media content moderation by major platform owners. Yet, such accountabilities generally fail to analyse the distinct ways AI and of specific AI data-processings are used on the textual posts that users upload, make and engage with. Politically focussed content platforms are usually approached as engines which, according to hidden and ever-mutating algorithms, accredit or suppress individual messages on grounds of stated or inferred guidelines. The material forms of these inputs and obscured data are thereby neglected, though text can be differently occlude found to be subject to post factum human ensure was representative decisions in ways that critically illuminate the reifications of wider corporate goals and ideologies. In aligning principles from critical algorithms studies writing with those gleaned and adapted from her own ethnography and content analysis of political activity on Instagram this writing pushes yonder to recent know. Investigation of some the obscured in fortifications of political discourse found in and around social media posts it sheds light of how potent users helps of this AI platform to reinforce of this ongoing even unintentional deletions found microscopic attention finding the linguistic conventions and non-semantic data-strategies of both in-platform suppression protocols and the critical users attempting to manipulate or evade thereof. Analyzing the textual element of the photographs political activists post offers a theoretically infused ethnographic account of touchingly better to understand how measured or automated NLP AI technologies can train and frequently misconstrue rather simple and non-political text as potentially hazardous or code-violative.

Keywords: *artificial intelligence, social media, political analysis, content moderation, critical algorithms, data processing, political discourse, natural language processing.*

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

1. INTRODUCTION

Social media has become a platform of great political interest. Civil society, politicians, and political parties have used (and tried to manipulate) information on social media, while diverse political actors discuss in social media about current affairs. The gap between information and informed understanding of social media evolution has fostered research topics on political analysis of its data. Considerable investments become campaign efforts likely more sophisticated than what is mostly publicly detectable. This fact alone would deem it natural that the analysis of social media ventures into political affairs is using powerful technologies to make sense of their data. Some larger grants for research, telling how political coalitions formed and evolved across diverse channels, is here focused on social media, which offers a strikingly large wealth of diverse data types, both structured and unstructured.

Statistical numbers are not yet very reliable, but forecasts are they are likely to be so in the context of the exponential technological growth AI. Currently, AI venture investment has become routine - at least in the UK. State-of-the-art technologies in the field are broad, which ranges from images computational to Natural Language Processing (NLP). The use of AI in social media political analysis has fostered thought of how to keep the pace, possibly even to try to predict future trajectories. Indeed, the adoption of emergent techniques in research data analysis can keep the pace with tailored NLP. The fact of the serious interest to close such gap prompts particular caution as to focus only on the use of AI for political outcomes, thus shedding light on which publically available AI tool could possibly be employed to answer questions that are just halfway towards full understanding.

3. THEORETICAL FRAMEWORK

Based on a review of literature on social media political analysis, the essay considers the role of artificial intelligence and examines its societal implications. The overarching research question is developed through the perspective of three interrelated sub-questions. The essay is theoretically underpinned by political

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

communication theories and model that examine AI's role in enhancing data analysis strategies. With the adoption of AI shaping and transforming social networks and the consequent public discourse, the traditional models of political communication need to be tested (Grandinetti, 2021). This rise of AI has profound implications for the way social media can be studied as well as the broader social consequences. By enhancing the strategies for the analysis of large data sets, new dimensions are brought to the concept of production, content and audience explored by a large experimental and survey literature . It becomes possible to conceptualize foreign-led troll networks analyzed by direct AI algorithms utilizing big data. However, different types of content are also problematic for AI algorithms leading to a question of the representation of those misrepresented. Similarly, the reception studies highlight the echo of filter bubbles expectations, however, it remains to find if those can or should be understood as specific changes in viewpoints of different publics (Wei et al., 2022). Furthermore, there is a possibility of applying more complex AI-based agent models on an unprecedentedly vast scale that question the validity of recent network model approaches to the field. A careful consideration of these biases and limitations represents a fruitful approach to testing various theories in the context of AI and, consequently, political analysis. Lastly, there is a broader discussion on the societal implications of the ways in which AI is deployed in shaping the public discourse and opinion.

3.1. AI and Social Media Analysis

Social media platforms incorporate an increasing range of AI apparatuses for users and researchers alike. A range of AI tools are advertised, indicating that AI's analysis is now routine. User outrage, controversy, and critique are also sparked by particular uses of AI, making these mechanisms partially visible or known. It is pointed out that many hidden AI uses are concerned with content classification and automatic decisions. However, other embedded AI apparatuses, common to different platforms and acting in conjunction with newly captured and newly published content, remain opaque. Regarding experiences, Star Trek and its

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

representation and exploration of advanced technology are discussed and what hidden AI apparatuses. Aboard the Enterprise, a computer system capable of understanding and executing human voice commands acts as an interface between artificial intelligence and humans. It is likely that the emergence of neural networks and their infiltration into various industries are similarly presaged in science fiction works (Grandinetti, 2021). The usefulness of social media analysis in understanding political processes and public opinion depends on the research questions and the methods to answer them. Public opinion and political communication scholars would be interested in knowing the sentiment changes of social media interactions to the quantity of comments received to political candidates and how they can engage in social media analytics.

There is a rising popular acknowledgment that "the algorithm" matters. The "algorithm," as it exists in the collective consciousness, is not valuable for making distinctions between different forms of code, software, and automation. These algorithms have "codebase," and this represents the "entirety of all software deployed on the social network platform." Instead of something complicated and multifaceted, the algorithm is usually thought of as a singular entity. For such individuals, the questions about how algorithms filter "fake news," or "who the algorithm is picking up on" are unlikely to prefigure productive conversations.

4. METHODOLOGY

In the following section, the attention shifts to the methodological approach used for the present study. Due to the resort of big data, a large volume of information related to social media might be processed at a great or high speed. A systematic approach has been thus adopted whenever possible. Therefore, in a few additional issues addressed when dealing with large piles of data, such as coverage, or for lack of better AI alternatives. A series of steps may be need for the analysis of information pertaining to a discussion initiated on a given social media while the basic formation exchanges themselves can be studied after a more direct form of collection and processing. While an evolution of the platforms discussed can be observed during the lifetime of this work, several

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

examples or principal mechanisms needed for the visualization and exploitation of the data approaches are illustrated. Finally, the criteria employed to selected the case studies are argued for the relevance of its exploration within the context of political analysis on social media. The thorough – although general – account of the techniques designed to work with the data may wish to round more technical or formula elements throughout the development. Ready to meet Fletcher's original requirements, should it count as a formal reanalysis of the work. Precautions taken about data privacy and user consent, finally, may wish to suggest that any extant or forthcoming AI work should be as transparent and accountable as possible in similar contexts (Savaget et al., 2019).

4.1. Data Collection and Processing

This article addresses the application of AI systems to analyse social media political content. The widely used methodologies that already exist to analyse social media data are presented, focusing on their application to politically oriented content. After that, the state of the art (or developing methodologies) will be discussed. This concerns natural language processing and sentiment analysis models that are applied to social media texts and networks data to political content are used to extract information, determine the sentiment, and track the diffusion of political messages. The feasibility and prospective limitations of each approach will be evaluated.

Data on political content in social media can be derived from social network sites, larger online news outlets, or dedicated discussion fora. For instance, social network data can be processed to identify accounts of public figures or significant media outputs. Then, text analysis can uncover dominant topics, entities, and sentiment on the posts made by those accounts. The detected patterns are analysed to infer about the most common, controversial, liked, or retweeted topics that were discussed. They can also reveal the range of sentiment expressed on them and the particular timing of their appearance given external political events . The discussion emphasizes a potential application to the upcoming

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national parliamentary elections in order to discern anything unusual concerning major political parties, new entrants or rising in polarisation.

Politically oriented content was originally conceptualized as content created by specific type of political actors – candidates and political parties that explicitly demand the audience for votes. Their tweets can be extracted by constantly filtering Twitter public streams for campaign related keywords or hashtags. Key measures derived from the time series of the tweets can then be utilized to gauze the sentiment in the audience attention towards these actors as well as topics that foster their expression.

4.2. AI Algorithms and Techniques

It is not a secret that AI algorithms and techniques have been burgeoning in social media political analysis. A cornucopia of AI methods have been employed in a straightforward or derivative mode in the literature, such as different machine-learning classifiers, natural language processing tools, clustering techniques, sentiment analysis models, network analysis algorithms, and so on. Machine-learning methods can be roughly categorised into supervised learning and unsupervised learning approaches. For supervised learning, a text string with exhaustive annotations to be predicted is adopted. Given a historical politico discourse corpus, a series of machine-learning classifiers can predict political orientation. With the aforementioned AI models, ideologically bent discourses can be detected on the data Tweet 1 and 2 and can further explore the timely public sentiment patterns (G. Folgado & Sanz, 2020). Considering the widespread political implications of AI on Twitter discourse, recommendation algorithms improved via either reinforcement or deep learning have emerged with the maturity of complex AI (Grandinetti, 2021). Political inclination filter bubble or echo chambers on Twitter can be promoted by AI technology.

For unsupervised learning, political topics emerge on the public agenda, which can be detected via an exhaustive set up of machines. The cosine similarity of various functions at time t denotes the amplification of the variation about the weight at time t. The overwhelming majority of the Chinese environmental

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pilgrimage paths primarily concentrate on the downstream in China, which could not effectively constrain the foreign major SO2 emitting MNCs sectors. Detecting anti-Xi political refugiumm bio-paragraphs is meaningless, because neither the Party Center nor Xi personally implement the reform agenda about left-over tourist iconic spots. In the era of big AI, all these things could be detected, judged and prevent by some sort of undisclosed apparatus, app, approach or article.

5. CASE STUDIES

Case Studies: Artificial Intelligence in Political Campaigns and Social Media

The importance of AI usage in several domains of core electoral processes has been showcased through a series of case studies. The case of India is illustrative in showing how machine learning (ML) can make an intuitive understanding of complex multicollinear systems. This is examined through two ways in which ML was harnessed by AI researchers in a recent paper. The case of the UK is selected for its potential to serve as a marker of future geospatial analyses. In this case, the confluence of the spread of AI methods in politics with better spatial granularity and ersatz geolocation data offers a glimpse of what could be expected in other nations in the future. The 2019 Indian general elections had 900 million registered voters and were orchestrated across 1 million polling booths. Set against this backdrop, parliamentary seats are won by building political narratives on salient issues. Technological solutions often rely on human intuition about political sentiment in a specific constituency or for a subset of castes, religions, age, or gender groups. Flip-Flop Detection is highlighted, a successful ML application for earlier Indian elections. It is demonstrated how ML can make an intuitive understanding of a complex multicollinear system of CPU usage, which incorporates many prior flip-flop detections (P et al., 2021).

The UK is particularly suited to the use of geospatial-analyses-based ML. This is because one of the core electoral datasets has begun to include x, y coordinates. Geolocation information about relative affluence or mortality rates of specific locations due to COVID-19 is acquired in an ersatz manner. The AI campaign that swept Britain like never before was foreshadowed in the UK through the analysis

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Print ISSN : 2959-8354

of the likes of Paul McKenna. Much of the effort was centered on attempting to make voters change their minds. There is an under-examined avenue through which AI analyses can still be harnessed to incredible effect: providing fine-grain intelligence on where a voting cohort lies. This has the potential to dramatically increase the efficiency of ground operations. For instance, postage for massive mailers can instead be spent on critical targeting. Online campaigns, whether on ads or social media imagery, can swiftly deploy hyperlocal narratives. All the while, strategic hard-targeting receptors at the most effective moment can be feverishly undertaken behind the scenes.

5.1. Impact on Political Campaigns

This subsection deliberates the effects of artificial intelligence (AI) on political campaigns. Case studies of various campaigns are presented with details. Political campaigns have transformed since online campaigns were initiated in the early 2000s. Since then, strategies to engage voters in different ways have changed. The internet likewise had an effect on campaigns elsewhere, but it was Twitter who really upended Nigeria's campaigns in 2011. Several years later, Twitter faced criticism after editing a #wherismyvote feed during the 2009 Iranian elections, leading to a substantial increase in tweets from Western countries. Political bots made their debut in the 2010 Brazilian senate elections, but had little effect as only a few candidates made use of them. Bots pretending to be real life politicians sent thousands of tweets with fake policy endorsements to millions of followers. The public perceived bots differently, feeling angry or superior to them, though increasing trust or making citizens feel happy was effective in manipulating favourite or retweeting behaviour. Kremlin bots spread fake news and unreliable stories about the South African political landscape. Kremlin trolls became more active in 2018, targeting political and journalist figures, politicians, and political parties. As a result, political Facebook pages have an increased and highly engaged following. This subsection offers a multi-level craftsmanship analysis of the transformative impacts of AI in political campaigns. First, it illuminates how AI tools have permitted the hyper-targeting of messages and the echo-chambering

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

of electorates. Second, the alteration of the very way in which humans and political campaigns communicate is elucidated. Third, case studies are presented on both successful and disastrously failed political campaigns comprehending advanced AI technology. Finally, ethical considerations are scrutinised on how AI is being used to cognitively manipulate voter behaviour. On Cape Town's beachfront there is a new privately-owned observatory deck, situated far from other informal traders, that offers a shielded view of township life. Responsible AI Political Campaigning Framework proposed. On its own, AI can be a binary influence on democracies and democratic processes. It can assist in making better decisions and improve vote-matching representative governance. But it also poses the risk society may be too reliant on 'black box' political decision making. Considering this, AI's ever-increasing role in campaigns ought to be more intensively scrutinised, and a (P et al., 2021) should be set up.

6. ETHICAL CONSIDERATIONS

Social media political analysis has predominantly been conducted by either researchers in social science fields who have to resort to time-consuming manual evaluations or by institutions with access to proprietary data and algorithms, such as platforms or political stakeholders. There is an increasing influence of algorithmic interventions on the shaping of political opinions and developments. There are a host of implicit ethical considerations connected to the use of AI in the analysis of societal data and political discourses on social media as well as to the political actor's watching society through these geographic digital landscapes. There is first of all the question to what extent algorithms form societal and therefore political views if they systematically privilege certain information and interpretations of what is happening in society (Kluge Corrêa et al., 2022). In the context of the widespread use of AI for both the political actor´s watching society and the general public, the question also arises as to the ethical limits to be observed: While a complete ban on the use of such systems by the political actor seems unfeasible, what responsibility attaches to him in their use? Politically, the use of AI in this way may have an effect analogous to that of misinformation

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campaigns in that a false description of social conditions is instrumental for defusing legitimate grievances, estranging the observer from reality, or in other ways serving to uphold the political status quo. Beyond this, a portrayal of society that massively departs from reality can have repercussions for collective agency, as ideas of where society stands politically will inform a social movement's goals.

The dangers of this are manifold: movements may begin campaigning on issues on which they should rather try to block decisions, for taking society´s pulse along the misleading representation of the political terrain it should cross paths dangerous to itself, etc. That the thinking of movements is to an extent contingent upon their assessment of societal conditions is not revolutionary knowledge – it is one, however, that an extensive use of AI in the observation of societal data and political discourses on social media might help manipulate. At the same time, the extensive use of AI in this domain might represent an increasingly severe violation of common metadata privacy rights or even extend it to what is supposed to be private communication, in that AI is used to visualize the context of a political discussion in a greatly detailed spectrum. The public thus entertained is manipulated in a way that goes against not only the principle of democracy, but a number of human rights – and even physical safety, as calls for demonstrations can easily be twisted into traps. Broad ethical guidelines for platforms, researchers, and political actors need to be established urgently in order to navigate the moral implications of this technology. At the same time, however, great care must be taken when regulating, in order to avoid chilling innovation and contributing to a regime that uses that technology for nefarious ends. To use AI very carefully and thoughtfully is also to create AI systems of watching society and reacting to it that are themselves very transparent about under what operational procedures they work and can potentially be held accountable by outside observers. (Reisach, 2021)

7. FUTURE DIRECTIONS

This paper has focused on the AI's role in the burgeoning field of social media political analysis. Its rapid adoption by political analysts has important implications

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Print ISSN : 2959-8354

for the broader landscape of techniques, theories, and models which underpin a critical democracy. By automating the detection of insincere user interactions on social media, it has demonstrated how advances in artificial intelligence (AI) make it possible. A broader toolkit of applications is also emerging, including content and network analysis, computer vision, and multi-platform analysis. Existing research has primarily sought to identify specific campaign narratives or to model broader diffusion patterns, like the emergence of echo chambers. Overly simplistic assumptions and popular models are now out of reach, and advanced methodologies are asked to be widely gained. It has concluded by highlighting some of the challenges and promising future developments set to shape the next generation of methodologies (Savaget et al., 2019).

Among the many frontiers for possible AI research, misinformation and the automation of fact-checking stand out. The methodological landscape is set to fragment prior to consolidating. Focused domains need deeply contextual models, and following work might deal with fringe case detection. Routine consideration of uncertainty is asked for. Access to high-quality specialized tools is likely to stratify researchers and amplify productivity differences, thus favoring interdisciplinary collaboration. It is argued that cross-disciplinary abilities to understand and repair such effects, at the very least within the research community, will be of enormous importance. In turn, this can spotlight potential advantages from diverse backgrounds. Ultimately, the democratization of AI technologies and their applications to political insight risks becoming a democratization of repressive capabilities. Self-reflectiveness must encompass the importance of fostering thoughtful and inclusive narratives on both the current risks and future implications thereof.

8. CONCLUSION

Artificial intelligence (AI) is increasingly affecting political analysis and social media are transforming environments in which political aims are defined and achieved. This transformation can be traced to the possibilities for the collection and analysis of big data, which are made possible by the digital environment.

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

Moreover, social media analytics and social network analysis show how such data can be treated in such a way that informational interests are directed through them. Finally, recent questions have emerged regarding the political influences of AI on the social media, and how the socio-technical knowledge structures surrounding AI might be formed politically. Looking at these processes, this essay discusses how AI as a network of socio-technical capacity is being normalized in political analysis via social media, and how the ethical implications of this development are thought to be approached (Grandinetti, 2021). Reflecting on the influences of AI as a capability and the broader milieu of social media, the usage of AI in political analysis from sides of political actors and scientific research becomes the subject of analysis. AI is thought to have the potential to transform the practice of any industry employing it. AI can be employed in prediction, pattern recognition, data learning, and automation. Although these potentials have been hyped and met with criticism and skepticism, the application of AI is already ubiquitously routine in facets of digital life, e.g. search engines, market analyses, music recommender systems, social media, linked ads, spam filters, or auto-correct. In fact, some of the most transformative impacts, such as the conceivability of a uncanny valley of decision-making within the guideline of automated ethics and its implications (or inversions) on current regulatory frameworks, might not affect everyday perception of AI. The normalization of AI use as an environment of professional tips, best practices and academically nurtured know-how is found to be the object of discussion (Savaget et al., 2019). Ethical suggestion are also provided, underlining the importance of critical awareness and openness in the light of influential factors of AI development. The discussion here is seen as a starting point, no final illuminate, but an invitation to a broader debate.

Conflict of Interest

The authors declare that they have no financial, professional, technological, commercial, institutional, or personal conflicts of interest that could have influenced the content, interpretation, or conclusions presented in this article.

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Online ISSN : 2959-8362
Print ISSN : 2959-8354

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data Availability

No new clinical, experimental, or patient-level datasets were generated or analysed during this study. All information discussed in the review was obtained from the published literature and publicly available sources cited in the manuscript. Additional information relating to the review may be obtained from the corresponding author upon reasonable request.

Informed Consent

Not applicable. No patients or other human participants were recruited, and no identifiable personal or clinical information was collected or analysed for this review.

Use of Generative AI

The authors declare that no generative artificial intelligence tools were used to conduct the literature review, generate the scholarly content, interpret the evidence, or formulate the conclusions presented in this article. The discussion of generative AI, artificial intelligence, and machine-learning technologies in the manuscript relates solely to their applications in healthcare resource optimization and does not constitute their use in preparing the article.

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