People's perception of AI and its effects on the Job market

Raaghav Pillai

Abstract

Our lives and the way we work are being dramatically altered by artificial intelligence (AI). Artificial intelligence (AI) is bringing forth new prospects but also generating concerns about the future of the labor market with developments like self-driving cars and virtual assistants. There is disagreement among experts over whether AI will result in significant job losses or new employment prospects and improved productivity. The way people view AI and how it affects the labor market is crucial because these perceptions might have an impact on choices about education, careers, and employment. This study investigated how individuals view AI and its potential effects on the labor market in the future. The study discovered that a variety of characteristics, such as people's levels of education, employment histories, and exposure to AI technologies, influence how people view artificial intelligence. The study also discovered that people's perceptions of AI do not always match projections made by experts or the real effects of AI on the labor market. The results of this study have significant policy-related, educational, and employment-related ramifications. The public's concerns about AI must be taken into consideration as policymakers create measures to lessen their detrimental effects on the labor market.

Keywords

Artificial Intelligence, Job Market Dynamics, Technological Unemployment, Government and Industry Response

Introduction

In recent years, the rise of artificial intelligence (AI) has become a prominent trend, with many sectors investing heavily in the creation and deployment of AI systems." (Metz et al., 2023) (Kulkov, 2023)While artificial intelligence has shown great promise in transforming various parts of our lives, it has also raised concerns about its effect on employment (Ping & Ying, n.d.)(Tschang & Almirall, 2021).As AI improves its ability to perform tasks previously performed by humans, there is increasing concern about the potential displacement of human workers and job loss (Morikawa, 2017).

The threat perception of AI in jobs has become a hot issue among researchers, policymakers, and the public. Many studies have been conducted to investigate the potential effect of AI on various industries and employment sectors, with the goal of determining the extent to which AI may replace or enhance human labour (Yang, 2020) (Georgieff & Hyee, 2022). Simultaneously, concerns about the ethical and social consequences of AI, such as bias and discrimination (Hagerty & Rubinov, 2019) (Mehrabi et al., 2022), have complicated the situation.

Given the importance of this subject, the purpose of this research paper is to add to the ongoing discussion about the threat perception of AI in the workplace (Mirbabaie et al., 2021). It will review the existing literature on the topic and analyse the key factors that add to threat perceptions, such as AI technology characteristics, job task nature, and socioeconomic context. The paper will also look at possible policy interventions to mitigate the negative effects of AI on

employment and encourage a more equitable distribution of the benefits and costs of this transformative technology.

Artificial intelligence (AI) is rapidly transforming our lives and changing the way we work (Wang & Siau, 2019). With innovations like self-driving cars and virtual assistants, AI is creating new opportunities while also raising concerns about the future of the labor market. Experts disagree on whether AI will cause massive job losses or create new employment opportunities and enhance productivity (Maity, 2022).

As people's perceptions of the future labor market can significantly influence decisions about education, career choices, and job opportunities (Culpepper & Austin, 2006), it is crucial to understand their views on the impact of AI. This understanding will enable policymakers and other stakeholders to design effective strategies that maximize the benefits of AI while minimizing negative impacts.

Therefore, this research aims to explore people's perceptions of AI and its impact on the future job market. The study will examine various factors that shape these perceptions, such as education level, work experience, and exposure to AI technology. Additionally, the research will investigate how well people's perceptions align with expert predictions and the actual impact of AI on the labor market.

The findings of this study will have significant implications for policymakers, educators, and employers as they work to navigate a rapidly changing labor market and ensure that people have the necessary skills and opportunities to succeed in the age of AI.

Methodology

Research Aim

This study aims to analyze how individuals perceive the impact of artificial intelligence (AI) on the job market. By investigating factors such as education, work experience, and exposure to AI, the research aims to uncover patterns in these perceptions and assess their alignment with expert projections. The goal is to provide insights that inform policy, education, and employment strategies in the face of AI-driven workplace transformations.

Hypothesis

Null hypothesis 1: There is no significant difference in the level of concern about job replacement by AI between people with a high school or undergraduate degree and people with a postgraduate or higher degree.

Alternative hypothesis 1: There is a significant difference in the level of concern about job replacement by AI between people with a high school or undergraduate degree and people with a postgraduate or higher degree.

Data Collection

The research utilized a basic, exploratory, and inductive research design, conducting primary data collection through an online survey administered via Google Forms. The survey employed a quantitative and experimental approach, collecting data from a diverse sample selected through probability sampling. Field research was conducted to ensure a broad range of perspectives, employing a cross-sectional design. The survey questionnaire consisted of closed-ended questions, exploring participants' perceptions of AI and the future job market. The collected data were subjected to quantitative analysis, including descriptive statistics and inferential tests, using statistical software.

Ethics

Ethical considerations were followed, ensuring participant confidentiality and informed consent. The limitations of the research, such as potential response biases and limited generalizability, were acknowledged.

Data Analysis

The findings were presented through descriptive statistics, tables, and graphs, providing an overview of participants' perceptions and significant relationships observed.

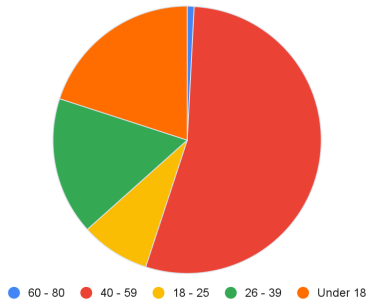

Figure 1: Distribution of surveyed population as per age-group

In figure 1, one can see the different age demographic of the respondents. It can be observed that the most 54.2% (65) of the respondents are in the age range of 40-59.The ages lie between Under 18 to 60-80 with the median being 40-59

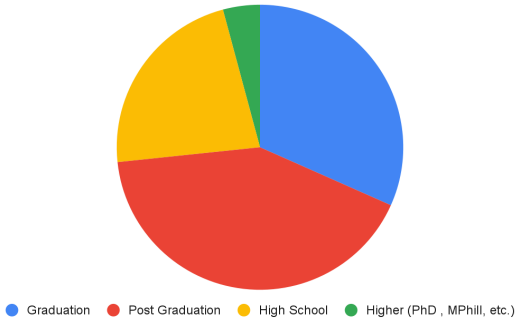

Figure 2: Distribution of surveyed population asper level of education

In figure 2, one can see the different education demographic of the respondents. It can be observed that the most 41.7% (50) of the respondents are Post graduates.The qualification lie between High School to Higher (PhD , MPhill , etc.) with the median being Graduation students

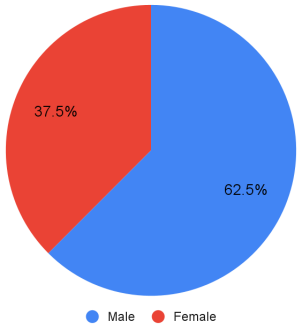

Figure 3: Distribution of surveyed population asper level of education

In figure 3, one can see the different gender demographic of the respondents. It can be observed that the most 62.5% (75) of the respondents are Male.

Results

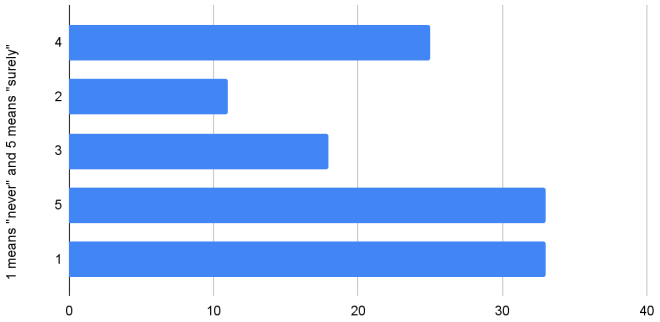

Figure 4: Results of question: Have you ever worked in a job where automation or technological advancements played a role in changing job tasks or processes? (1 signifies “never” and 5 signifies “surely”)

In figure 4, one can see that the difference in affect someone has felt in their jobs due to the AI and technological advancements. It can be observed that the most 27.5% (33) of the respondents have said that they have never felt the impact and 27.5% (33) of the respondents claim they have surely felt an effect. The marks lie between 1-5 with the average being 3.12 and median being 3

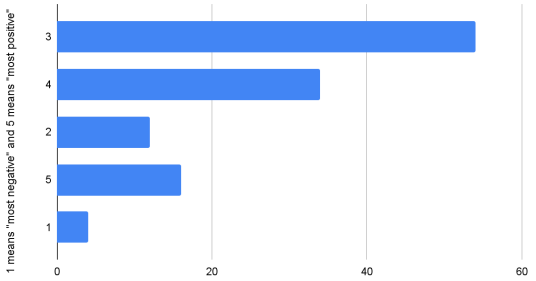

Figure 5: Results of question: What is your perspective on the potential impact of AI on jobs? (1 signifies “most negative” and 5 signifies “most positive”)

In figure 5, one can see the different perspectives of the potential impact of AI on jobs. It can be observed that the most 45% (54) of the respondents have said that they are neither positive nor negative about the impact of AI on jobs, and that forms our median. The marks lie between 1-5 with the average being 3.38

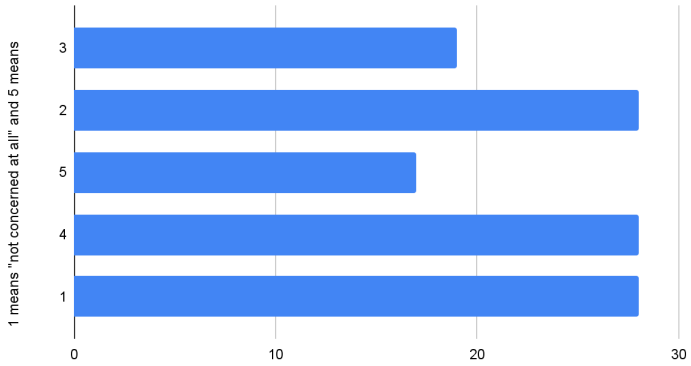

Figure 6: Results of question: Are you concerned about your job being replaced by AI? (1 signifies “not concerned at all” and 5 signifies “concerned”)

In figure 6, one can see the different levels of concerns about their jobs being replaced by AI (Miyakawa et al., 2017). It can be observed that the most 69.9%(84) of the people are equally divided between 1 , 2 and 4, and 3 forms our median. The marks lie between 1-5 with the average being 2.65

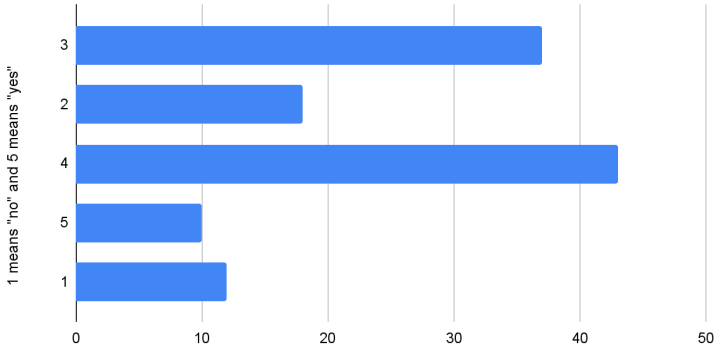

Figure 7: Results of question: In your opinion, do the benefits of AI outweigh the potential job losses? (1 signifies “no” and 5 signifies “yes”)

In figure 7, one can see the different perspectives of the benefits AI has over potential job losses. It can be observed that the most 35.8% (43) of the respondents have said 4, and 3 forms our median. The marks lie between 1-5 with the average being 3.175

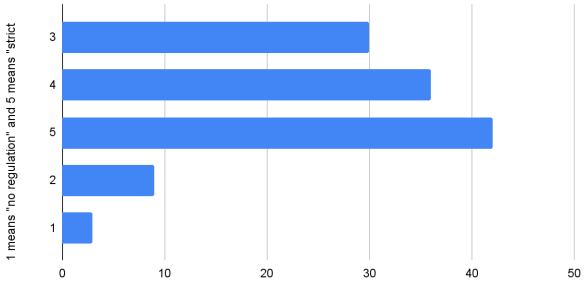

Figure 8: Results of question: What are your thoughts on the role of governments in regulating the use of AI? (1 signifies “no regulation” and 5 signifies “strict regulation”)

In figure 8, one can see the different perspectives of the action the government should take to regulate the use of AI. It can be observed that the most 35% (42) of the respondents have said 5, and 4 forms our median. The marks lie between 1-5 with the average being 3.875

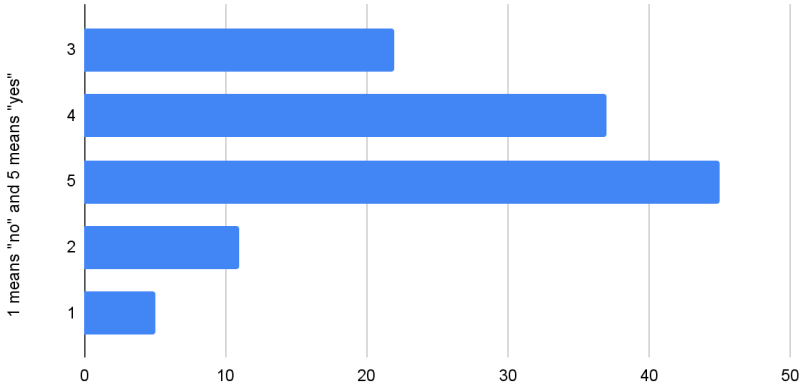

Figure 9: Results of question: In your opinion, can AI enhance existing jobs rather than completely replacing them? (1 signifies “no” and 5 signifies “yes”)

In figure 9, one can see the different perspectives of the possibility of AI enhancing existing jobs instead of completely replacing them. It can be observed that the most 37.5% (45) of the respondents have said 5, and 4 forms our median. The marks lie between 1-5 with the average being 3.88

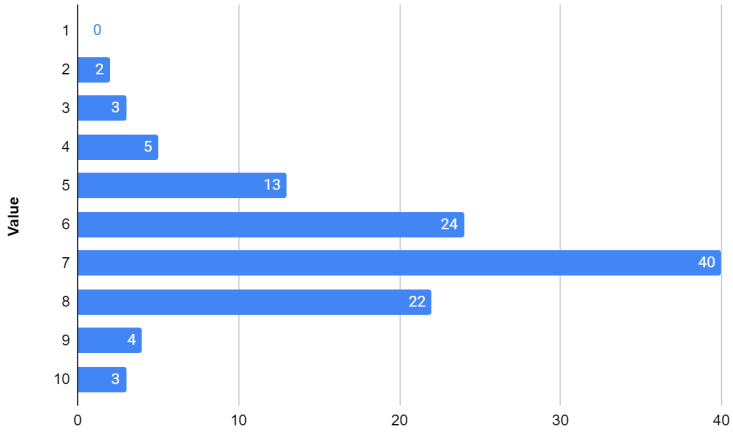

Figure 10 : Graphical representation of marks by the survey takers defining their knowledge in AI. (Y axis: marks scored , X axis: number of respondents)

In figure 10 one can see the different ratings of the respondents on AI knowledge. It can be observed that the most 33.33% (40) of the respondents have scored 7 out of 10 marks and that forms our median. The marks lie between 2-10 with the average being 6.55

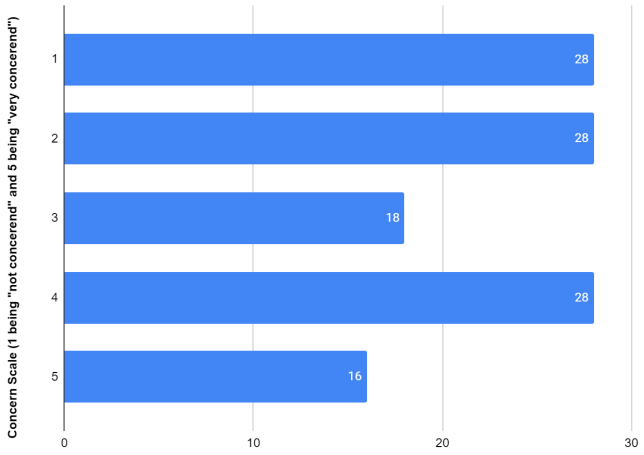

Figure 11 : Graphical representation of level of concern among survey takers about their jobs. (1 signifies “not concerned” and 5 signifies “very concerned”)

In figure 11, one can see different levels of concern people have felt. It can be observed that the most 84% (70) of the respondents are equally divided between 1 (not concerned) , 2 (slightly concerned) and 4 (concerned).The marks lie between 1-5 with the average being 2.75 and median being 3.

We also needed to showcase the different concern levels, between High School + Graduate and Postgraduate + Higher students, regarding AI. This was carried out using a T test.

Table 1 : T test to compare results given by High School + Graduate students and Postgraduate + Higher students on the question: Are you concerned about your job being replaced by AI?

Source	Are you concerned about your job being replaced by AI?		t	p
	M	SD		
PHD + Post graduation	2.9692	11.3109	1.3089	0.0966
High school + graduation	2.6364	10.0362		

People studying in who have the max education of high school or undergraduate (M = 2.6364, SD = 10.0362) are significantly more concerned about their jobs being replaced by AI than people who have post graduate or higher degree of education (M = 2.9692, SD = 11.3109),

t(120) = 1.3089, p<.1 (Table 1)

The t test clearly shows that the people in High School and graduation are more concerned about their jobs being replaced by AI when compared to the people in Postgraduate and PHD this may be caused due to the sudden explosion of AI in the world and may lead to rising concerns among the newer generations (Morikawa, 2017)

Furthermore the difference in optimism level was significant between High School + Higher students and Postgraduate + Graduate students

Table 2 : Results of High School + Higher students and Postgraduate + Graduate students on the question: In your opinion, can AI enhance existing jobs rather than completely replacing them?

Group	n	In your opinion, can AI enhance existing jobs rather than completely replacing them?	
		M	SD
Graduation + Post graduation	88	3.7727	10.9295
High school + PHD	32	4.1935	5.5566

Measuring the Mean and SD of people with a minimum of a High school degree.
Mean and SD were calculated for the optimism in people with graduate or post graduate degree and people with highschool or phd degree.
Descriptive Statistics show that High school + PHD scored (M = 4.1935, SD = 5.5566) while graduation +post graduation scored (M = 3.7727 , SD = 10.9295)

This data shows that the high schoolers and PHD folks are more optimistic about working with AI instead of their jobs being replaced by AI when compared to Graduation and Post graduation folks, this maybe because the high schoolers are more used to working with AI and PHD have worked on AI and know its actual effect (Ogbolu & Sukidjo, 2020) this may lead to the effect that the more people have experience with AI the more they will be optimistic (Miyakawa et al., 2017)

Along with that the concern regarding jobs being replaced by AI was higher in the Under 18 population in comparison to the 18-59 demographic.

Table 3: Results of Under 18 demographic and 18-59 demographic on the question: Are you concerned about your job being replaced by AI?

Group	n	Are you concerned about your job being replaced by AI?	
		M	SD
Under 18	27	3.375	6.7546
18-59	92	2.6736	13.2997

Measuring the Mean and SD of people under 18 and 18 - 59.
Mean and SD were calculated for the concern in people of their jobs in under 18 population and 18 - 59 population.
Descriptive Statistics show that Under 18 scored (M = 3.375, SD = 6.7546) while age group between 18-59 scored (M = 2.6736 , SD = 13.2997)

This shows that people under 18 are more concerned about AI is taking over their jobs when compared to 18-59 population, this maybe because they have only gotten knowledge about AI from news and social media and are not informed about the real impact of AI while the folks who are working in jobs know the real impact of AI (Morikawa, 2017), this may lead to people with more knowledge being less concerned with AI taking over their jobs (Morikawa, 2017)

Conclusion

This study investigated how individuals see AI and its effect on the labor market of the future. The study discovered that a variety of characteristics, such as people's levels of education, employment histories, and exposure to AI technologies, influence how people view artificial intelligence. The study also discovered that people's perceptions of AI do not always match projections made by experts or the real effects of AI on the labor market.

The results of this study have significant policy-related, educational, and employment-related ramifications. The public's concerns about AI must be taken into consideration as policymakers create measures to lessen their detrimental effects on the labor market. Teachers must equip pupils with the new skills and knowledge needed for occupations of the future, which include coding, data science, and artificial intelligence. To ensure that their staff members have the skills required to succeed in the age of AI, employers must make investments in their training and upskilling.

The future of work

Here are some additional thoughts on the future of work in the AI age, based on the findings of this study:

- People with low levels of education are more likely to be concerned about replacing their jobs with AI. This may be because they are less familiar with AI technology and its potential impact on the job market.
- People with more education are more likely to be optimistic about the use of AI. This may be because they are more familiar with AI technology and see the potential it can create new opportunities and jobs.
- Young people are more likely to worry about AI taking over their jobs. This may be because they are more exposed to AI technology and see its potential to disrupt the job market.

The results of this study suggest that policymakers, educators, and employers need to take action to address the concerns of those who fear their jobs will be replaced by AI. These steps may include:

- Invest in education and training programs that teach people the skills they need to work with AI.
- Develop policies to protect workers from AI-induced job loss.
- Create new jobs in the field of AI. By taking these steps, we can help ensure that everyone has a chance to succeed in the age of AI.

References

Culpepper, R., & Austin, S. (2006, July 1). The Role of Perceptions of Future Extrinsic Outcomes and Person-Environment Congruence in Career Choice. *Journal of Organizational Culture, Communications and Conflict*. https://www.semanticscholar.org/paper/The-Role-of-Perceptions-of-Future-Extrinsic-and-in-Culpepper-Austin/68cd396036dd55f6e6d2a17c781556297256bd7b

Georgieff, A., & Hyee, R. (2022, May 10). Artificial Intelligence and Employment: New Cross-Country Evidence. *Frontiers in Artificial Intelligence*, *5*. https://doi.org/10.3389/frai.2022.832736

Hagerty, A., & Rubinov, I. (2019). Global AI Ethics: A Review of the Social Impacts and Ethical Implications of Artificial Intelligence. *ArXiv*, *abs/1907.07892*. https://api.semanticscholar.org/CorpusID:197545196

Kulkov, I. (2023). Next-generation business models for artificial intelligence start-ups in the healthcare industry. *International Journal of Entrepreneurial Behavior & Research*, *29*(4). https://www.emerald.com/insight/content/doi/10.1108/IJEBR-04-2021-0304/full/html

Maity, S. (2022). Review of Artificial Intelligence: A Driver of Unemployment or Navigation towards a Prospective Future? *5*(8), 3253-3259. https://doi.org/10.47191/ijcsrr/V5-i8-56

Mehrabi, N., Morstatter, F., Saxena, N., Lerman, K., & Galstyan, A. (2022, July). A Survey on Bias and Fairness in Machine Learning. *ACM Comput*, 35. https://doi.org/10.1145/3457607

Metz, R., Bass, D., Anand, P., & Krasnova, M. (2023, May 4). *These Are the 10 AI Companies to Watch Right Now*. Bloomberg.com. Retrieved July 18, 2023, from https://www.bloomberg.com/features/2023-top-ai-startups/

Mirbabaie, M., Brünker, F., Frick, N. R. J. M., & Stieglitz, S. (2021, October 05). The rise of artificial intelligence – understanding the AI identity threat at the workplace. *Electronic Markets*, *32*, 73-99. https://link.springer.com/article/10.1007/s12525-021-00496-x#citeas

Miyakawa, D., Miyauchi, Y., & Perez, C. (2017, May 1). Who Are Afraid of Losing Their Jobs to Artificial Intelligence and Robots? Evidence from a survey. *Business*. https://www.semanticscholar.org/paper/Who-Are-Afraid-of-Losing-Their-Jobs-to-Artificial-a-Miyakawa-Miyauchi/028717bbc8c99ee6ca62e6c5a1fa18f191f37c64

Miyakawa, D., Miyauchi, Y., & Perez, C. (2017, May 1). Who Are Afraid of Losing Their Jobs to Artificial Intelligence and Robots? Evidence from a survey. *Business*. https://www.semanticscholar.org/paper/Who-Are-Afraid-of-Losing-Their-Jobs-to-Artificial-a-Miyakawa-Miyauchi/028717bbc8c99ee6ca62e6c5a1fa18f191f37c64

Morikawa, M. (2017). Who Are Afraid of Losing Their Jobs to Artificial Intelligence and Robots? Evidence from a Survey. (71). https://www.semanticscholar.org/paper/Who-Are-Afraid-of-Losing-Their-Jobs-to-Artificial-a-Morikawa/b97c0ce6eb53233a0a9e04bf5e1ea74b4c7d297f

Morikawa, M. (2017). Who Are Afraid of Losing Their Jobs to Artificial Intelligence and Robots? Evidence from a Survey. *Research Papers in Economics*. https://www.semanticscholar.org/paper/Who-Are-Afraid-of-Losing-Their-Jobs-to-Artificial-a-Morikawa/b97c0ce6eb53233a0a9e04bf5e1ea74b4c7d297f

Ogbolu, A. N., & Sukidjo, S. (2020). Artificial Intelligence Vs My Future Job: Perceptions of Asian Undergraduates. *1*(6). https://journal.umy.ac.id/index.php/jrc/article/view/8664

Ping, H., & Ying, G. Y. (n.d.). COMPREHENSIVE VIEW ON THE EFFECT OF ARTIFICIAL INTELLIGENCE ON EMPLOYMENT. *Multidisciplinary Inclusive Education, Management and Legal Services (MIEMLS)*. 10.26480/ismiemls.01.2018.32.35

Tschang, F. T., & Almirall, E. (2021). Artificial Intelligence as Augmenting Automation: Implications for Employment. *Academy of Management Perspectives*, *35*(4). https://journals.aom.org/doi/abs/10.5465/amp.2019.0062?journalCode=amp

Wang, W., & Siau, K. (2019). Artificial Intelligence, Machine Learning, Automation, Robotics, Future of Work and Future of Humanity: A Review and Research Agenda. j*ournal of Database Management (JDM)*, *30*(1), 19. 10.4018/JDM.2019010104

Yang, Y. (2020). Analysis of the Impact of Artificial Intelligence Development on Employment. *International Conference on Computer Engineering and Application (ICCEA)*. 10.1109/ICCEA50009.2020.00077