

# Authenticity in Biased Diversity: Investigating the Language of Prompt Performances in AI Image Generators

**Farrah Faustine Tansri<sup>1\*</sup>, Nadine Monem<sup>2</sup>, Lee Weinberg<sup>3</sup>**

<sup>1,2,3</sup>University of the Arts London, United Kingdom

\*Corresponding Author: [farrahftansri@gmail.com](mailto:farrahftansri@gmail.com)

**Abstract:** This paper reanalysis discriminatory biasness and ethicality in effects of artificial intelligent productions over the last decade of associated news reports. The rise of AI generators and generated contents has been increasing since the last two years after text-to-image models in deep learning machineries were reintroduced in 2015. This significantly brought volumes of positive public responses to the new discoveries, but this study however focuses more on evaluating overlooked biased problems interlinking the endangerment of the human positionality within artificial production. Performing under the theoretical framework of Marxism, the case study chosen, centres around the specific theories of machine replacing human labour in "Capital" chapter 15. Incorporating reviews, news reports, articles, interviews and other means of secondary resources, the secondary qualitative researches will contextualize a past case-study before the analysis and accompanied comparative experimentations. The cross-case analysis concludes a strong correlation between human bias to the artificial intelligences' biased judgements that leads to more debate towards the safety of all participants and participatory data the machine learns from. The results however prove its limitations within the grounds of circumstantially supported instead of factually evidenced due to the lack of primary research aside from the experimental examples. Subjectively, what are in need of improvements are the supervision of data used as the source of learning and classification, which to this day are mostly unmonitored scraps of data from the wide web.

**Keywords:** AI generators, algorithm, biasness, deep-learning, machine learning, neural network, prompt.

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## Introduction

There has been an instant surge of popularity in artificial intelligence yet again in the form of AI-powered content synthesis tools or also known as AI generators in the recent months of 2022, labelled as the year of "2022 Was The Year Of AI Art" by Medium (DeSignore, 2022). This can be rooted back to the reintroduction of Deep-learning methodology in 2014, the teachings of artificial intelligence in replicating how a human brain would process learnings as a means "the only viable approach to building AI systems that can operate in complicated real-world environments" from "Deep Learning" textbook (Goodfellow et al., 2015: 8). Deep learning is a subset of machine learning that focuses on training artificial neural networks with multiple layers of data sets to learn from and

extract hierarchical representations of data. It has revolutionized AI art generation by enabling models to learn complex patterns and generate realistic or innovative outputs. In the context of AI art generators, deep learning models are often used to generate images, music, or text stemming the positive responses from users across the States and had since increased in favouritism internationally.

This paper however will be studying the opposite effects and primarily analyse the negative sides to AI and algorithm operated productions, most specifically the biasness reproduced within the subjected results and whilst confirming the present allegations broadcasted throughout the job industries. Focusing on the main arguments connected to artificial biasness, discrimination and ethicality to conclude with suggestions on how the ethics and protocols surrounding AI can be improved to bring importance. The main goal is to find and bring awareness towards unnoticed or even hidden discriminative concerns that are often overshadowed by the extreme successes of new technologies, alike artificial intelligence in companies.

## **Methodology**

By using a case study and only secondary qualitative researches (news reports, articles and recorded interviews) to evidence for, the research gap surfaces in the form of circumstantial evidencing rather than factuality. This in turn will cause results to not be as reliable and accurate to that with prior mixed-method contextualization, questioning the importance of the argument. Due to the subject itself being one of the earliest research topics, there has always been gaps within both live news reports and past conclusive theories, which will unfortunately limit the research itself. The goals of this case study analysis is to deepen the understandings of effect caused by such machine operated models and reevaluate its effects in the jobs and industries. This particular case will then be followed after by exemplified experiments to strengthen either the problems, solutions or hypothesis, that the final cross-case analysis (between experiments) will be concluding from.

Automation and human interventions will as well be discussed as AI began to spread throughout many industries, slowly replacing more human workforces, where in which case study one will highlight in recognition to Karl Marx's theoretical framework of "Marxism" and the prioritization of capitalistic surplus values over the labour force. Although his prediction focuses more on how machinery may affect societal and capitalistic labour, it was the first pivotal resource that had drove the research towards the main topic as of present, through the correlations of "human vs machine" scenarios. As proven that AI are truly not fully machine and still needing of contract workers running them as summated in one of BBC's corresponded, "AI is not new, so why suddenly does it matter?" (Cellan-Jones, 2015) proving the Moore's law fore-castings as AI are dependent on Hardware computing, it does not fall far from still being highly influenced by human hands and trends.

The experiments are in need of prior knowledges of operating Artificial Intelligent generators - the assistive platform that is involved are the generative artificial intelligence program and service, Midjourney. The program runs under a well-known social platform server known as Discord. A social platform that allows direct communal communications, VoIP (Voice over Internet Protocol) and sharing contents. Like other rising AI generators, Midjourney develops through a research laboratory in San Francisco. It is still under development and was only publicized as an open beta tool by 2022, allowing discord users to produce their own AI imageries. This is where the significance of academic disciplinary like computer science are needed, which was primarily supported by textbooks like Deep Learning by Courville et al., 2015) to defined specific terms and technical theories in of support newer developments and cases.

Each problem is then assessed through technical theories referenced from the specific academic disciplinaries alike laws and social sciences to question the AI ethicalities. Within the evaluative section, solutions or problems concluded will be amplified further in the form of AI text-to-image generating experiments, that involves visual semiotics in relativist manners. A table will then be produced to collect significant visual signs or symbols that indicates any cultural or social niches and conventions. The trends and patterns of similarities and differences will be evaluated in the end of each experiments. This is to significantly understand and learn how artificial intelligence interpret, respond and enact on what they have learned and commanded from humans as well as support new hypothesis drawn from cases analysis.

## Results and discussion

### *Case Study: Discrimination within AI Automation*

#### (1) Biasness within AI in Recruitment Tools

Karl Marx once said "Labour produces marvels for the rich but it produces deprivation for the worker. It produces palaces, but hovels for the workers. It produces beauty, but deformity for the worker. It replaces labour by machines, but it throws one section of the workers back to barbaric labour, and it turns the remainder into machines" (Marx, 1983: 135).

That to him, machinery will be another set of hands to automate production by man. Asserting the statement into our theoretical framework, Artificial Intelligent is not far from any forms of machine labour or industrial equipment we started since the early 1700s, Industrial Revolution period; through Thomas Newcomen's creation of first modern steamed engine (prototype), James Hargreave's yarn spinning machine - the "Spinning Jenny" (1764, patent in 1770) or even James Watt's reparation of Newcomen's steam engine that earned himself his own engine, patent by 1769. The differences lie on the various forms machineries comes in; e.g. industrial equipment are physical assets, several gadgets are both hardware (tools, machinery, and other durable equipment) and software (the programs and other operating information used by a computer) build whilst systems like Artificial Intelligence are digital/virtual based and etc.

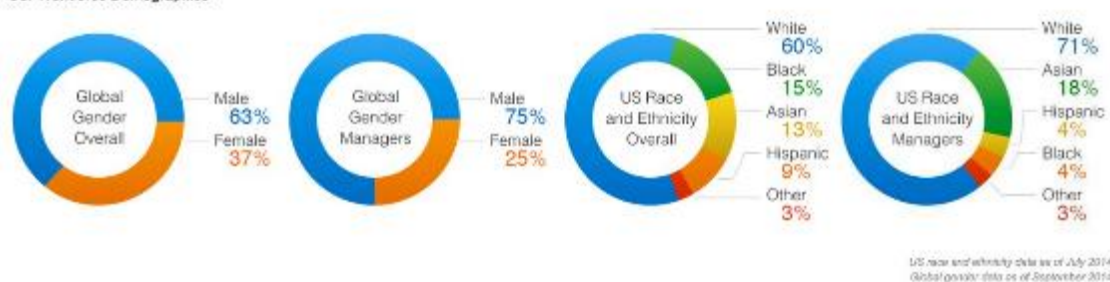
This case is chosen to exemplify exactly why the rapid growth of unauthorized AI automation can be of danger to all industries and not just the arts and designs, especially the working class and low-income workers. Take “Amazon.com, Inc” or better known as “Amazon”, one of five largest multinational running E-commerce tech company from America, as an example.

Amazon began applying algorithmic methodologies to increase efficiency in attending to every single user connected to the data providers. Whilst API is the method of communication between operations and functions, algorithms are the process and instructions used to complete the performance of said operations. Both are differentiated between requests and performances. The application of AI within Amazon began as means to improve customer service, in product quality, recommendations and shipping (About Amazon, 2023). As they continued their generative AI of AWS, they began to venture towards more physical automations alike transport and manufacturing, from AI controlled robots to do heavy-lifting, flagging defective goods to serve the best qualified products and shipping processes under the Flywheel management. The Amazon Flywheel also known as Amazon Virtuous Cycle, is Amazon’s marketing strategy when their small successes in the beginning cycles on one another to compile the growth they have today, from any means of Web traffic (sessions of visitation by users), Sellers, Selection, Customer experiences, Lower cost structure (expenses) and Lower pricing (products) (Grasso, 2020).

In simple terms, the effect replicates the function of a “heavy wheel attached to a rotating shaft so as to smooth out delivery of power from a motor to a machine. The inertia of the flywheel opposes and moderates’ fluctuations in the speed of the engine and stores the excess energy for intermittent use” (Britannica, 2023).

## (2) Problem Analyzation and Evaluation

Our Workforce Demographics

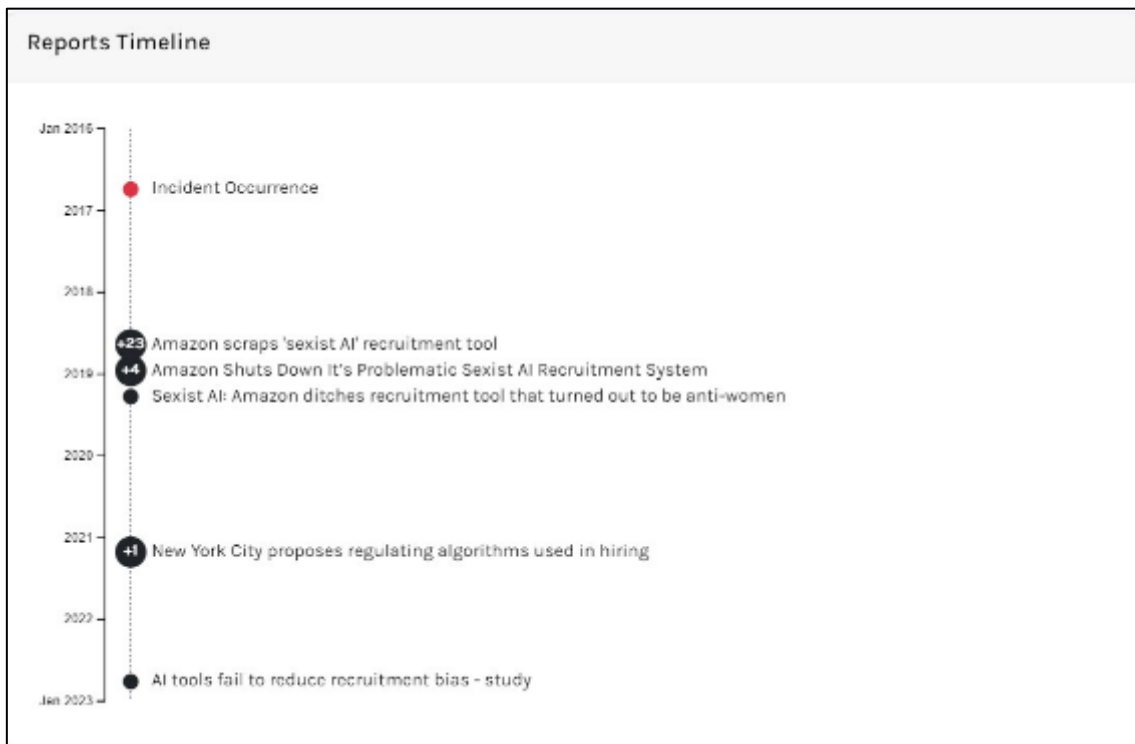


[Source: Amazon, 2014]

Figure 1. Workforce Demographic

Being one of the largest E-commerce providers, Amazon’s number of employees and applicants increases by over 90x more globally since 2007 of only approximately 17,000 to the 1,600,000 we now know on 2021, until the slight decrease by 100,000 in 2022. This wasn’t the only dominance however that rose as percentages of male workforces calculated are over that of female workers in 2014’s Amazon Diversity Report. The number of female employees were at least

half of the total number of male employees and even lesser so for the diversity in race between: White (60%), Black (15%), Asian (13%), Hispanic (9%) and other races (3%) in the overall rate by the end of 2014 (Amazon, 2014). This conclusion leads to a larger discussion in the transference of bias from human nature to machine. The very same year, Amazon set off a team of engineers from their Edinburgh office in Scotland, beginning the development of applying AI into their recruitment system, provided a three-year duration to succeed the potentially new tool.



[Source: McGregor, 2023]  
Figure 2. Incident Report Timeline

The following figure shows the timeline to which the incident occurred, showing already a faulty possibility to the project as at the same year, the company calculated the non-diverse past recruitments. This was channelled thoroughly as the team decided to reuse data from the last 10 years and ran 500 computer models over candidates' resumes. Although each computer models were designated to various different job functions, the 50 000 keywords collected were still limited to the past recruitment data (Reuters, 2018). This was highly reflected on 2015, when the algorithm excluded dozens of applicants that had keywords of "Women" and mostly accepted key terms that are associated to top performing employees; which unfortunately were dominated by mainly male employees for the past decades the company has been running.

According to Reuters, "the algorithms learned to assign little significance to skills that were common across IT applicants, such as the ability to write various computer codes." In practise, it turned out that the algorithms focused on verbs

commonly used by male engineers' such as "captured" and "executed". The underlying problem was that the majority of the resumés from successful employees had one decisive thing in common; almost all of them were men. This leads us to the main issue; Amazon's AI technology favoured men and thus discriminated against women (Nordmark, 2020).

### (3) Biasness within AI in Recruitment Tools

Apart from the main incident, the other problems that had occurred upon further analyzation were the unclear positionality of the team. As several headlines highlighted the very experimental nature of the project, plenty had stated the lesser qualified process of developing the tool. Whether intentional or not this could well be seen through the lack of consideration of past data used being less diverse and the very speedy demands the company itself had in for the project. One of the five engineers interviewed by Reuters stated, "They literally wanted it to be an engine where I'm going to give you 100 resumes, it will spit out the top five, and we'll hire those" (Reuters, 2018).

Which in given the scale of the team, would not be achievable in such a short timeframe duly because of how new AI Systems still were, even after their 58 years of development. And most of the developments, focused primarily towards research rather than production with teams mainly accumulating into research laboratories. Data security and ownership or data governance are the other sets of issues that may transpire depicted from the lesser care acted, the lesser quality of security. Rendering the system to not be as protected as imposed with the company's big brand which does not guarantee the safety of applicants' personal data from external attacks of potential cyber-crimes being; security hackings, malware attacks, cyberstalking or even identity theft. Although the team commented that the system "was never used by Amazon recruiters to evaluate candidates" (Synergia Foundation, 2018) they still essentially involved applicants' data, without certain acknowledgements of the experimentation, testing the boundaries of consent as the project was kept internally.

Many start-ups specializing in AI-powered recruiting solutions are promoting the idea that such tools can eliminate human bias in job-hiring decisions. However, hiring algorithms can only reduce biases in the hiring process so long as the input data is accurate and unbiased. Given that these algorithms are trained on historical data, any earlier biases embedded in the data must be addressed and eliminated (Synergia Foundation, 2018).

This brings us to other debatable considerations involved within the process, which would be the status of recruiters themselves. Returning to the roots of applying Karl Marx's and Marxists' theories on machinery replacing human labour; that capitalism machinery is not to lighten the load of workers and employees but to slowly replace them for the sake of surplus value as the profitable outcomes, which potential creates an argument towards the contradictory nature of Amazon's advocacy, "Leaders work every day to create a safer, more productive, higher performing, more diverse, and more just work environment" (About Amazon, 2023). Which was eventually proven over the years' machinery

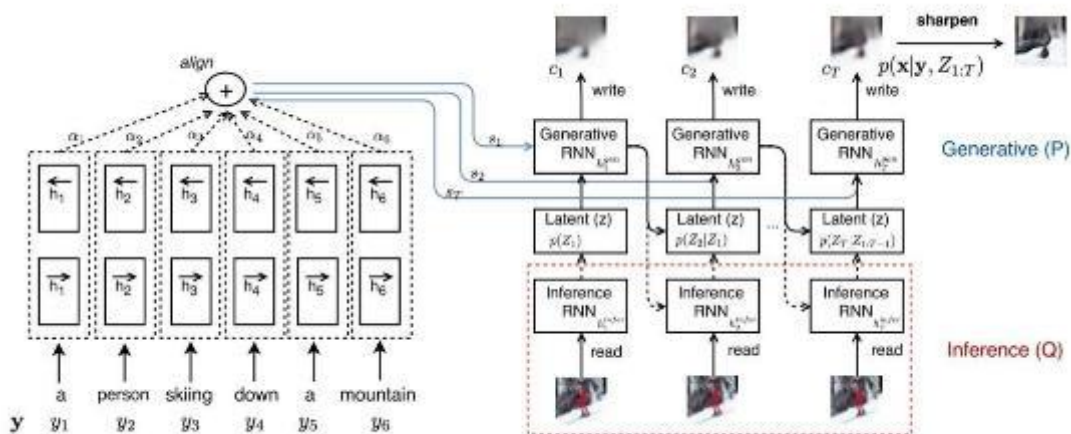


and AI growth within the company over the recent decades and as many employees were hire, many were as well laid-off with either being replaced by newer candidates or labour machineries. These practises do not define job security and safety of job positionality amongst the workers. Which as an exemplary is proven most recently with leaked reports of Amazon’s newer AI recruitment tools. In accordance to Jason Del Rey’s Vox report, as a senior correspondent at Vox and over a decade experienced journalist of big E-commerce industries, the company has not been transparent with the outcome of internal projects including the AI recruitment tools as many recruiters were left feeling their positionality to be threatened, let alone the many applicants that might be excluded due to automated biasness.

### Experimentation and Hypothesis

#### (1) Type of AI System Utilized

Although not new to research and computer science, Deep Learning is relatively renewed to the larger markets and public eyes once again since its recent modern debut in 2015 through align DRAW (hosted by researchers from Toronto University) - where the text-to-Image model indicates and generates from the process of aligning each part of the text, which combines those output to reiterate a new depiction in reference to whatever is prompted (e.g. Breaking-down a prompt sentence).



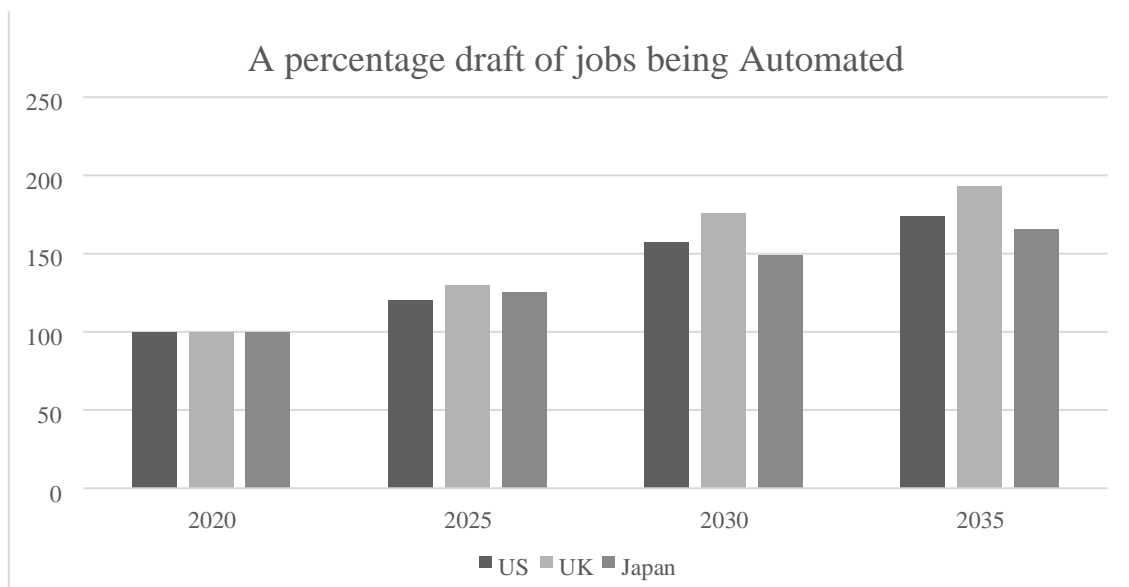
[Source: Zhu et al., 2020]

Figure 3. AlignDRAW model for generating images by learning an alignment between the input captions and generating canvas

The image above shows the caption is encoded using the Bidirectional RNN (left). The generative RNN takes a latent sequence  $z_{1:T}$  sampled from the prior along with the dynamic caption representation  $s_{1:T}$  to generate the canvas matrix  $c_T$ , which is then used to generate the final image  $x$  (right). The inference RNN is used to compute approximate posterior  $Q$  over the latent sequence (Zhu et al., 2020).

Today we still discuss this model as the Text-to-Image model and one of the learning machine methods Deep Learning (A method in AI that teaches computers to process data inspired by biological human brains). The art community has been one of the sole debaters amongst the launches of several digital AI art and image generators (e.g. OpenAI's DALL-E 2, Google Brain's Imagen, StabilityAI's Stable Diffusion, and David Holt's Midjourney server within discord) where linguistic literacy models are incorporated into the classification system to allow users input prompts to be translated to digital imageries. As all systems are in need of artificial neural network, these research labs in turn used the internet and mostly gain their datasets off web-scraping - collection millions and billions of assessible images – but keep in mind assessible does not always mean public domain or unauthorized data usage.

On a recent statistic study by Keelan Balderson under MSPoweruser, the statistics to workers losing their jobs and positions to AI has been mildly charted with an approximately annual growth rate of 37% within certain industries (Forbes, 2023). On current studies, United States were the first to be bombarded with researches regarding their development and increase of automated systems and machineries that rules modern factories. Then the research crossed to European countries and calculatedly had a higher prospect to having jobs at risked being replaced by Artificial intelligence and machineries.



[Source:Tansri, dkk., 2024]

Figure 4. The percentage draft of jobs being automated

The estimated (draft) statistic study on the percentage of jobs being automated or replaced by Artificial Intelligence. While annually the percentages of jobs at risk of being replace differs from time to time and countries and as exemplified here; the United States increases from about 20% - 74%, United Kingdom by 30%-93% and Japan from 25%-66% by 2035 (span of 5-10 years),



however they all similarly still have a higher probability of increasing then decreasing. But how does this concern a lot of what has been argued?

## (2) Trial Experiment

### (2a) Methodologies

The following experiment is conducted within a similar learning model of Deep-learning, which in this concept is used for generating imageries through text-to-image prompts, in a platform maintained by Midjourney and Discord. Discord's server or platform is used by Midjourney for discord users to produce any imagery under descriptive texts within the chat boxes and chatrooms. Taking Midjourney (San Fransisco based independent research laboratory that runs the program and service the AI text-to-image generator opened on 2022) in mind as a test subject, it should be noted that all experimentations are still in its own rights limited in terms of accuracy due to the very broad subject and as well in its early stages as the platform itself are constantly updating and progressing; with the version used now its 5th (--v 5.2) as its current default beta (when a version of a software is still in development and limited to a number of beta-testers or users) model. Any prompts have to always begin with the command formula of "/Imagine [Prompt]" and standard launches will produce 4 primary images. As mentioned on the above, this experiment will depict example of how similar problems arises and how similar solutions can be applied or demonstrated.

You can interact with ChatGPT in Swahili, but ChatGPT was developed primarily to work in English. So, a lot of the scrubbing, the content moderation, the important safety measures within the chatbot were done in English. So, when your prompt it in Swahili, you'll get more misinformation. You'll get more confusing sentences that don't make sense, and you will potentially get more of this content that they worked so hard to filter out because they were only filtering it in English (The Journal, 2023).

Taking-in to the listed capabilities of Midjourney, quoted above, the following experiments conducted will focus more towards the semiotic study of accuracy in interpretations and results when different languages are in use. With the help of Google translator, the languages chosen may not be overtly included under their supported linguistics but as Philipp Stelzel had suggested, "Midjourney understands commands in other languages such as German. Theoretically, you could even speak in Chinese or Swahili with the tool."

### (2b) Trial & Errors

This trial experiment will limit itself to 6 prompts for 4 variables, that each launch or generation produces their own 4 different images themselves. This experiment will involve the prompts and generated images as subjects of a comparative analysis between results with 4 given chances to each prompt. This is to also test the knowledgeability of the system between the varieties of languages used and how much inclusivity it provides to users. This can show whether or not they present diverse results, as to prevent harmful stereotypes and messages in imagery that is accessible globally. The goal is to create the

most realistic and diverse versions of the subjects, be it age, body type, gender, race and so on.

### *Prompts (Words/Commands) Utilized*

#### (A) Flower



- Figure 1. The top left image is generated from the English term "Flower";
- Figure 2. to its right would be the Indonesian translation "Bunga"
- Figure 3. bottom left "花" (Huā) the simplified chinese version
- Figure 4. bottom right the Japanese (Kanji) translation "花" (Hana).

#### (B) Fruit



- Figure 5. The top left image is generated from the English term "Fruit".
- Figure 6. to its right would be the Indonesian translation "Buah".
- Figure 7. bottom left "水果"(Shuǐguǒ) the simplified chinese version.
- Figure 8. bottom right the Japanese (Romaji) translation "フルーツ" (Furūtsu).

## (C) Food



- Figure 9. The top left image is generated from the English term "Food"
- Figure 10. to its right would be the Indonesian translation "Makanan"
- Figure 11. bottom left "食物"(Shíwù) the simplified Chinese version.
- Figure 12. bottom right the Japanese (Katakana) translation "食べ物" (Tabemono).

## (D) Person



- Figure 13. The top left image is generated from the English term "Person".
- Figure 14. to its right would be the Indonesian translation "Orang".
- Figure 15. bottom left "人" (Rén) the simplified Chinese version.
- Figure 16. bottom right the Japanese (Kanji) translation "人" (Hito).



## (E) Doctor



- Figure 17. The top left image is generated from the English term "Doctor".
- Figure 18. to its right would be the Indonesian translation "Dokter".
- Figure 19. bottom left "医生" (Yīshēng) the simplified Chinese version.
- Figure 20. bottom right the Japanese (Kanji) translation "医者" (Isha).

## (F) Nurse



- Figure 21. The top left image is generated from the English term "Nurse".
- Figure 22. to its right would be the Indonesian translation "Perawat".
- Figure 23. bottom left "护士" (Hùshì) the simplified Chinese version.
- Figure 24. bottom right the Japanese translation "看護師" (Kankoshi).

Table 1. Table of analysis on the prompts based on the glossaries.

F. TABLE OF ANALYSIS		
PROMPTS	TRENDS	DIFFERENCES
<b>Flower</b>	Light-skinned women, variations of flowers and colours, abstracted portraits, non-existent flower species, digital illustrations	Two images have no woman figures within the English and Indonesian prompt, whilst both the Chinese (simplified) and Japanese (Kanji) versions all have women present with different breeds of flowers, due to similar characters in usage - “花”, as Japan also has ideograms (or characters) adapted from the latter. These associations could rely from metaphorical symbolism of flowers and women to being feminine to the languages’ cultures.
<b>Fruit</b>	Colourful, the usage of colour red and various forms of floras or plants, digital illustrations and concept art	The Indonesian version may lightly depict particular fruits (pomegranate, dragon fruit) that can be found in native America but as well Asian countries compared to the more western arrangement in English. There were no direct representations of fruits present on either the Chinese (Simplified) and Japanese versions depicting more abstract results, however the terms “水果” (Shuǐguǒ) could be split to “水” meaning “water” and “果” meaning “berry”, whilst since the Japanese version is in Romaji - a system of Romanised spelling used to transliterate Japanese, the word could not be retranslated clearly.
<b>Food</b>	Piles of food, colourful, variations of ingredients (meat, vegetables, fruits and more)	There is a portrayal of only desserts in the English version, but mostly diverse in western cuisine. Indonesian version mostly has depiction of human interaction with southeast food and ingredients, and with the Chinese (simplified) depicts more abstract results in direct translation of “食” (Shí) meaning “eclipse” and “物” (wù) meaning “object/matter” but still including food ingredients. “食べ
		物” (Tabemono) is the Katanaka version translated from google and meant both ingredients or dishes on the table. The common portrayal of fishes maybe symbolic to East Asian art and society and mostly for representing wealth, due to characters having similarities.
<b>Person</b>	Portrayal of women, fair-skinned characters, coloured but less brighter colours	The English portrayed Caucasian human figures which the Indonesian version differs by portraying “Orangutan”, an ape species native to Malaysia, interpreted from “Orang” and the Chinese and Japanese versions, both portrays similar East Asian women with mixed elements due to the nature of Chinese characters and Kanji arrangements.
<b>Doctor</b>	Portrayal of human, Cooler colours, abstracted portraits	The English and Indonesian version portrays all Caucasian men, with the latter being more abstract/fictional in form. By Breaking down the Chinese characters, definitions are the same for both Chinese and Japanese - “医”(Yī) meaning “medicine/doctor” with “生” (shēng) meaning “Life/student” and “者” (zhě) meaning “person”.

<p><b>Nurse</b></p>	<p>Portrayal of women, Cooler colours, the usage of colour red, abstracted portraits</p>	<p>The English version portrays Caucasian women while the rest has more conceptual designs. Both the Indonesian and Japanese version has portrayals of abstract architecture and landscape backgrounds. The Japanese version is the gender-neutral noun of the job position Nurse, hence no specification of genders similar to the Chinese version “护” (Hù) means “protect” and “士” (shì) means “scholar/warrior” but results solely shows East Asian Women in traditional-like clothing.</p>
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### Final Experiment

#### (1) Methodologies

This final experiment will be enacting a similar method in comparative analyzation but will be conducted upon a real exemplified case – 3rd case study. Alike the trial, it will limit itself to 6 prompts for 3 variables that stems from Amazon’s list of available jobs, running under the tertiary sector (e.g. healthcare, retail, tourism, hospitality, entertainment and etc), that are more associated to services and assistive services then production. And this time, each of the 3 prompts would gradually have more descriptions add to each of the 6 launches/generation. This is also to test the knowledgeable and bias of the system between varieties of specific job positions and their capability in the level of accuracy. The goal is to create the most realistic and diverse versions of the subjects working in the sectors, be it age, body type, gender, race and so on.

Glossaries (Variables): Technical Recruiter – “an HR professional responsible for sourcing, screening, and selecting qualified candidates for technical roles” (Workable, 2023). Software Development Engineer – “Amazon software engineers have the responsibility of building, maintaining and running the software they own including the dependencies of their team's software, hardware platform, operating system and build” (Amazon Jobs, 2023). Warehouse Operative – “-receive and stow products, pick and pack customers’ orders. It’s an essential role at Amazon: you literally bring customers’ orders to life, every day” (Amazon Jobs, 2023).

#### (G) Technical Recruiter



[Source: Midjourney, 2023]

Figure 1. The three AI images produce under the prompt “/Imagine [Technical Recruiter]”





[Source: Midjourney, 2023]

Figure 2. The three AI images produce under the prompt “/Imagine [A good technical recruiter]”



[Source: Midjourney, 2023]

Figure 3. The three AI images produce under the prompt “Imagine/ [A realistic, skilled and professional technical recruiter]”



[Source: Midjourney, 2023]

Figure 4. The three AI images produce under the prompt “Imagine/ [A skilled and professional, technical recruiter from Human resource department]”



[Source: Midjourney, 2023]

Figure 5. The three AI images produce under the prompt “Imagine/ [Real, skilled and professional, technical recruiter from Human resource department working in an office]”





[Source: Midjourney, 2023]

Figure 6. The three AI images produce under the prompt “Imagine/ [Photography of diverse casts of skilled and professional technical recruiters from Human resource department working in an office]”

Table 2. Table of analysis on the prompts based on the glossaries and job position “Technical Recruiter”

G. TABLE OF ANALYSIS				
PROMPTS	STYLE	SIMILARITIES	DIFFERENCES	CONCLUSIONS
<b>Technical Recruiter</b>	Art Concepts	<ul style="list-style-type: none"> <li>• Mostly white Caucasian Men, fewer women</li> <li>• Clothed in suits, mostly accessorized with eye wears, electronic devices, documents and beverages</li> <li>• Mostly situated on desks</li> <li>• Several smiling figures</li> <li>• There are shades of brown all throughout each launch.</li> </ul>	Detailed but conceptually fictional (sci-fi) and takes a more fantastical route (robots) to the terms used.	Lesser terms and vague descriptions: The first three launches have lesser specificity to go by, thus had more explorative concept and narratives, however there is a lack diversity and only limiting to expressions (smiling) to be associated to adjectives like “Good”.
<b>A good technical recruiter</b>	Conceptual Illustration and Clip Arts		Lesser portrayal of fantastical narratives but more of illustrate nature with one imagery portraying an Asian woman and another without a figure	
<b>A realistic, skilled and professional technical recruiter</b>	Clip Arts and Flat art or Corporate Memphis and Alegria art (Big Tech Art)		A more modernized take, with two portrayals being realism art-style, one imagery having a woman figure and mostly simpler flat arts inspired by big tech illustrations	
<b>A skilled and professional technical recruiter from Human resource department</b>	Photo-realism and Flat arts		Having mostly photo-realistic images, with only three being of flat art styles and only one portrayal of a woman	More terms and descriptive details: Although there are still a few launches depicting illustrative imageries, the last three versions of the prompt have produced more modern realistic results as the more descriptive terms are added to the prompts, the more detailed the generated images turn out to be. There are still a few instances of fictional elements to the results, however the machine has shown enough realism to the generator’s ideas of how “modern” technical recruiters would look like.
<b>Photo-realistic, skilled and professional technical recruiter from Human resource department working in an office</b>	Digital-realism and Photo-realism		Mostly photo-realistic with a few details being plausibly out of place (fictional), with three portrayals of woman smiling compared to the men	
<b>Photography of diverse casts of skilled and professional technical recruiters from Human resource department working in an office</b>	Digital-realism and Photo-realism		Following the detailed prompt sentencing, there is more diversity within the imagery in terms of subjects, however there is still fictional elements.	

(H) Software Development Engineer



[Source: Midjourney, 2023]

Figure 7. The three AI images produce under the prompt “/Imagine [Software Development Engineer]”



[Source: Midjourney, 2023]

Figure 8. The three AI images produce under the prompt “/Imagine [A good and qualified software development engineer]”



[Source: Midjourney, 2023]

Figure 9. The three AI images produce under the prompt “/Imagine [A qualified, skilled and professional software development Engineer]”



[Source: Midjourney, 2023]

Figure 10. The three AI images produce under the prompt “/Imagine [A qualified, skilled and professional software engineer fixing a computer]”



[Source: Midjourney, 2023]

Figure 11. The three AI images produce under the prompt “/Imagine [A real photography of diverse types of qualified, skilled and professional software engineer fixing a computer]”



[Source: Midjourney, 2023]

Figure 12. The three AI images produce under the prompt “/Imagine [A real photography of diverse types of qualified, skilled and professional software development engineer of different genders, races, ages, body types fixing a computer]”



Table 3. Analysis table on the prompts based on the glossary and job position "Software Development Engineer"

H. TABLE OF ANALYSIS				
PROMPTS	STYLE	SIMILARITIES	DIFFERENCES	CONCLUSIONS
<i>Software Development Engineer</i>	Conceptual Illustration and Clip Arts	<ul style="list-style-type: none"> <li>All imageries depict under the modern era with element examples of advanced laptops, computers or interior design (desks, types of pendant lighting in the background)</li> <li>All are Male Subjects</li> <li>Mostly bearded, Caucasian men as subjects wearing glasses and in casual wears.</li> <li>Mostly in a sitting position and working in the dark. Almost mostly working in front of devices or machineries</li> <li>Split-Complementary and cooler Colour Schemes and subjects are mostly shaded.</li> </ul>	Subjects are depicted in a mixture of different digital and illustrative art styles.	Lesser terms and vague descriptions: The first two launches have less details to the prompts, resulted in more abstracted or illustrative imageries. Associating adjectives like "good" to expressions of joy or smiling and generally lacks diversity in subject depictions as most if not all subjects are similar in appearance.
<i>A good and qualified software development engineer</i>	Conceptual Illustration, Clip Arts and digital realism		More subjects are starting to have more differences in features. Most subjects are facing the camera, smiling and there are more conceptual illustrative depictions of the prompt.	
<i>A qualified, skilled and professional software development engineer</i>	Digital-realism and Conceptual Illustration		All subjects are facing the camera, but not all are smiling and there is an increase of a more realistic (art style, background/setting elements) design, with cooler and warmer tones respectively used.	Descriptive but no direct details: The second two launches have lesser illustrative imageries and started to have more realistic digital images and stayed in the modern settings of how some elements (gadget, clothing) looked. There is still however lack of diversity in terms of subjects' portrayed.
<i>A qualified, skilled and professional software development engineer fixing a computer</i>	Digital-realism and Photo-realism		Most subjects are photo-realistic or digitally realistic and compared to the other generated imageries, subjects are physically working on machineries. More subjects have distinctive facial features.	
<i>A real photography of diverse types of qualified, skilled and professional software engineer fixing a computer</i>	Digital-realism and Photo-realism		Following the more detailed and direct command of the prompts, the imageries generated has taken a photo-realistic style and are now mostly cooler tones.	More terms and detailed descriptive: the more detailed and specific the prompts were, the more realistic the portrayal became. The fifth launch came out to be the most realistic compared to the previous four, however needed more specific details ("of different genders, races, ages, body types") to be able to generate more variations of people in each image. Most are working under the dark.
<i>A real photography of diverse types of qualified, skilled and professional software engineer of different genders, races, ages, body types fixing a computer</i>	Digital-realism and Photo-realism		More diversity in terms of gender and race to the subjects' portraits. Visually, there are as well more differences in lighting, shading and colour schemes to each image. A few are facing the camera.	

(I) Warehouse Operative



[Source: Midjourney, 2023]

Figure 13. The three AI images produce under the prompt “/Imagine [Warehouse Operative]”



[Source: Midjourney, 2023]

Figure 14. The three AI images produce under the prompt “/Imagine [A good warehouse operative]”



[Source: Midjourney, 2023]

Figure 15. The three AI images produce under the prompt “/Imagine [A professional warehouse operative handling packages]”



[Source: Midjourney, 2023]

Figure 16. The three AI images produce under the prompt “/Imagine [Diverse professional warehouse operatives handling and moving packages]”



[Source: Midjourney, 2023]

Figure 17. The three AI images produce under the prompt “/Imagine [A diverse body type and aged professional warehouse operatives handling and moving packages]”



[Source: Midjourney, 2023]

Figure 18. The three AI images produce under the prompt “/Imagine [Diverse types of professional warehouse operative, from different ages and body types, handling and moving packages]”

Table. 4: Analysis table on the prompts based on the glossary and job position "Warehouse Operative"

<b>I. TABLE OF ANALYSIS</b>				
<b>PROMPTS</b>	<b>STYLE</b>	<b>SIMILARITIES</b>	<b>DIFFERENCES</b>	<b>CONCLUSIONS</b>
<i>Warehouse Operative</i>	Digital-realism, illustration, Photo-realism	<ul style="list-style-type: none"> <li>• Most imageries resulted in digital or photo realistic styles of design.</li> <li>• Most are dressed in similar uniforms (Safety vests, head gears, etc)</li> </ul>	More conceptual in style and less photo-realistic with one imagery not being a close-up shot of a subject. Diverse features of gender and ethnicity as well as uniforms (colour).	Lesser terms and vague descriptions: Overall the first launches are diverse in gender, albeit more male to female ratio and has more art style varieties.
<i>A good warehouse operative</i>	Digital-realism, illustration, Photo-realism	<ul style="list-style-type: none"> <li>• Backgrounds are limited to indoor spaces (e.g. storage)</li> </ul>	Most subjects are directly smiling at the camera. Subjects wearing similar clothing (safety vest colour)	
<i>A professional warehouse operative handling package</i>	Digital-realism, illustration, Photo-realism	<ul style="list-style-type: none"> <li>• Timeline are mostly of modern settings as can be seen through the interior elements and the constant presents of cardboard boxes, instead of other alternatives alike plastic containers or older wooden crates</li> </ul>	Half of the subjects are smiling or facing the camera, whilst others are occupied in carrying packages and are in a brighter setting (lighting). Not as diverse in featured races, as most are Caucasian (estimation)	Descriptive but no direct details: Mostly realistic results, increased the number of female workers and has further diversity in race, age and body type. Still lack diversity in settings and backgrounds for work environment – as all portrays similar, uniforms, equipment and shelving units.
<i>Diverse professional warehouse operatives handling and moving packages</i>	Digital-realism and Photo-realism		Imageries are portraying more than one subject in each pictures and diversity in both gender and ethnicity.	
<i>A diverse body type and aged professional warehouse operatives handling and moving packages</i>	Digital-realism and Photo-realism	<ul style="list-style-type: none"> <li>• All launches have diverse casts of workers in terms of races or ethnicity, however there are lack of different body types and age ranges</li> </ul>	More subjects are of different ages and body types, but diversity in gender and race are lesser. Lighting are in a darker setting compared to previous results.	More terms and detailed descriptive: The fifth batch of launches are hype realistic and has more diversity in race, age, and body type but no female workers, whilst the last launch portrays more numbers of employees in one image and more diversity in art style and social demographics.
<i>Diverse types of professional warehouse operative, from different ages and body types, handling and moving packages</i>	Digital-realism, Photo-realism, Conceptual illustration	<ul style="list-style-type: none"> <li>• Colour schemes are more of warmer tones than cooler.</li> </ul>	Design styles are mixed with illustratively conceptual interpretations, but more diverse subjects in gender, races, body types and ages.	



## *Analyze and Evaluate*

### (1) Trial Evaluation

The launches' trend could be described to have similarity in style depiction - illustrative and digitally conceptual than hyper-realistic. The first and the third prompts have the closest results to each different languages' versions of the terms used. However, the first English prompt "Flower" seems to associate the single flora term to women instead of directly resulting an imagery of non-human flowers, whilst the second and third English prompts had successfully depicted the subject without humans. This could either: one; shows the large datasets and sources attached to the term in the system or, second; that the machine had started to create its own interpretation, to what a "flower" is. In the form of linguistic history, the connection between flowers and women could be exemplified through western culture's associations of the terminologies dating back to the Middle Ages - in the many forms of visuality, symbolisms and metaphors through the physical similarities between the two subjects. Since datasets actively scrap billions of accessible images, the data collection may as well include uploaded photography and scans of traditional paintings, especially those of which are of public domain to the wide-web. In Stott's journal article "Floral Femininity: A Pictorial Definition", emphasizes on these connections being portrait extensively throughout history.

Floral analogies have been employed to describe various attributes of femininity in art, literature, and thought at least since the Middle Ages. In Western painting, this often took the form of Individual flowers used as symbols of specific feminine virtues (Stott, 1992)

However, what happens if these results were to be misinterpreted in a harmful manner by both the moderators and users. As clearly shown, several of the prompts presented human subjects with distinctive but repetitive appearances for all languages (E.g. the women are shown to have similar body types and face shapes, even with race differences) which may unconsciously reveal the lack of inclusivity. Due to the English dominant system, the machine translates other languages letter-per-letter (alphabets) which works best, mostly for alphabetical-based languages including Indonesian, but still the system also has instances of words being retranslated with culture associations like the results for the prompt "Person". Results could as well be of risk being misinterpreted through the western lenses leading to stereotypical perspective or biases such as orientalism. According to Edward Said, "Orientalism" could be defined to be a mixture of its two older versions of the academic and imaginative definition.

Taking the late eighteenth century as a very roughly defined starting point Orientalism can be discussed and analysed as the corporate institution for dealing with the Orient—dealing with it by making statements about it, authorizing views of it, describing it, by teaching it, settling it, ruling over it: in short, Orientalism as a Western style for dominating, reconstructing, and having authority over the Orient (Said, 1979: 3).

Applying this theory towards the limitation of current AI generators could lead to accessibility complications of users whom may not be fluent in English, so

many won't be able to use the generators to its fullest potential, as larger platforms like Midjourney had started to globally promote its various functionality to be multi-lingual. Worst scenarios could as well include data collection from foreign countries, especially low-income countries that has lesser chance of encountering its existence due to affordability. Although the system does not outrightly copy or infringe from original sources, consent is just as important to be acknowledged by sourced authors and creators.

## (2) Final Evaluation

All prompts as well needed enough descriptive terms to have the most realistic and diverse results, but each job position had varying levels of reaching the goal. Specifically, the prompt "Technical Recruiter" initially only produced abstract depictions if compared to the real job-title itself and portrays more stylistically in the form of illustrations with fictional elements, backgrounds and backdrops. The overall art style within the content are more picturesque illustrations than realistic photography, but even so a trend and pattern could already be indicated from the very beginning. Exceptionally, only two launches produced women figures dressed in the same manner within the first three prompts. This is similar to the prompt of "Software Development Engineer", where the first three launches are illustrative and mostly portrayal of men in similar appearances, and amongst all the labels, this prompt needed the most description which could potentially estimate the gap dominance in these types of work force. Distinctively "Ware house Operative" had the most realistic and needed the least descriptive prompts to have diverse results which could be speculated, that the machine may have lesser illustrations associated to the job position and more photographic datasets (e.g. stock images).

The problems lie within the default pattern the AI assumes over the launches with repetitive similarities and lack of diversity as stated within the similarity lists with only producing one figure to be mostly as - Caucasian men in similar appearances. With subjective prompts like "good", they mostly associated the portrayal of expressions through facial gestures of smiling that however could be speculated as an act of friendliness for the other prompts as the term "good" were only used once, it may have connections to the roles of recruiters (human resource department) having to service others. But the experiment could conclude, how the level of detail in data could be just as impactful as the results it gives and one misinterpretation could lead to a large amount of inclusivity towards labour.

## Conclusion

This research aimed to identify the authorship and displacement concerns of Artificial Intelligence generators and their content in regards of the risks of losing one's positionality in personal, general and professional settings. By analysing and evaluating newer cases which initially could only be connected through AI automation, the comparative analysis between each case studies could draw out the trend of AI replacement and lack of accessibility

responsibilities, whilst uncovering other unknown or newer problems to the systems. It can be concluded that although Artificial Intelligence should be welcomed for its rapid advancement, volumes of issues as well increases and whilst the systems are still all in its earlier stages, there is an importance of fixing present problems first before continuing the development as to avoid absolute uncontrollability in the future.

By analysing this case study, where large amount of Amazon workers was reported to have been dismiss after the company began to incorporate more AI systems in the organization. Bringing back Marxist theory of human labour displacement due to the advancement of automation and machineries, AI place a crucial factor in following suit. One of the impactful job positions being recruiters, whom are in charge of recruiting new employees in every company. This further enforces the worry and pressure of new applicants and day-to-day workers working under the corporates that are applying such methods. As depicted through the final experiment with Midjourney, the lack of general diversity in the AI's visual interpretations and results could lead exclusion of certain communities, whether due to appearance, skill sets or even key-words on resumes. There are already existing workforce gaps when it comes to payment, employment and opportunities which would lead to the increase of unemployment and worst-case scenario, poverty.

This brings back the problem statements of AI bias causing misinterpretation or stereo-typical generalization by reflecting on the human's whom runs them, as English-based AI systems. Which could be easily seen from the first trial experiment in testing the linguistic capabilities of a global AI content generator. This is not to say, that it's the labellers' nor primarily the machine's fault but more so the carelessness of organizations debuting and marketing such new technologies without considering further measures. Technical platforms that are expose to a global wide audience through just the means of with-holding the services online. Before the enactment of usage responsibility on users, companies should as well start being the first to supervise and constantly review before releasing contents or access to the mass public. Although this paper could only focus on one case study, but simple solutions like editing prompts suffices in showing the flexibility of the tool's nature and gives an open-ended hope for improvements.

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