Ethics of Facial Recognition Within Businesses

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Abstract

In today's society, technology has changed the way in which we perceive our lives and daily tasks. Artificial intelligence is one of the most influential technological innovations that has established a strong foothold in our world. While artificial intelligence has created many possibilities in the fields of computer science, business, and medicine, its imperfections must be addressed in order to move forward. Some of these imperfections reflect racial and gender biases that have created controversy in the realm of ethics and philosophy. In other words, artificial intelligence encourages discriminatory practices: this discrimination is most prominent in facial recognition. Therefore, in this research paper, I want to explore the extent to which biases within facial recognition can be eliminated. In order to get a better understanding of this matter, I will find various case studies involving business corporations to assess the true effects of biases within facial recognition. In addition to this, I will conduct a survey to gather specific data from those who have experience with artificial intelligence. From my research, I expect to find that while biases within facial recognition can be eliminated, it cannot be removed completely. As a result, businesses will need to discover a work around to deal with the issue at hand.

Introduction

AI is a new and upcoming technology that is revolutionizing the way in which information is accessed and tasks are performed. In today's world, AI continues to grow as shown by the development of Siri, Alexa, facial recognition, Chat GPT, etc. Facial recognition has become a beneficial AI tool, however, it has its flaws, for it encroaches on people's privacy and unknowingly discriminates between people. When AI is used in businesses, certain individuals are impacted by racial discrimination. It has been shown that people with lighter skin tones are easier for AI to identify versus those with darker skin tones. Businesses such as IBM and Amazon have had to eliminate facial recognition technologies from their companies because of these ethical issues. This paper will explore the extent to which biases and privacy concerns within facial recognition can be eliminated so that technology companies and commercial businesses can successfully implement tasks and make decisions.

In this paper, the ability for businesses to accomplish their goals will be analyzed in light of the various ethical concerns regarding facial recognition. While facial recognition technology has proved to be a beneficial source of income for many companies, its issues regarding privacy and racial bias have threatened these companies' security and validity in the long run. An analysis of various case studies has proved that the best course of action is to wait for improvements within facial recognition so that inaccuracy can be eliminated.

Analysis 1: Facial Recognition in Business Corporations

Various companies such as IBM, Microsoft, and Amazon have released their own technological devices which utilize facial recognition to make certain processes such as identification more convenient. IBM and Microsoft's facial recognition devices have had the "highest error rate for darker-skinned females" (Fleischer, 2020) as seen in their algorithm's results. Similarly, Amazon has dealt with these moral issues as seen through their program "Rekognition", a cloud-based software that administers facial recognition technology. For instance, twenty-eight NFL players were "falsely identified" as offenders via Rekognition (Fleischer, 2020). Many people of color have been misidentified as criminals which has broached the discussion of ethics. Therefore, these algorithmic biases have created multiple unpleasant scenarios that have encouraged racial discrimination in today's society. After these situations unraveled in the public eye, a solution was proposed by the Federal Government to Congress stating that the Federal Acquisition Regulation (regulation for acquiring supplies/services) should be amended and legislation should be passed in order to "protect people of color" (Fleischer, 2020). While considering the matter holistically, it appears that these companies aimed to make profit and revolutionize AI technology at the same time. These companies' convoluted mindset has brought issues that are now being debated at court, bringing unnecessary complexity to an already complex area of study.

To pull ahead in the AI technology race, Amazon chooses to market their product to a specific demographic: the police department. This demographic further promotes Amazon's new Ring doorbell camera, a form of surveillance technology which can monitor a neighborhood and capture any criminal activity via facial recognition. In order to make the process easier for the police department, Amazon has deployed this technology so that the police can access footage with "a single click rather than by warrant" (Frascella, 2021). While both Amazon and police departments are benefitting, their cooperation shines a negative light on matters regarding privacy. This is because any individual may appear in the view of the cameras which can threaten their privacy and civil liberties. While this is a prevalent issue, the doorbell network may "pose additional risk to communities of color" by capturing footage of those with darker skin tones and mistakenly accusing them for committing a crime (Frascella, 2021). Both Amazon and police departments have benefited from cooperation over this technology, motivated by self-interest–Amazon wants to make a profit, while police departments want easy access to cameras that may help them solve crimes. The rapidness at which facial recognition was integrated into the police department's strategy was concerning, considering the newness of AI technology as a whole. Because the police force has such a crucial role in our society, their strategy and methods should only involve technology and equipment with minor imperfections to ensure the implementation of just procedure at all times. Using AI technology prone to error could not only affect the police's credibility and ability to spot crime, but it could also cause inevitable consequences for Amazon. These include a halt in marketing and selling the product, and legal battles that could disrupt the identity and cohesiveness of the corporation.

While Amazon's relatively new Ring technology has caused problems, ethical issues have been present in AI from the start as seen with Facebook & Microsoft. In 2011, a Facebook feature called "Tag Suggestions" (setting which controls if individuals can be tagged) seemed to "compromise consumer privacy" (Cooney, 2011). At this point in time, Microsoft also dealt with "privacy and security concerns" while "building facial recognition technology into Windows 8" (Cooney, 2011). To explore these issues further, a Federal Trade Commision (FTC) workshop

was held to discuss the use of facial recognition and AI technology in relation to ethics regarding privacy. However, this workshop took place in 2011. After a few years, one would hope that a concrete solution would be set in place; however, this was not the case, and these companies and consumers are intertwined within the advancement of technology and the ethics of it. While these companies worked to enhance AI, the moral issues regarding facial recognition have hindered the widespread adoption of the technology since questions regarding the ethics of their products were expressed.

However, AI should not be discredited due to these privacy concerns and racial biases as shown by the implementation of emotional recognition, AI technology that can identify human emotion. For instance, the Microsoft HoloLens (MHL), a mixed reality device, allows users to "experience both virtual reality and augmented reality" (Mehta, 2018). In order to implement "interaction with the surroundings", the use of holograms aims to create "a digital world" (Mehta, 2018). For the device to work, emotion recognition technology is used. Contrary to the use of facial recognition, emotion recognition does not encroach on privacy and discriminate against racial minorities since its focus is on specific facial features instead of the face as a whole. In addition, sensors are crucial for the MHL to function because it is used to "observe how the emotion recognition algorithm works" (Mehta, 2018). This is essential since every change in expression needs to be "detected" and "recognized" (Mehta, 2018). With the creation of this product, Microsoft has shown that AI and recognition technology can be used effectively and efficiently, without threatening privacy or encouraging racial bias. This indicates that advancements in AI technology can be appreciated by the user and also benefit the company. Furthermore, Google has also built a product called the Google Glass which serves to be a major competitor of the MHL. The Google Glass is an eyeglass that works as a "smartphone in the form of glass" by "communicating with the internet" which utilizes emotion recognition to implement its processes (Mehta, 2018). With these products, it is evident that business corporations can still profit off of AI technology as long as it is used in the right way. On the whole, emotion recognition does not have the same issues as facial recognition, for issues of racial bias are nonexistent. This further proves that AI technology should not be dismissed entirely.

Moreover, this idea is also explored through a successful partnership between two companies, Veridium and Junio. Together, they have been able to "provide solutions regarding biometric identities in various industries" ("Veridium and Junio Partner", 2021). Because of their strong partnership, they have been able to "eliminate fraudulent systems" by creating functional facial and fingerprint biometric recognition ("Veridium and Junio Partner", 2021). Their work has turned into a possible solution that could resolve the issues regarding ethics and privacy within facial recognition technology. In fact, it is their collaboration that has allowed them to discover a solution. If other companies such as Microsoft, Amazon, and Google work together to find a way to ensure privacy and eliminate racial bias, it could do wonders in the technology industry and society as a whole.

Business corporations have developed facial recognition technologies that have benefited numerous parties, but have also threatened basic human rights. However, in terms of AI as a whole, these technology companies have been able to make remarkable advancements. Businesses should continue to incorporate AI so that users can utilize it to their advantage; however, technology such as "Rekognition" which uses facial recognition should be banned for the time being so that biases can be eliminated and issues regarding privacy can be addressed at the federal level.

Analysis 2: Facial Recognition in Commercial Businesses

As large business corporations have worked to develop facial recognition technologies, commercial businesses have been inclined to use them. Within no time, “retailers, airports, stadiums, and businesses” began to use facial recognition devices to “improve security and speed up customer check-ins” (Janofsky, 2019). However, the proper implementation of facial recognition heavily depends on where it is being used. For instance, in the California police department, the use of facial recognition has been prohibited for falsely identifying people of color as criminals. On the other hand, at Miami International Airport, facial recognition and other biometrics have “cut passenger screening wait times by up to 80%” (Janofsky, 2019). These two situations make it difficult to simply pass legislation to eliminate facial recognition technology, for its benefits are only pronounced in some areas. As a result, The Commercial Facial Recognition Privacy Act bill (a bill to prohibit the use of facial recognition without documentation) did not pass through “to a committee vote” (Janofsky, 2019). Because of the opposing opinions, the situation regarding the ethics of facial recognition and the role of commercial business remains stagnant. Therefore, no legislation can be passed and the issue will continue to negatively impact certain groups since an official “ban” cannot take place.

However, facial recognition seems to be working well for the majority of commercial businesses. In different restaurants, hotels, and businesses, the installation of facial recognition contributes to the customers’ positive “purchasing experience” (Dijmărescu, 2022). In addition to this, excellent “service performance and security” are ensured (Dijmărescu, 2022). During mobile payment, customers are able to use facial authentication to “complete transactions” at certain stores and restaurants (Dijmărescu, 2022). With these benefits, customers are drawn to the convenience surrounding facial recognition and they utilize it on a daily basis. Contrarily, this experience is quite different from the situation at the California police department. It’s important to consider that some people reap the benefits of facial recognition technology while others feel that their civil liberties are threatened.

As consumers continue to use AI technologies, a smart receptionist system which uses facial recognition is being developed. The goal of this system is to help customers and address their needs while “requir[ing] less manpower” (Ahmed, 2021). In order for facial recognition to function correctly, various algorithms will be used to “detect the face of an individual, store the data and learn them, and use techniques to identify the person” (Ahmed, 2021). Once a customer returns, their faces will be easily identified because of the existing data provided the first time. Regarding facial recognition, the model is accurate around 99% of the time. When reviewing this at a surface level, it seems that this model is purposeful and accurate so implementing this in the real world would not be an issue. However, this model would technically store data of millions of faces in a database. In the real world, no one would know where all this data is being kept and who has access to it. Therefore, it is important to allow transparency with all customers and individuals so they know exactly where their information is going. All businesses should only use facial recognition tools if they guarantee security for their customers.

Analysis 3: Legal Attempts & Solutions to Regulate AI

As facial recognition continues to be an issue in our society, individuals have been trying to find solutions that will improve the situation. For instance, in Mr. Weiner's (Counsel in EPIC's Project on Surveillance Oversight) testimony, he states that use of facial recognition can lead to limited privacy and constant surveillance. His testimony would influence the New York Council when deciding if two bills would pass: the first being to "ban face surveillance in places of public accommodation" and the second being to prohibit "face surveillance by landlords" ("Epic to NYC City Council", 2023). Whether or not this piece of legislation was successful, the issue has been addressed and awareness of the topic will spread further. However, because the bills were discussed at the state level, its outcome won't impact the usage of facial recognition in other parts of the country, limiting its effectiveness as a possible solution.

While this piece of legislation represents the initiative taken by the states, it's important to address how the federal government can improve the situation. In terms of facial recognition, the important issues are "discriminatory biases in biometric systems, privacy, and the ability for individuals to control their biometric data" (Olszewski, 2022). A few solutions that may alleviate these ethical concerns are if the federal government "giv[es] people ownership over their data, establishing a data privacy network, and "ban[ning] the use of biometrics for mass surveillance" (Olszewski, 2022). While these solutions could help deal with security and privacy issues, they may not help resolve the issue of discriminatory bias. In order to eliminate any discriminatory biases, the AI must continue to be improved upon and trained. Therefore, it will take time to release more accurate facial recognition technologies.

Literary Review Conclusion

Because commercial businesses rely heavily on facial recognition technology to speed up certain processes, it would not make sense to ban "all" facial recognition technology. However, all major business corporations should be cautious of what they are selling and who they are selling to. For example, selling to third parties such as police departments and hospitals should be banned. The usage of certain technologies that encourage racial bias, such as Rekognition, need to be controlled and improved upon so that individuals are not misidentified based on their skin color. In the long run, selling imperfect facial recognition tools will only harm large corporations and slow down their productivity. Federal laws should be implemented so that citizens' biometric data can stay secure under government protection to address security and privacy concerns. Overall, AI technology and facial recognition have really changed individuals' view of the world, but more time is needed to explore its strengths and weaknesses before Rekognition is fully released to the public.

Method & Justification

Facial recognition has a wide range of impacts on society. In order to gain more insight on individuals' thoughts, I conducted a survey consisting of 12 questions, and I sent it out to people who work with AI, are in the tech industry, and who use it on a daily basis. To obtain the most detailed information, I asked a combination of 8 multiple choice and 4 short answer questions to 52 people.

In the beginning of the form, I asked how much people knew about AI so that I could get some context as they responded to other questions in the survey. Furthermore, I asked how beneficial AI was in order to comprehend other people's perceived importance of the technology. Because certain AI assistants such as Chat GPT and Quill Bot do not always complete tasks accurately, I found it valuable to assess their relevance for other individuals. Additionally, I asked two questions that discussed where people used AI and what digital assistants they used. From this information, I obtained specific knowledge about how the benefits of AI correlate with the type of technology and place of usage.

After I asked these general questions about artificial intelligence, I asked questions that were specifically related to facial recognition. To start the next section of the form, I asked if facial recognition should be regulated by the government to protect privacy rights. Because I do focus on privacy rights in the literary review, I thought it would be interesting to present a solution, involving the government, and see if others agreed with it or not. In addition, I believed that this would reveal the value of privacy in today's society. Next, I asked if facial recognition technology should be used for international travel. This was important for me to ask because I discussed how Miami airports greatly benefited from facial recognition technology in the literary review. In fact, the article specifically stated that facial recognition and other biometric technologies "cut passenger screening wait times by up to 80%" (Janofsky, 2019). Furthermore, I wanted to see if other individuals supported the use of facial recognition in commercial businesses such as airports.

After this, I asked a total of four short answer questions to get more specific responses. It would be beneficial to ask in what ways AI is useful and what measures can be taken to guarantee that individuals' right to privacy is protected. The first short answer question I asked addressed how individuals viewed the benefits of AI. The next asked individuals what, if any, measures should be taken to guarantee an individual's right to privacy. These served as follow up questions to the previous questions that asked about the benefits of AI and the involvement of the government in protecting privacy rights. I asked if facial recognition should be used to support the country's justice system as a multiple choice question, and I asked people to explain their answer in a free response. In addition, this topic was explored in the literary review when I discussed Amazon's "Rekognition" technology and how it was being used by police departments. Therefore, this question also serves as a bridge that connects the survey to the other parts of my study. Finally, for the last short answer question, I asked how important facial recognition is for the advancement of artificial intelligence. This was a very unique question because I aimed to create a connection between facial recognition and AI; I wanted every individual to explore this connection in their responses. Moreover, I thought it would be interesting to have people look at facial recognition and artificial intelligence through a broader perspective, instead of focusing on the little details that impact the controversy.

Results

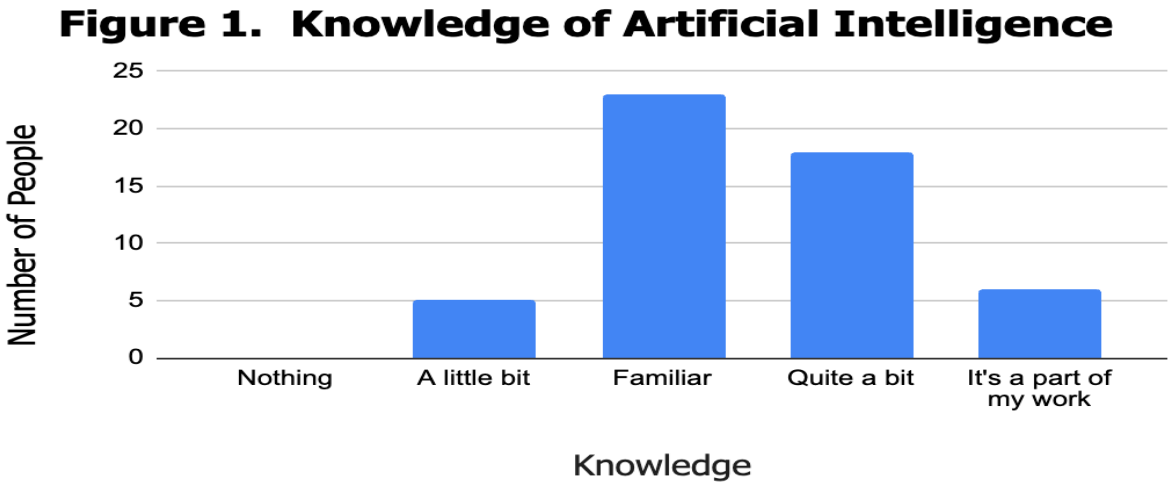

Figure 1. Respondents select the response matching their self-evaluation of their knowledge of artificial intelligence from the choices of nothing, a little bit, familiar, quite a bit, or it's a part of my work. N= 52.

Everyone knows and is aware about the usage of artificial intelligence in our society. However, out of 52 people, only 6 actually work with AI. It explains why most people have minimal knowledge about the subject. In order to develop an understanding of something, it is important to work with it. Once an individual begins using certain technologies at a place of work, they are more likely to become more invested in its function and implementation, which prompts them to do additional research and understand the concept at a deeper level.

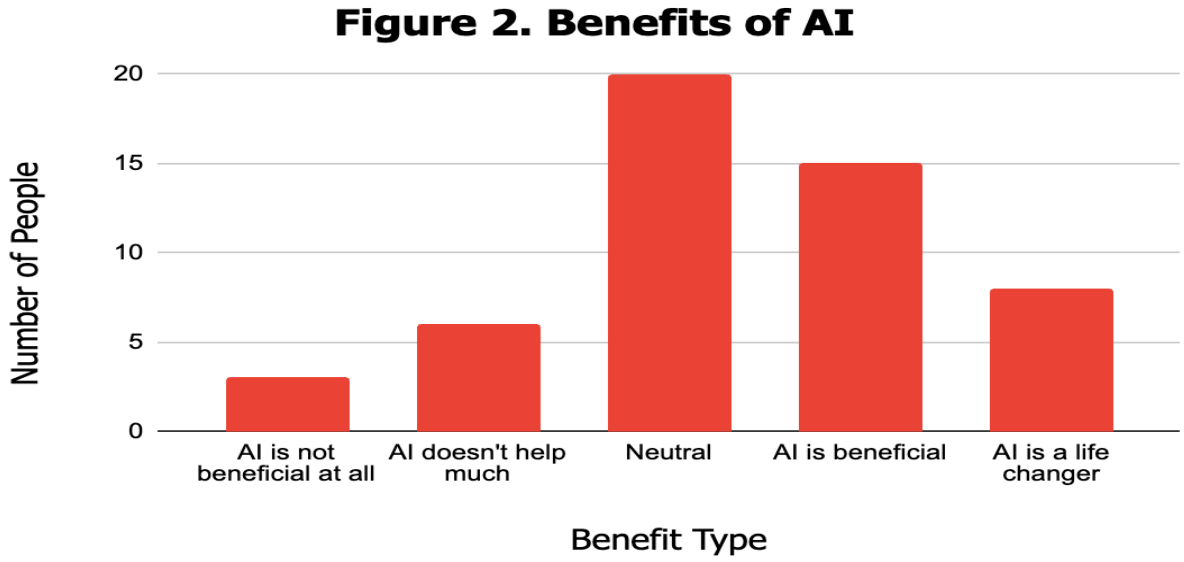

Figure 2. Many people have a positive view of AI, with 23 of respondents agreeing that there are benefits of using AI, 20 viewing it neutrally, and 9 viewing AI usage in a negative light.

From this data, many people preferred to remain neutral when trying to determine if AI was beneficial. However, more people agreed that AI was beneficial. Less than 10 people said AI was not beneficial at all. Therefore, most people are relatively satisfied with the benefits of AI.

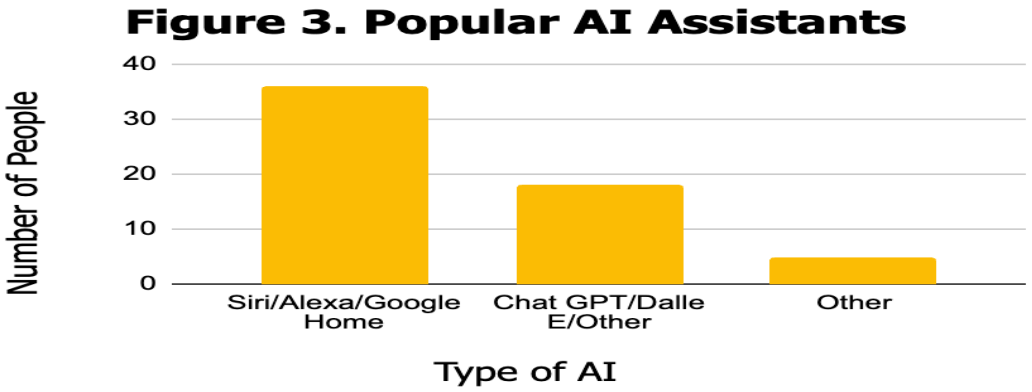

Figure 3. Respondents select the response matching their self-evaluation of which AI assistant they use the most from the choices: Siri/Alexa/Google Home, Chat GPT/Dalle E, other. N= 52.

In Figure 3, it is clear that most people use Siri/Alexa/Google Home. This makes sense since AI tools such as Chat GPT and Dalle E are relatively new in the market. However, while people use these AI assistants, built by tech companies such as Google and Amazon, it seems as though people use the tools and are not invested in understanding how these tech companies are managing the process. Therefore, these individuals continue to use AI, but are not aware of the extent to which security and privacy issues can affect everyday life.

Figure 4. Where AI is Used the Most

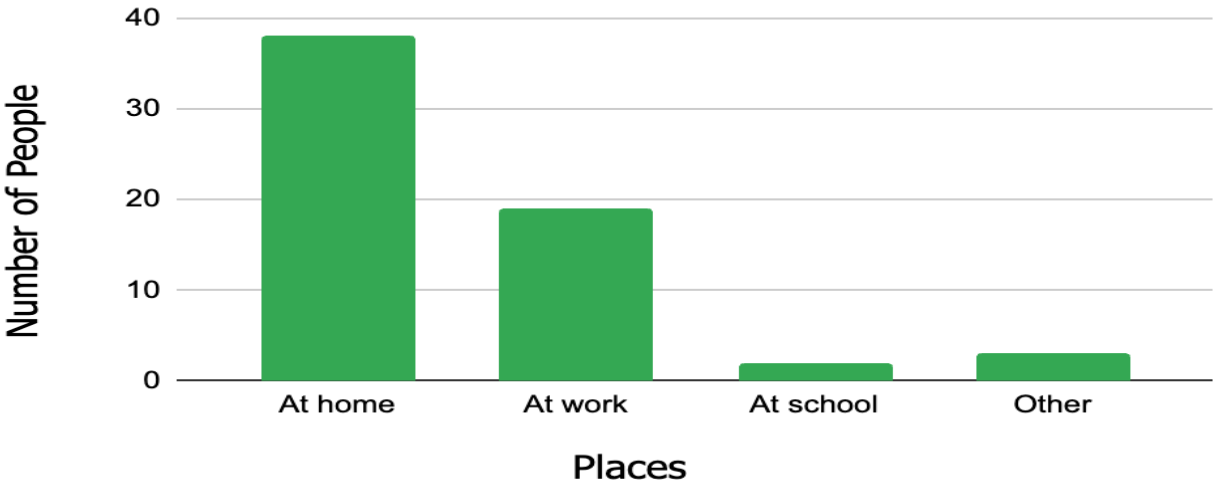

Figure 4. Respondents select the response matching their self-evaluation of where they use AI the most from the choices: at home, at work, at school, other. N= 52.

In Figure 4, 38 of the 52 people surveyed use artificial intelligence at home. The data illustrates that AI is most beneficial for completing tasks at home which may not be directly influenced by issues such as a racial bias. While I have argued that people may not spend the time to figure out more about AI and the tech companies that make and sell it, people actually do not have a reason to explore issues such as racial bias since it's not affecting them via the technology they are using. Since some AI technologies are mostly free from bias while others are not, it becomes difficult to assess the extent of these issues and biases.

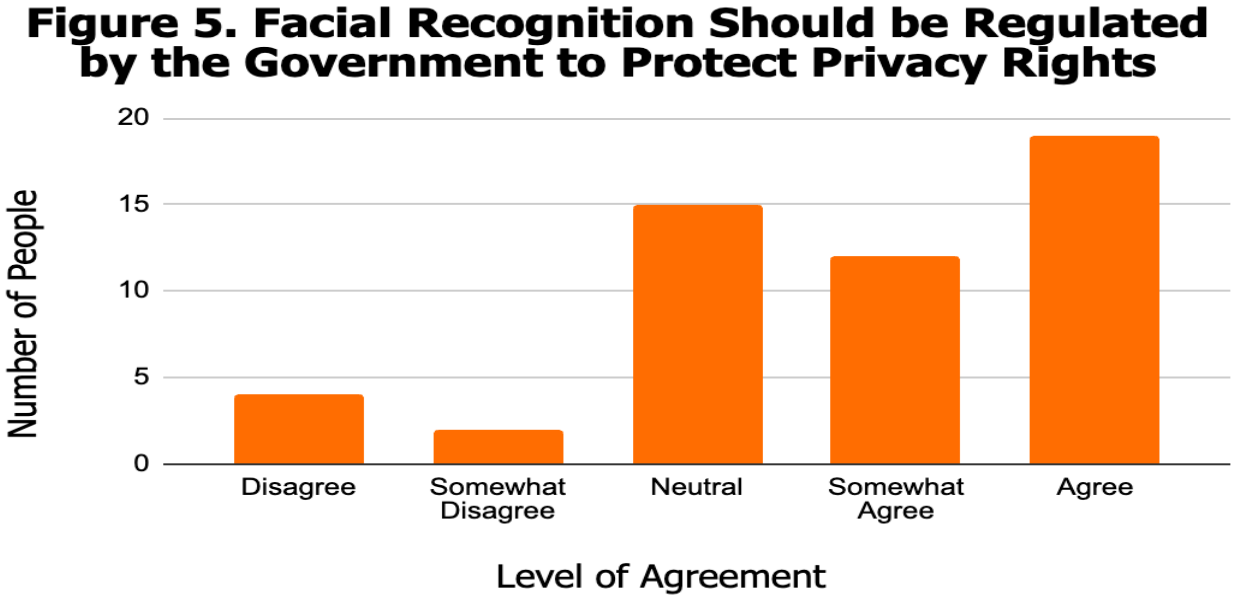

Figure 5. Respondents select the response matching their support for the statement above (Facial Recognition Should Be Regulated by the Government to Protect Privacy Rights) from the choices of disagree, somewhat disagree, neutral, somewhat agree, or agree. N= 52.

In Figure 5, most people agree that facial recognition should be regulated by the government to protect privacy rights. However, 15 people remained neutral and 6 people disagreed with this statement. It's surprising why people would be against government regulation since it's aimed to protect and help individuals. It is possible that the 6 who responded to the survey either feel there is no reason for government regulation or that it will become out of control and limit the growth of AI technology. However, it is important to rely on the government for matters that affect the security of the nation and people as a whole, so government regulation is something that should be implemented.

Figure 6. Facial Recognition Should be Deployed in Public Spaces to Aid Police Departments in Their Search for Criminals

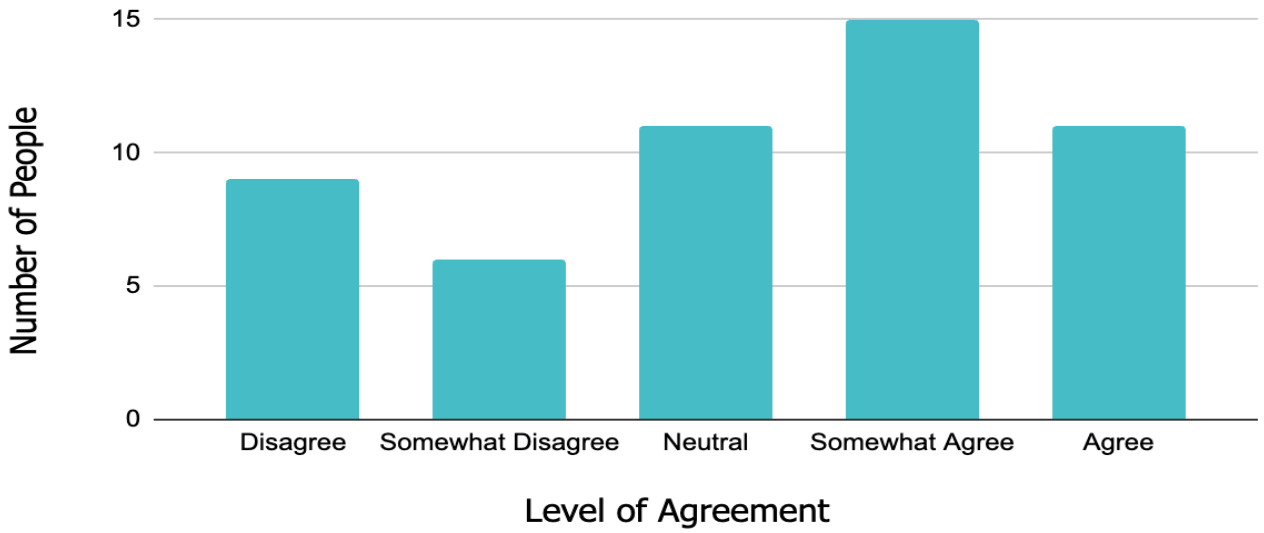

Figure 6. Respondents select the response matching their support for the statement above (Facial Recognition Should Be Deployed in Public Spaces to Aid Police Departments in Their Search for Criminals) from the choices of disagree, somewhat disagree, neutral, somewhat agree, or agree. N= 52.

In Figure 6, the data is very spread out which establishes the idea that there is a lot of controversy surrounding this statement. Because this statement isn't as simple or direct as the others, individuals are more likely to have varying opinions. However, in order to have an accurate understanding of what the statement is trying to uncover, a certain level of knowledge is required. Therefore, those who do not know much about AI will not be able to answer this question accurately. In this case, 31 of the 52 people agreed with the statement which shows that most people do not actually know about the usage of facial recognition in the police department. Because if they did, they would've realized that criminals could be misidentified due to racial biases within the technology. Therefore, awareness about the issue is needed to avoid faulty generalizations.

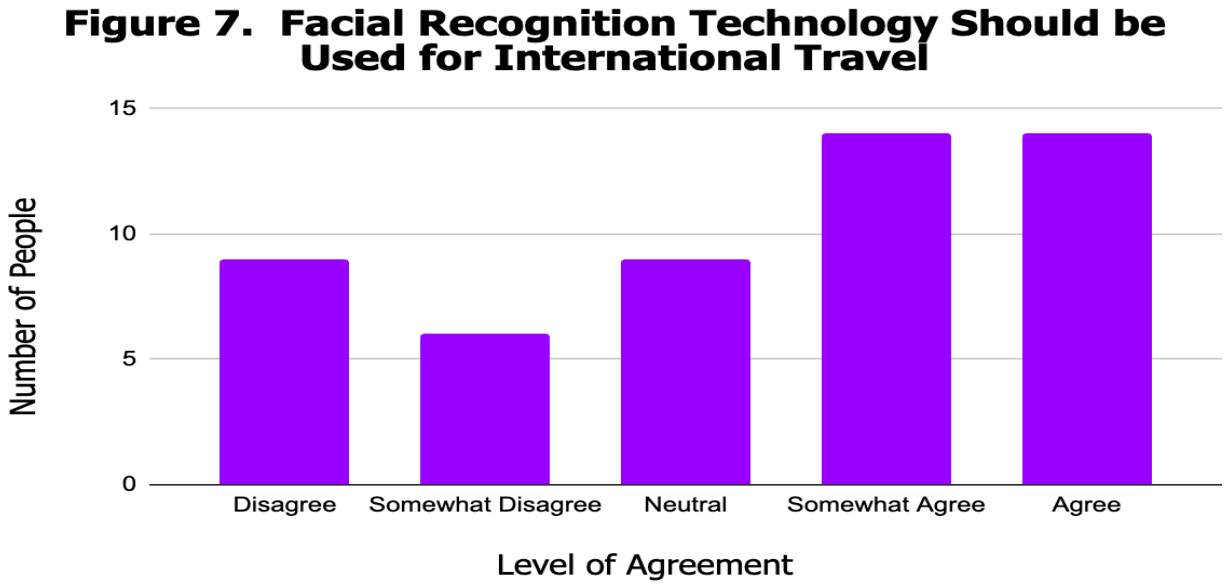

Figure 7. Respondents select the response matching their support for the statement above (Facial Recognition Technology Should Be Used for International Travel) from the choices of disagree, somewhat disagree, neutral, somewhat agree, or agree. N= 52.

In Figure 7, those who filled out the survey support the use of facial recognition for international travel. According to the bar graph, only 15 of the 52 people surveyed disagreed with the statement. Because international travel can be tiresome, quick processes make the journey smooth for travelers. In addition, bias and privacy related issues have not affected facial recognition technology at airports; therefore, its usage has proven to be beneficial and appreciated by most. Moreover, I can assume that most people would support other businesses that utilize facial recognition.

After receiving data from these questions, it was also valuable to analyze the data I gathered from the free response questions. To get more detailed information about the benefits of AI, I specifically asked what these benefits were. I received a wide range of responses which provided me with a clear picture. All the responses, though different from each other, revolved around two major benefits: “improved productivity” and “improved functionality” (anonymous) as stated in the form. This was helpful to discover because it emphasized the main purpose of AI technology.

Moreover, the next question asked what measures could be taken to protect an individual’s privacy. Similar to the previous question, I received many different responses, but I noticed that a few of the responses were a little unusual. Most people said that government regulation, encryption, awareness, and legislation were the best options. However, one person said that “privacy was a myth” and that everything is “being recorded, listened, and tracked” (anonymous). From this response, I figured that this person believes that nothing can be done to fix this issue because it is already out of control. Another person said that “individual privacy

will not exist" (anonymous). These bold statements eliminate any possibility of discovering a solution to privacy related issues which indicates that businesses and others who use facial recognition will have to tolerate ethical concerns. However, most people did provide a solution which affirms the idea that privacy is a major issue, but it can be resolved.

Figure 8. Facial Recognition Should Be Used to Support the Country's Justice System.

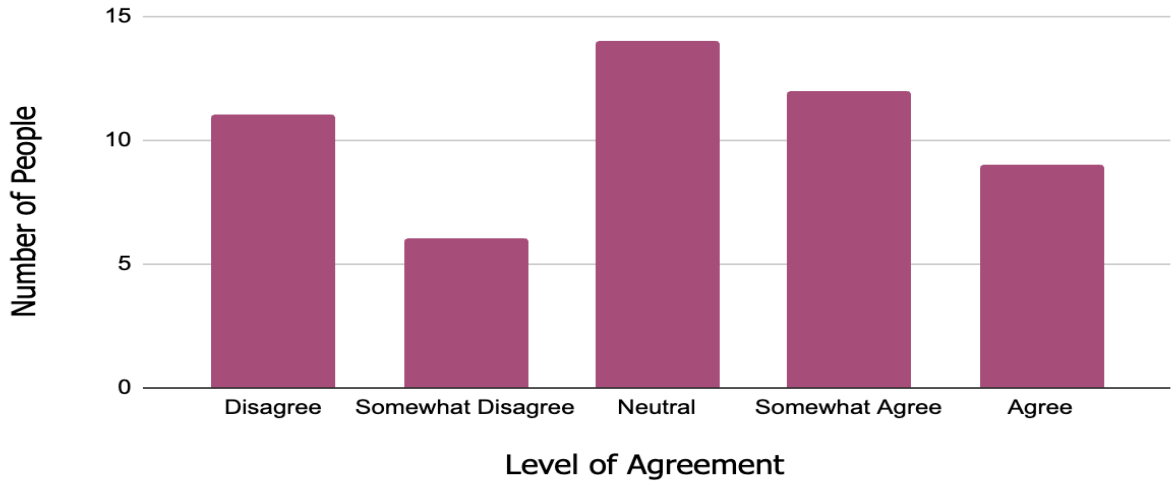

Figure 8. Respondents select the response matching their support for the statement above (Facial Recognition Should Be Used to Support the Country's Justice System) from the choices of disagree, somewhat disagree, neutral, somewhat agree, or agree. N= 52.

In Figure 8, it is evident that the data is quite spread out just like in Figure 6. Because both statements are related to each other, it would make sense to have similar results. This statement, however, mentions the country's justice system instead of just focusing on the police department. It would be interesting to see how people would respond when looking at the justice system holistically instead of only focusing on the police department. To gain a little more information, I asked individuals to explain their selection which prompted them to think about the statement more. However, only 17 of 52 people disagreed with the statement. In addition to this, out of all the explanations I received, only one individual mentioned that facial recognition is "unreliable for people of darker skin" (anonymous). Therefore, the responses to the multiple choice and free response questions validates the idea that a majority of people are unaware about racial biases within facial recognition technology.

Finally, the last question that I would like to explore is a short answer question. This question asked how important facial recognition is for the advancement of AI. After I reviewed all the responses, I realized that many people said that facial recognition was important for the advancement of AI and others said it wasn't. It is difficult to determine what most people said since those surveyed did not provide clear answers. While answering this question, it was evident that the individuals who did the survey weren't actually sure how to answer. In fact, many individuals stated that they hadn't "thought about it" (anonymous). Despite the prevalence

of facial recognition and AI technology in our society, most people haven't considered how every technical advancement can impact AI's trajectory as a whole.

From these results, I realized that many individuals have misconceptions about facial recognition and artificial intelligence in general. Even those who work in the tech industry do not fully understand the proper and improper uses of facial recognition. After analyzing the responses, I came to the conclusion that individuals are so focused on the benefits of AI, that all flaws within the technology are not even considered. In addition, the wide range of views and perspectives indicate that people have not reached a consensus regarding the safety of AI. Some people say that facial recognition should be utilized in the justice system and others say that it should not. As a result, there is no clear answer that expresses how facial recognition and artificial intelligence should be handled.

Conclusion

When looking at artificial intelligence, it's important to consider a wide perspective and be open to exploring all sectors in order to get a more accurate understanding of AI. While AI has been around for some time, advancements in facial recognition technology have occurred in recent years. Therefore, it would be necessary to continue working with AI and see if any improvements in facial recognition are beneficial for businesses. While conducting future research, intricate analysis methods and deep training techniques must be discovered so that any issues regarding biases and privacy may be resolved within the field of AI.

While this research provides a great deal of information, the study is limited in scope. The responses for the survey were only collected over a duration of a few weeks, and the sample size was smaller than anticipated. 100 participants were contacted, with only 52 filling it out in total, for a total response rate of 52%. Despite these limitations, I was able to glean insight into various perspectives of AI generally and its use in facial recognition technology specifically.

Facial recognition must be researched on a larger scale, but discovering the solution to the various ethical concerns associated with its use will only be found through researching AI holistically. However, advanced research methods and training techniques may not be enough to completely eliminate the issue of racial bias. In fact, the issue may never be eliminated since facial recognition technology is trained via AI technology, which is influenced by the biases of individuals. Therefore, the right for tech companies to sell facial recognition to law enforcement and medical organizations should be temporarily halted. However, small businesses such as restaurants and shops should continue to utilize facial recognition since issues regarding racial bias have not shown to be a cause of concern. When the police use AI technology, they use it for their investigations to spot criminals which has resulted in misidentification and accidental arrest. On the other hand, airports and businesses use facial recognition for simple identification. The consequences of the prior example have more troubling impacts.

In addition, people who have engaged with AI technology or are a part of the tech industry have expressed their opinions regarding AI and facial recognition. From the survey, it was clear that individuals are still not certain of the causes and effects of implementing facial recognition in all scenarios. Because of this uncertainty, it is essential to continue to study AI and explore its capabilities in order to be sure of its everlasting impact on companies and the rest of the world.

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Appendix

Google Form/Survey Questions

Questions	Answer Options
1. On a scale from 1 to 5, how much do you know about artificial intelligence?	- 1: Nothing - 2: A little bit - 3: Familiar - 4: Quite a bit - 5: It's apart of my work
2. On a scale from 1 to 5, how beneficial do you think artificial intelligence (AI) is for you?	- 1: AI is not beneficial at all - 2: AI doesn't help much - 3: Neutral - 4: AI is beneficial - 5: AI is a life changer
3. From the options below, select the ones you use the most.	- Siri/Alexa/Google Home - Chat GPT/Dalle E/Other - Other:
4. Where do you use AI the most (select as many)?	- At home - At work - At school - Other:
5. On a scale from 1 to 5, how much do you agree or disagree with the following statement: Facial recognition should be regulated by the government to protect privacy rights.	- 1: Disagree - 2: Somewhat Disagree - 3: Neutral - 4: Somewhat Agree - 5: Agree
6. On a scale from 1 to 5, how much do you agree or disagree with the following statement: Facial recognition should be deployed in public spaces to aid police departments in their search for criminals.	- 1: Disagree - 2: Somewhat Disagree - 3: Neutral - 4: Somewhat Agree - 5: Agree
7. On a scale from 1 to 5, how much do you agree or disagree with the following statement: Facial recognition technology should be used for international travel.	- 1: Disagree - 2: Somewhat Disagree - 3: Neutral - 4: Somewhat Agree - 5: Agree
8. What are the benefits of AI in your daily life?	Free Response

9. What measures can be taken to ensure that an individual's right to privacy is protected (relate this to AI)?	Free Response
10. On a scale of 1 to 5, how much do you agree or disagree with the following statement: Facial recognition should be used to support the country's justice system.	- 1: Disagree - 2: Somewhat Disagree - 3: Neutral - 4: Somewhat Agree - 5: Agree
11. For the previous question, explain why you agree or disagree.	Free Response
12. How important is facial recognition for the advancement of artificial intelligence (AI) in society? Explain in detail.	Free Response