The Implications of Artificial Intelligence in the Context in the U.S and The Ways It Can Foster International Relations And Competitions.

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I/ Abstract

Over the course of history, ever since the emergence of the age of industrialization, the demand for increasingly better efficiency combining with the invention of modern machinery has underpinned the application of automated technology and sparked a transition into a mechanical source of labor. As such, the concept of automation and artificial intelligence has been continuously explored and permeated into almost every aspect of human life, whether it be from production in factories to establishment of standards of living and workmanship. It is obvious that the world, especially the U.S, has advanced considerably technology-wise at an astonishing rate as such. Nonetheless, despite the fact that automated technology has contributed their positive aspects towards the goals of their developers such as increased mass production and a technical occupational transformation, the socioeconomic detriments these concepts can bring are not negligible in the least. In researching and understanding this topic, we can understand the ever growing concerns over the application of robotics and machinery within industries as well as the many ways this can benefit humankind on a global level. For those who are interested in automatons and machines, this research can be a source of inquiries into the ethics and impacts of this field.

Specifically, the subject of this research is the U.S. itself and, upon closer inspection, I will elaborate on how automation and artificial intelligence can beneficially as well as adversely affect the American people as a society. I would examine this topic over the lens of education, medicine, industrial and social environments as well as the economy as a whole to produce a picture of what has transpired in the U.S. during the last decade and the reasons for those transformations. I believe that this topic would serve well as an informative research piece for anyone looking to know more about the pros and cons of this ever-growing field of study and its already available footprints on this world.

II/ Description of Methodology

1. What are the positive and negative impacts of automation has in the U.S?
2. What are the related fields impacted by its application? How are entry-level, mid-level, high-level jobs affected?
3. How are the different factors interrelated with one another? Ex: education and economy ...
4. Does artificial intelligence possess the benefits that necessarily outweigh the negative consequences if left unhindered?

- These questions are just the beginning of my research. Upon further inspection, these question may involve more complications in answering them, or change dramatically depending on what I find. I intend to conduct more research via scholarly articles as well as news articles. The scholarly journals

should deliver the necessary conclusive, concrete data and information on the topic while the news articles should elaborate on the present issue and give examples to my research. I think this paper may shed light on the positive and negative of automation and artificial intelligence as a subject and provide a picture of the reality of it in the U.S.

Research Method:

- I plan to explore this topic by using qualitative and explanatory research methods. Since it is based on discovering the trends and underlying causes and effects, finding related sources to it can be done given how controversial the questions to this topic are. In addition, around the world, the impacts of this can already be seen and estimated for years to come.
- The sources that I will consult will most likely involve a number of news articles as well since artificial intelligence is a fairly new scientific field.

Key Concepts:

- **"Artificial intelligence (AI)** is a branch of computer science devoted to creating computer systems that perform tasks characteristic of human intelligence, such as learning and decision-making. AI overlaps with other areas of study, including robotics, natural language processing, and computer vision." ("What is Artificial Intelligence?", 2018)

III/ Description of Findings & Data Analysis

Application:

- Artificial Intelligence (AI) has been currently applied in multiple fields. More importantly, it comes in 4 distinct waves, each marking an evolution in the use of AI, as remarked by Kai-Fu Lee, author of "AI Superpowers: China, Silicon Valley, and the New World Order" ("Artificial Intelligence Race", 2018).
    - The first one is Internet AI, which is used by Internet Companies to study user behavioral patterns in interacting with ads and stories on websites like Instagram or Facebook. The resulting information is then analyzed in order to maximize ad revenue as well as capture users' attention in using their services.
    - Onto the second wave, Business AI, which is increasingly present in banks, hospitals, insurance agency, it can have more applications other than just maximizing profits like detecting automating loan default and approval, resource allocation, …
    - The third evolution of AI came in the form of additional audio and visual attachments to AI. This has already been exhibited in the form of face recognition technology at airports, patient monitoring within hospitals, voice commands in Apple's Siri, Amazon's Alexa, Microsoft's Cortana, or Google Assistant, or even smart homes with voice and gesture activation.
    - In the fourth wave, which is the one that holds the most potential and requires the most development time currently, AI would have gained autonomy and the ability to traverse and manipulate objects no different than humans do.
- Computer-assisted Language Learning (CALL) or Computer-Aided Language Instruction is a study of computer application in language learning and teaching. One of its main approaches is

the use of AI as a foundation upon which learners' speech and penmanship are analyzed and studied to suggest the best progress and individual growth plans.

- Within the field of healthcare, AI can provide more accurate diagnoses than doctors given enough data of patients and time. Over a study on how AI could help doctors in identify illnesses based on given data of patients and their symptoms, Watson, IBM's AI computer system, successfully diagnosed the rare secondary leukaemia caused by myelodysplastic syndromes in Japan (Jiang, 241).
- Deep learning is a methodology of teaching a machine to think using a huge volume of data and repetitions. Yet, the majority of AI innovation is restricted within a single domain ("Artificial Intelligence Race", 2018). For example, OpenAI Five, which is a collection of neural networks trained by being fed hundreds and thousands of Dota 2 matches and billions of hours of gameplay to recognize patterns and strategies, has managed to compete against the best players of the game and win over them ("OpenAI"). Nonetheless, despite the intensive efforts in teaching and developing it to achieve such a feat, it is only applicable within one aspect in which it was built, playing the game called Dota 2. Similarly, other applications, such as analyzing data models, or user preferences to display user-centered ads, or even face recognition, exhibit only the one-dimensional nature of AI at the current time.
- AI application in creating autonomous garners much controversy and brings philosophical questions pertaining to ethics and morality into the debate. From an optimistic point of view, if implemented correctly, self-driving cars may be the next step in optimizing human livelihood by preventing not only accidents, but also improving logistics and reducing human errors ("Artificial Intelligence Race").

Within an international context:

- A new wave of technological advancement is coming with the field of AI at the center of it. Many competitors, including the U.S, Europe, and China, are competing with one another to become the next frontrunner within the subject. It is more or less a tool for nations to compete in a battle for supremacy just as cyber power has given developing countries the necessary resources to stand on the same grounds as developed ones (Wagner). Moreover, since the application of AI is still in its infancy when compared to its supposed full potential, its research and development can exhibit a winner-take-all dynamics, meaning the one ahead would be the one to reap greater benefits. All of this seems to suggest that with the right development plan and the necessary tools, AI advancements can tip the scale of power between state actors on the global stage.
- China, in recent years, has risen up in the field of robotics and AI, formulated their national AI strategic plan, namely "New Generation Artificial Intelligence Development Plan", and set their goal on becoming the next world leader in AI research. This poses major threats to the U.S in terms of both economy and technological advancements. China developed from being "copycats" of the U.S, since it had approximately 0.2% national internet usage in 1996 ("Artificial Intelligence Race"), to becoming inventors of their own technological and entrepreneurial advancements.

- One of the most significant components in training AI to be better is to have a ridiculous amount of data available ("Artificial Intelligence Race"). And, China, among a few others, possesses one of the largest user bases whose tendency to operate on mobile devices and computer seems to generate large quantities of user data for AI to study. This fact, coupled with the sheer physical requirements needed to train an AI, suggests that only big actors can properly implement AI to its greater potential. As such, there are going to be some international policies in place in order to regulate the extent to which AI research and development can go in order to utilize data in this data-driven world. In addition, due the the immense changes AI can bring to on a global scale in terms of national power and economic dominance, it provides a convenient platform upon which to discuss new regulations surrounding it (Scott, 11).

IV/ Conclusions/Significance/Implications for Further Study

With regards to history, AI was a term coined in the 1950s, yet only managed to garner support, interest, popularity, and widespread application within recent decades. Nonetheless, with countries surely and increasingly realizing its potential in not just detecting human behavioral patterns in order to maximize revenue, but also practical fields like logistics, data analysis, or even education and medicine, the matter is a possibility, but rather an eventuality. The problem then is shifted towards who would be the next main actor to stay ahead and lead the world on the endeavors to further develop AI to its full usage. With state and private actors competing with one another to gain a slice of the pie, this is where AI, as a field and a subject of discussion, presents itself as a controversy and a catalyst for international relations and competition.

V/ Evaluation / Reflection (In narrative format, using subheadings)

Initially, my topic remained far too extensive for the scope of the research paper as a whole so I decided to narrow it down to artificial intelligence. In terms of my new topic of discussion, there are many great articles and papers on the applications of AI and how it influences international relations between various state actors and private actors. Certainly, the research went well for the most part. There are many articles detailing in what field AI is currently being implemented and in what way. Nonetheless, since this is still in the development periods of this particular new field, there are not many papers on its rate of success, results or extent of implementation. Personally, since this was a relatively foreign subject before I made it into my research topic, this was a refreshing experience researching about a matter of interest that is closely related to my field of study. Moreover, I was able to discover the various transformations that AI has undergone and learn more about the prospects that the future holds for it. I am also thankful for Tatianna from Adelphi library for changing my point of view on my topic, showing me the way to do research within the databases and, ultimately, leading me to adjust it to suit my liking. And lastly, overall, the findings in this report is only a small portion of

what I have found so far and analyzed. The initial draft of my research paper should provide even more detailed information on the topic discussed.

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