

Artificial Intelligence Skepticism in Career Domains

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Abstract

The advent of artificial intelligence (AI) has sparked diverse and conflicting perspectives within academia, technological thought leaders, and corporate sectors, particularly regarding its impact on the future of work. Amidst these varied sentiments, a prevailing theme emerges caution. Both optimistic and pessimistic viewpoints on AI consistently emphasize the importance of exercising caution as we navigate the development and exploration of this technology. This article presents a comprehensive examination, incorporating deep empirical literature review, text analysis, and sentiment analysis. The study conducted the transcription and summarization of ten YouTube videos that discussed the implications of AI on job and career growth. Subsequently, sentiment analysis was conducted using ChatGPT, an AI chatbot, and a sentiment analysis formula was employed to calculate the sentiment average. The findings indicate a prevailing sentiment of cautious optimism, with a sentiment average of 0.35.

Keywords: Artificial Intelligence, Workplace Transformation, Sentiment Analysis, Technological Unemployment, Job Displacement, Job Creation, Retraining and Upskilling, Human Creativity, AI Integration Challenges.

1. Introduction

The subject of the influence of automation and artificial intelligence (AI) on employment is a matter of continuous discussion among scholars in the field of labor economics. There is a contention among scholars that the implementation of technology aimed at enhancing productivity, such as the automation of tasks through the use of robots and artificial intelligence, has the potential to result in extensive unemployment and job displacement [1]. Nonetheless, an alternative perspective posits that artificial intelligence (AI) will not supplant human beings in their respective vocations, but rather engender novel employment opportunities [2]. According to Shinde et al. [2], empirical evidence indicates that firms that allocate resources towards intelligent, automated, and self-learning technologies are, in fact, generating employment opportunities. The notion that artificial intelligence (AI) will bring about

modifications in work content and procedures, resulting in a transformation of job responsibilities and a requirement for ongoing education and adjustment, is substantiated by Prejean et al.'s research [3].

The utilization of artificial intelligence (AI) possesses the capability to diminish administrative duties and mechanize monotonous procedures, thereby augmenting efficiency and job contentment [4]. Despite apprehensions regarding the potential disruption that may be caused by AI, particularly with regards to the capacity of labor to compete with robots, the extant empirical and theoretical literature in economics does not substantiate the proposition of extensive job displacement attributable to AI [5]. The emphasis lies on the difficulty of regulating artificial general intelligence and guaranteeing its advantageous application, as stated by Naudé [5]. According to Warning et al. [6], professions that entail repetitive cognitive tasks, which are more closely linked to artificial intelligence, may undergo alterations in job content and an escalation in demands for adaptability. Notwithstanding, extant literature posits that the mean age of the labor force and the rate of joblessness in a given profession may exert deleterious ramifications on the efficacy of artificial intelligence (AI) [6]. In general, scholarly literature suggests that artificial intelligence (AI) possesses the capacity to alter the character of labor and the labor force, although it is improbable to lead to extensive unemployment. Rather than causing a significant change, it is probable that this will result in a transformation of responsibilities and a requirement for ongoing education and adjustment. According to Shinde et al. [2], the adoption of AI technologies by companies has the potential to enhance efficiency and job satisfaction, while also generating novel employment opportunities.

2. Luddism and the First Machine Skepticism

Luddism pertains to the societal mobilization that surfaced during the onset of the 19th century as a reaction to the swift industrialization and technological progressions of that era. The movement was distinguished by the act of demolishing machinery and opposing the implementation of novel technologies,

specifically in the textile sector. According to Roberts [7], Nottingham, an English city, held a crucial position in the Luddite movement, as its framework knitters were the leading participants in the demonstrations. The Luddite movement that emerged in Nottingham can be interpreted as a response to the disruptive consequences of technological advancements on the economic sustenance of laborers. According to Roberts [7], the implementation of novel machinery posed a threat to the conventional abilities and artistry of the framework knitters, resulting in a decline in employment opportunities and a deterioration of the labor conditions. The Luddites perceived the technological advancements as a menace to their means of subsistence and reacted by participating in acts of subversion and machinery destruction. The participation of Nottingham in the Luddite movement can be attributed to its identity as a politically progressive and potentially transformative urban center. The North Midlands Committee, a clandestine committee headquartered in Nottingham, played a pivotal role in orchestrating and synchronizing the uprising. The committee in question served as a crucial liaison with the villages central to the Rebellion, notably Pentrich, the site of the 1817 uprising [8]. The implementation of novel technologies, such as telehealth, may encounter opposition and disturbance. An investigation carried out in Nottingham examined the encounters of healthcare professionals subsequent to the adoption of a telehealth system. The research revealed that individuals encountered disturbances as a result of modifications in clinical procedures, heightened work demands, and alterations in patient interactions.

The decision to employ the technology was influenced by various factors that engender a feeling of apprehension, as noted by Sharma and Clarke [9]. It is noteworthy that the Luddite movement in Nottingham was not exclusively motivated by apprehension towards technological advancements. The development of technology had a significant impact on workers, which was further intensified by socio-economic factors such as increased precarity and austerity. This is supported by the findings of Moore and Robinson [10]. The Luddites' opposition was not directed towards all technological advancements, but rather towards the particular technologies that posed a threat to their means of subsistence and labor circumstances. The Luddite movement that took place in Nottingham was a reactionary response to the disruptive consequences of technological advancements on the means of subsistence of laborers, particularly those employed in the textile sector. This movement was characterized by the destruction of machinery as a form of protest against the perceived threat to their livelihoods. Ultimately, this movement was a manifestation of the tensions between labor and capital in the context of industrialization. The participation of Nottingham in the movement can be

ascribed to its classification as a radical town and the impact of the North Midlands Committee. The phenomenon of opposition towards technological advancements is not exclusive to the Luddite movement and can be witnessed in various other scenarios, including the integration of telehealth. Comprehending the incentives and encounters of individuals impacted by technological progress is imperative in proficiently administering and alleviating the disturbances engendered by these innovations.

3. Human Skepticism on Modern Technologies in the Workplace

The swift progress of technology has resulted in the assimilation of diverse communication tools and devices within the contemporary workplace. Notwithstanding the potential advantages of these technologies, the apprehension of humans towards their adoption and utilization continues to be a noteworthy concern. Generational differences are a contributing factor to the skepticism observed towards modern technologies in the workplace. According to Zopiatis et al. [11], the younger demographic, specifically the Y generation, is commonly regarded as being more receptive to embracing technological advancements and accommodating change. It is noteworthy that skepticism may persist among this cohort, specifically with regards to challenging established hierarchies and pursuing alternative modes of psychological engagement within professional settings. The origin of this skepticism could be attributed to the aspiration to uphold personal identity and a deficiency of allegiance towards establishments [11].

Furthermore, the intricacy of contemporary work environments, which are distinguished by socio-technical systems, poses difficulties in the adoption and utilization of technology. The HF and E society is currently under pressure to undergo a paradigm shift in order to effectively tackle the challenges at hand, as noted by Lindblom and Thorvald [12]. According to Lindblom and Thorvald [12], it is imperative to incorporate supplementary analytical and theoretical methodologies to effectively identify novel and pertinent issues for the purpose of attaining superior HF and E outcomes. The adoption of this paradigm shift has the potential to mitigate skepticism by guaranteeing that technologies are developed and executed in a manner that conforms to the requirements and competencies of the labor force. Effective change management is crucial for successful technology adoption in the workplace, as the difficulties encountered are not solely technical but also behavioral in character [13]. Lasker and Murray [14] posit that apprehension towards technological advancements can manifest in the form of resistance to

change and skepticism, primarily due to apprehensions regarding the potential impact on job security, work-life balance, and personal privacy. Mitigating these apprehensions via effective communication, education, and assistance can assuage doubt and expedite the assimilation of technology.

Moreover, skepticism towards contemporary technologies in the workplace can be influenced by gender and cultural factors. According to Lasker and Murray's [14] research, it has been observed that women tend to exhibit a greater degree of skepticism towards technologies that have the potential to bring about unfavorable changes in their lives. Furthermore, extant gender stereotypes and diminished self-efficacy towards technology may serve as contributing factors to the prevalence of skepticism among females [15]. Skepticism can be further influenced by cultural disparities and preconceived notions regarding the advantages and applicability of technology in various settings.

4. Theoretical Grounding: Technological Unemployment Theory

The technological Unemployment theory suggests that advancements in technology, including AI, can lead to job displacement and unemployment. According to this theory, as AI becomes more advanced and capable of performing tasks that were previously done by humans, there is a risk that many jobs will become obsolete. The concept of technological unemployment has been discussed by various scholars and researchers.

For example, Brynjolfsson and McAfee [16] argue that technological progress, including AI, has the potential to automate a wide range of jobs, leading to significant job displacement. They suggest that AI and automation can replace not only routine manual tasks, but also cognitive tasks that were previously thought to be safe from automation. Furthermore, Borland and Coelli [17] conducted a study that estimated the susceptibility of different occupations to automation. They found that a significant number of jobs across various sectors are at high risk of being automated in the future. This study provides empirical evidence supporting the theory of technological unemployment and the concerns about AI taking over jobs (see Figure 1).

The fear of job displacement due to AI is also supported by real-world examples. For instance, the rise of self-checkout machines in supermarkets has led to a reduction in the number of cashier jobs. Similarly, the development of autonomous vehicles has raised concerns about the potential loss of jobs for truck drivers and delivery personnel. However, it is important to note that not all researchers agree with the theory of technological unemployment. Some argue that while AI may lead to job displacement in certain sectors, it can also create new job opportunities in other areas. They suggest that as AI takes over routine and repetitive tasks, humans can focus on more complex and creative tasks that require human intelligence and skills. In conclusion, the theory of technological unemployment provides a plausible explanation for people's skepticism about AI taking their jobs.

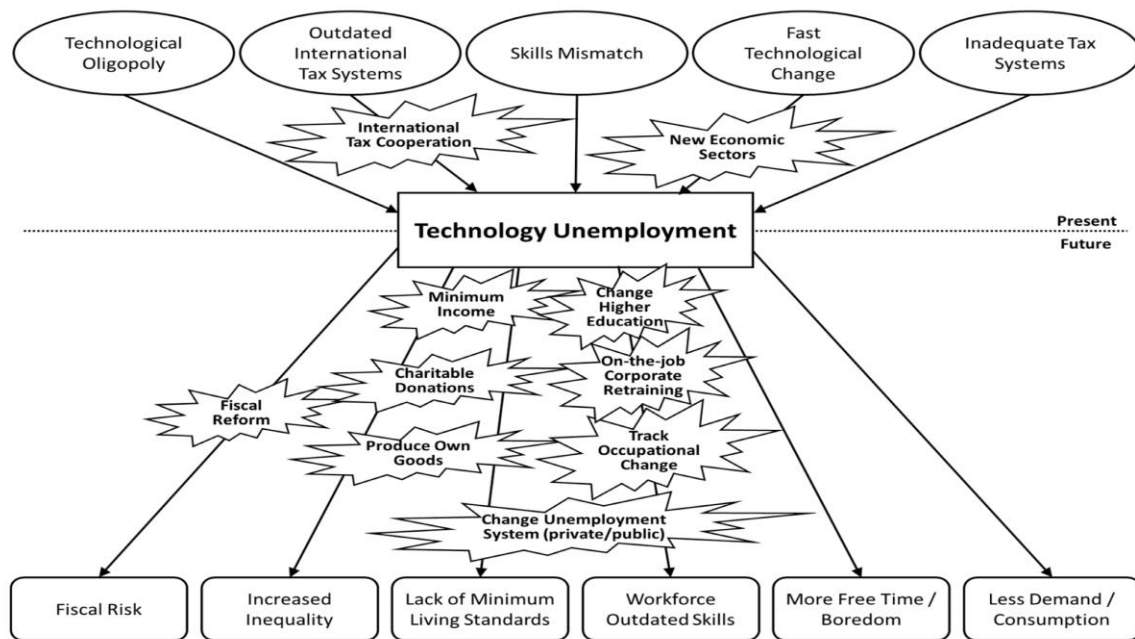


Figure 1. Technological Unemployment Theory [18]

The potential for job displacement and the automation of various tasks by AI has raised concerns about the future of work. However, it is important to consider both the potential negative and positive impacts of AI on employment, as it can also create new job opportunities. Further research and analysis are needed to fully understand the implications of AI on the labor market.

5. Data Insights

Content Analysis of 10 YouTube Videos on the implications of AI on job and career growth. The video's contents were summarized and converted into text by an AI tool, (summarize.tech). The summaries were then fed to the natural language open AI chatbot, ChatGPT to

conduct a sentiment analysis of the video summaries. To calculate the sentiment average, we used the following formula:

$$SA = \frac{SC1 + SC2 + \dots + SC10}{N}$$

Where Sentiment Score1, Sentiment Score2, ..., Sentiment Score10 are the numerical values assigned to each sentiment, and N is the total number of entries.

Optimistic (+1), Cautiously Optimistic (+0.5), and Pessimistic (-1).

$$(1 + 0.5 - 1 + 0.5 + 1 + 0.5 + 1 + 0.5 + 0.5 - 1) / 10 = 0.35$$

Therefore, the sentiment average is 0.35, indicating a cautiously optimistic overall sentiment.

Table 1. Text and sentiment analysis summary of videos

SN	Video Title	Channel	Text Analysis Summary	Sentiment	Sentiment Score
1	Is AI coming for your job?	DW Business	The video discusses the potential disruptions in the labor market due to technological advancements and the rise of green economies, creating some concern but also highlighting the potential for new opportunities and the importance of supportive measures. It emphasizes the need for upskilling, retraining, diversity and inclusion, and the positive impact of technology in bridging the skills gap and enabling critical thinking.	Optimistic	+1
2	How AI will kill Indian Businesses: A case study	Think School	The video highlights AI as a transformative technology with the potential to improve efficiency and profitability, suggesting a positive sentiment. It acknowledges the risk of job displacement but also mentions the potential for job creation and scalability, indicating a cautiously optimistic outlook. Overall, the video emphasizes the positive impact of AI on businesses while recognizing the challenges and risks involved.	Cautiously Optimistic	+0.5
3	DECODED - Is India ready for Massive Job Disruption due to AI?	The Deshbhakt	The video raises concerns about the evolving nature of AI, its potential development of feelings and awareness, and the implications for humanity, implying a negative sentiment. It discusses the immediate impact of AI on jobs, emphasizing potential mass layoffs and the need for upskilling, indicating a negative sentiment towards the potential disruptions in the job market. Overall, the video predominantly expresses a negative and cautious outlook, emphasizing concerns about job losses and the need for proactive measures.	Predominantly Negative and cautious	-1
4	The AI revolution: Google's	60 Minutes	The video highlights Google's AI breakthrough with the chatbot Bard, showcasing its	Cautiously Optimistic	+0.5

	developers on the future of artificial intelligence		capabilities and potential positive impact on content generation. While acknowledging challenges such as disinformation, the video emphasizes the proactive measures taken by Google, ethical considerations, and the belief in the transformative potential of AI, resulting in a cautiously optimistic outlook.		
5	The future of work with AI	Microsoft	The text discusses Microsoft 365 Copilot, an AI tool that empowers users in their tasks and jobs, emphasizing its potential benefits and improved productivity. It highlights features such as natural language processing, user adaptability, time-saving capabilities, and built-in security, reflecting a positive sentiment towards the tool's potential to enhance workflows and prioritize data security.	Optimistic	+1
6	AI and the future of work	TEDx	In this TEDx talk, Volker Hirsch discusses the impact of AI and automation on the future of work, highlighting the exponential growth in computing power and the rise of AI and robots in various industries. The sentiment of the talk is cautiously optimistic, as Hirsch acknowledges the potential for job automation but also emphasizes the importance of adapting, retraining, and nurturing human qualities that machines cannot replicate, encouraging the audience to embrace technology for progress.	Cautiously Optimistic	+0.5
7	Artificial Intelligence and the future of work	NYU Stern	In this Tech@Stern video, Rob Siemens discusses the impact of AI on the future of work, highlighting the potential for job augmentation rather than complete replacement. The sentiment of the video is pragmatic and forward-thinking, as Siemens emphasizes the need for a transition period, skills training, and retraining to adapt to the changes AI brings. While he acknowledges the trade-offs and cautions against implementing UBI, he appreciates the conversation it generates about strengthening social safety nets and finding the best approaches to support the workforce.	Optimistic	+1
8	AI and the future of work	Stanford Digital Economy Lab	The content highlights the significance of artificial intelligence (AI) as a crucial technology for the future of work, discussing its impact on job displacement, augmentation, and the importance of understanding its implications for successful businesses. The sentiment of the text is cautiously optimistic, recognizing the transformative potential of AI but also acknowledging the challenges related to job displacement and the need for complementary changes in business processes and workforce skills to fully capitalize on its benefits.	Cautiously Optimistic	+0.5
9	AI and the future of work: AI Skill Sets	MIT Initiative on the Digital Economy	The content discusses the impact of AI on the future of work and emphasizes the need for a narrative to guide the transition. It highlights efforts by ManpowerGroup to reskill veterans	Cautiously Optimistic	+0.5

			for digital manufacturing jobs and focuses on developing learnability and adaptability skills for the evolving job market. The mention of the need for talent in the technology industry, diversity, and the importance of soft skills further reinforces a cautiously optimistic sentiment, recognizing the potential for growth and adaptability in the future of work.		
10	AI and the future of work: Jeffrey Sachs	MIT Initiative on the Digital Economy	The content discusses the profound effects of the digital revolution, including AI and machine learning, on various aspects of society. It highlights the displacement of lower-skilled labor, income inequality, and the concentration of wealth among big data aggregators. The suggested policy measures indicate a concern for inclusive benefits and addressing the challenges posed by technological advancements. The sentiment is predominantly negative as it calls for proactive policy interventions to mitigate the negative impacts and ensure fair distribution of benefits in the face of these technological changes.	Pessimistic	-1

6. Summary of Sentiment : Cautiously Optimistic

The potential benefits of artificial intelligence (AI) have been widely discussed and recognized by various sources, including TEDx talks, industry experts, and academic institutions. These benefits range from increased efficiency and productivity to improved decision-making and problem-solving capabilities. AI has the potential to revolutionize industries such as healthcare, finance, transportation, and manufacturing, among others. One of the key advantages of AI is its ability to automate repetitive and mundane tasks, allowing humans to focus on more complex and creative endeavors. This can lead to increased job satisfaction and higher levels of productivity. For example, in the healthcare sector, AI can assist in diagnosing diseases, analyzing medical images, and developing personalized treatment plans, thereby improving patient outcomes, and reducing healthcare costs. Furthermore, AI has the potential to enhance decision-making processes by analyzing vast amounts of data and identifying patterns and trends that may not be apparent to humans. This can be particularly valuable in fields such as finance, where AI algorithms can analyze market data and make investment recommendations with a high degree of accuracy.

However, while the potential benefits of AI are significant, there is also a recognition of the need for adaptation, retraining, and nurturing human qualities. It is widely acknowledged that AI will lead to job displacement in certain sectors, particularly those that involve routine and repetitive tasks. This has raised

concerns about the impact on the workforce and the need for retraining and upskilling to ensure that individuals can adapt to the changing job market. To address these concerns, there is a growing emphasis on the importance of nurturing human qualities that are difficult to replicate by AI, such as creativity, empathy, and critical thinking. These qualities are seen as essential for tasks that require complex decision-making, innovation, and human interaction. Therefore, there is a need to invest in education and training programs that develop these skills and ensure that individuals are equipped to thrive in an AI-driven world . Overall, the sentiment towards AI leans towards cautious optimism. While there are concerns about job displacement, there is also a recognition of the transformative potential of AI and the importance of responsible implementation to ensure inclusive benefits and support for the workforce. It is crucial to strike a balance between harnessing the benefits of AI and addressing the challenges it presents to ensure a sustainable and equitable future.

7. Predictions of Continuous AI Use in the Workplace

It is anticipated that the utilization of artificial intelligence (AI) within the workforce will experience a surge over the forthcoming decade, thereby carrying noteworthy ramifications for diverse occupational domains. According to Yu et al. [19], various factors, such as the personnel subsystem, technical subsystem, organizational structure subsystem, and environmental factors, have been found to exert an impact on the adoption and implementation of artificial intelligence

(AI) in the workplace. The aforementioned factors are pivotal in influencing the assimilation of artificial intelligence technologies across diverse occupational environments. The implementation of AI-based "smart" technology is anticipated to significantly influence the responsibilities and duties of professionals in the accounting field. According to Leitner-Hanetseder et al. [20], certain responsibilities currently fulfilled by humans will be executed by AI-based technology, while fundamental roles and tasks will remain unchanged.

Likewise, within the realm of medicine, artificial intelligence (AI) is anticipated to integrate into the standard practise of radiologists, thereby enhancing the efficiency and precision of their work. According to Ahuja [21], there is an expectation that within the next decade, artificial intelligence (AI) tools will conduct preliminary analyses of medical images prior to their evaluation by radiologists. The ramifications of artificial intelligence on the forthcoming landscape of labor transcend particular vocations. According to Mantello et al. [22], the emergence of the emotional AI sector is anticipated to revolutionize the forthcoming work environment. However, there exists a dearth of global agreement regarding the guidelines and benchmarks for these technologies.

Furthermore, the incorporation of artificial intelligence and automation in the labor force gives rise to inquiries regarding the psychological ramifications on employees. The current state of research indicates that there exists a significant amount of literature on topics that are related to AI, such as algorithm development and human-robot communication. However, the psychological impact of AI implementation in work environments remains largely unexplored, as noted by Stamate et al. [23]. The incorporation of artificial intelligence (AI) within organizational settings offers prospects for augmenting learning and problem-solving capabilities. According to Laa et al. [24], advancements in artificial intelligence (AI) possess the capability to transform the amalgamation of human and artificial learning, facilitating the provision of instantaneous feedback mechanisms to facilitate intricate problem-solving in professional settings. This has the potential to facilitate the acquisition of essential competencies for the upcoming labor force and enhance the cooperation between human agents and automated systems.

In general, the utilization of artificial intelligence (AI) within the workplace is anticipated to exert a noteworthy influence on diverse occupational domains and work environments. Despite apprehensions regarding the displacement of employees, scholarly investigations indicate that artificial intelligence (AI) technologies can supplement human proficiencies and facilitate enhanced collaboration, informed decision-making, and heightened efficiency [25]. The adoption of AI poses certain challenges that must be addressed.

These challenges include the requirement for data of high quality, models that are informed by empirical evidence, and a deeper comprehension of the interplay between cognitive technologies and economic dynamics [26]. Given the rapid advancement of artificial intelligence (AI), it is imperative to undertake additional research to comprehensively comprehend its implications and effectively steer forthcoming developments within the workplace.

8. The need of Professionals to Re-imagine their Roles within the AI Revolution

The advent of artificial intelligence has brought about a significant transformation in diverse sectors and vocations, thereby impacting the functions of professionals themselves. The rapid progression of artificial intelligence (AI) technologies necessitates a re-evaluation of professional roles in order to effectively navigate the evolving terrain. The significance of this matter is particularly noteworthy in domains such as healthcare, human resource management, and legal education and training. The implementation of artificial intelligence (AI) in the healthcare industry has the capacity to substantially enhance diagnostic efficacy, optimize decision-making processes, and mitigate workforce insufficiencies, as posited by Kwak and colleagues [27]. Although AI is not anticipated to supplant physicians, it is poised to assume numerous responsibilities that have conventionally been carried out by medical practitioners, thereby necessitating novel educational prerequisites, and reconfiguring professional personas [28]. According to Karaca et al. [28], it is imperative for medical students to attain proficiencies in AI and data science in order to effectively utilize data-driven decision-making strategies and remain current with the ongoing data science revolution.

According to Kolachalama and Garg [29], the utilization of machine learning techniques in the education of future medical professionals will facilitate their integration into the burgeoning data science revolution. The field of human resource management is undergoing a transformation due to the growing digitalization, which calls for a reconsideration of organizational structures and managerial responsibilities [30]. The utilization of hiring algorithms has become increasingly crucial for the purpose of sifting through vast quantities of candidate data. However, it is important to note that these algorithms are primarily intended for performing routine duties and should not be regarded as a substitute for human recruiters [30]. Hence, it is imperative for experts in this domain to redefine their responsibilities and explore strategies to harness AI technologies for augmenting their decision-making procedures. The Fourth Industrial Revolution,

characterized by advanced technologies such as artificial intelligence (AI) and machine learning, necessitates a corresponding adaptation of legal education and training [31]. The non-STEM fields, such as law, exhibit insufficient involvement with the advancements in technology. Therefore, it is imperative to establish a policy framework for legal education and training that takes into account the prospects and potential adverse effects of the AI revolution, as stated by Roux-Kemp [32]. It is imperative for legal professionals to adopt AI technologies and acquire the requisite competencies to effectively navigate the evolving terrain. In light of the AI revolution, professionals from diverse industries must reconsider their respective roles. This entails the acquisition of novel competencies, adoption of artificial intelligence (AI) technologies, and identification of strategies to exploit them for the purpose of augmenting decision-making processes and optimizing efficiency. The advent of AI technology poses a dual challenge and opportunity for professionals, necessitating their adaptation to remain pertinent in the swiftly changing technological milieu.

9. Conclusion

The paper addressed the impact of AI on the future of work, exploring various perspectives on job displacement, creation, and transformation. It integrates empirical literature, sentiment analysis of YouTube video content, and insights from technological unemployment theory, highlighting the prevailing sentiment of cautious optimism towards AI's potential in transforming work environments. Key themes include the need for retraining, nurturing human qualities like creativity, and addressing challenges of AI integration. The paper underscores the dual role of AI as both a potential disruptor and enabler in the workplace, emphasizing the importance of adapting to and responsibly implementing AI for a sustainable future.

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