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Impacts of Artificial Intelligence and Robotics on Gender Studies at the Workplace from a Developing Countries Perspectives

Dibya Banerjee
The University of Burdwan, Bardhaman,
West Bengal, India
dibyananda89@gmail.com

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ABSTRACT
This article illustrates the relationship among technology inclusion, women, and likely perspectives in the developing countries. This study demonstrates how Robotics and Artificial Intelligence (AI) affects the opportunities for women's in developing world. The condition of women in developing world such as in India or south Asian area are considered as working domestically and are under-represented in good or high-level positions. Women are disproportionately facing prejudice and underemployed in the workplace. This paper describes the estimation of the implication of AI can exacerbate the bad status of women in the develop countries. This study attempts the comparison of women status in the developed and developing countries. This article provides an outstanding study of the enhancement of gender inequality and feminism in the developing world with the fast technical advancement in our society and at workplace.

Key words: Artificial Intelligence (AI), Deep Learning (DL), Gender Inequality, Feminism, Machine Learning (ML), Robotic System.

1. INTRODUCTION

Condition of women status in south Asian countries, such as Afghanistan, Bangladesh, India, and Pakistan face remarkably problems and hardships, ranging from gender inequality to human trafficking. By comparing with developed world, developing countries women face a biased work environment. Most of the south Asian countries have a society of male dominated and patriarchal, and their society has a deeper indication for offspring of male [1]. These countries, especially India, have felled situations where technical advancement has been used to generate biases in gender. As for example, some technology has been a higher misused recent decade such as ultrasound or sonography, is one. The sonography is publicly misappropriated, which was used to find the health of unborn select the gender of fetus, and in the case of female fetus usually they perform abortion [2]. Some Indian states, especially the northern state such as Haryana, have seen a remarkable decline in the ratio of sex with time due to the erroneous utilization of sonography technology. Thus, sex ratio in the children is declined so fast. But nowadays Indian government implementing to many tough laws to overcome this issue and the law for determining sex for fetus through sonography is a criminal conduct and the person or medical practitioner who will do this criminal conduct will be in jail for many years. Figure 1 shows the graphical representation of child sex ratio of India between 1961 to 2011. This data is according to the census 2011.

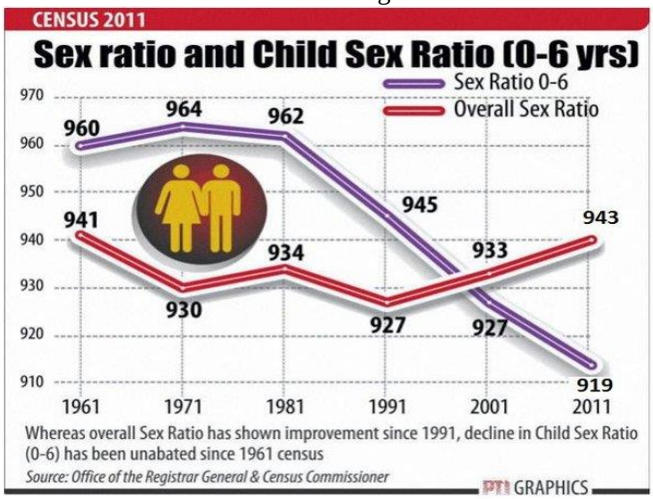

Figure 1: Child sex ratio of India between 1961 to 2011 [3]

In the era of AI, gender inequality is a major problem due to how a system of AI is developed, biases in this technology will be more problematic.

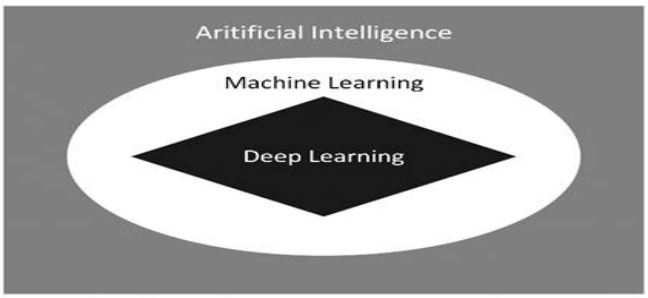

Figure 2: Relation between AI, ML, and DL [4]

Nowadays, with significant advancement in newer technology of DL will play a vital role to do so far for encountering gender inequality at the workplace. DL is the subset of ML and ML is the subset of AI. Figure 2 shows the relationship between AI, ML, and DL. Developers of AI algorithms might be unaware of their impacts and major biases and unwarily pass their prejudices of gender socially onto robots. It is proved because the recent advancement in machine learning (ML) and deep learning (DL) reinforces past stereotypes of female, such as mildness, protection, and humility need. For instance, surveillance robots are generally male, but sex and service robots are normally female. Another case is risk analysis of AI driven system in the justice system. The mobile robotics is playing a vital role in the surveillance at the workplace for the security and surveillance on the workers that means advancement in the autonomous robotic system can enhanced the safe environment at work [5]. Thus, with the implementation of mobile robotics system at the workplace is suitable to make the workplace better for women employee and it can make a system to encounter gender discrimination at the workplace. Hence, it can play a role as watchdog for safe and better workplace.

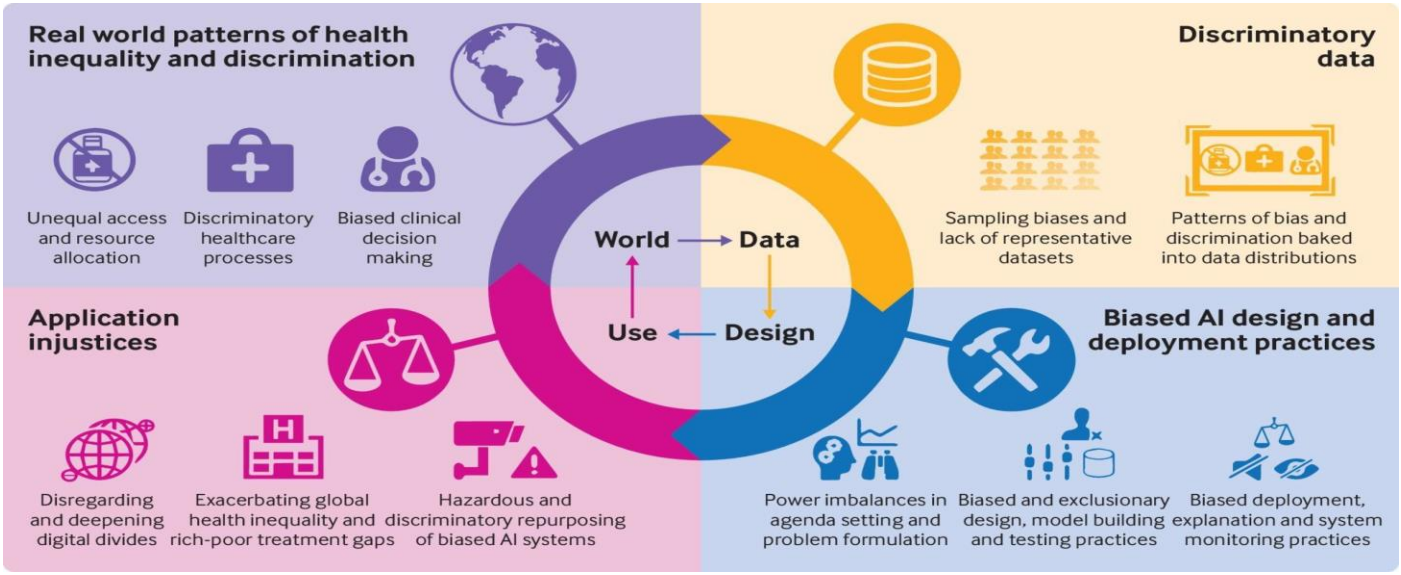

Figure 3: Complete perspectives of biases and discrimination [6]

Figure 3 shows the complete scenario of biases and discrimination in different sectors. Female gendering enhances bot's retained humanity and the acceptance of AI. Customers think that women AI is more generic and more efficient and thus more comfortable to fulfill customers special demands. That's why the feminism of robots enhances their marketability.

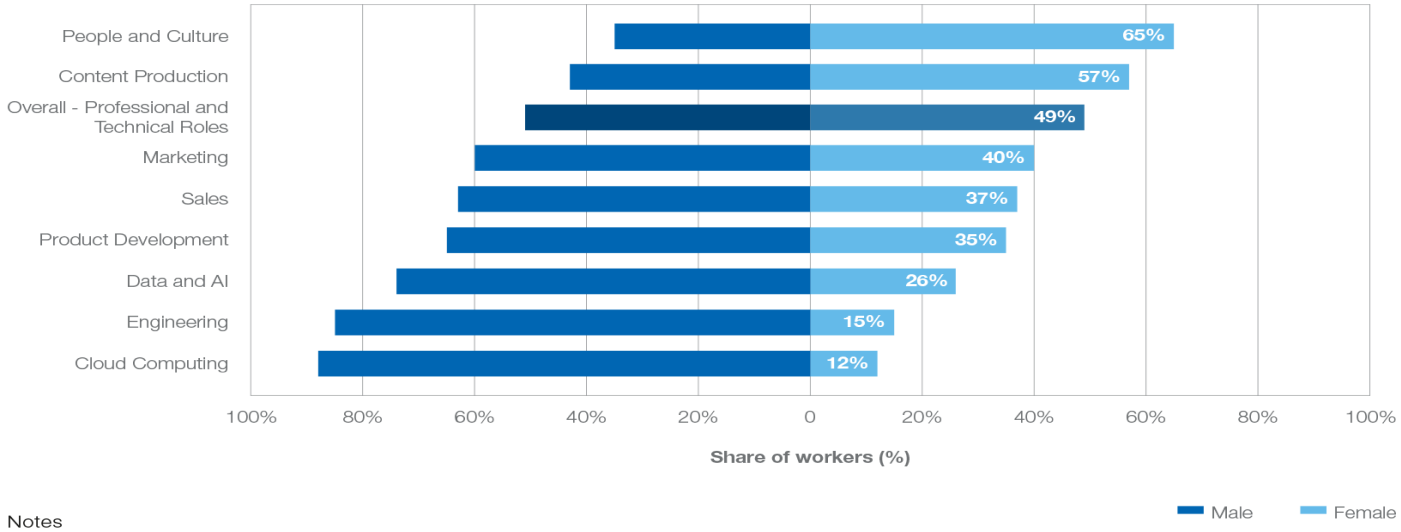

Figure 4: Complete perspectives of gender gap within different sector [7]

Figure 4 shows the gender gap in different sector. AI is trying to humanize robot by integrating feminine properties and needed for acceptability in the robotic society of male dominated. There is another problem for women worker in the machine learning area is that the percentage of machine learning scientist is very less with respect to men technologists.

2. LITERATURE SURVEY

In recent decades several researchers have been working towards making the workplace ideal for working. Kumar et al. [7] present a study of feminism or gender inequality at the workplace with a case study for Indian perspectives. This study shows the AI and robotics development at workplace is also somehow creating gender inequality at the workplace. This paper mainly focused on the study of women status in the area of southern Asia region. Manasi et al. [8] describe AI and gender equality. This study is exploring the scope of the gender impacts of AI in the area of feminist studies, science and technology studies, and computing studies. This article illustrates feminism and gender studies on the behalf of AI application in this area of study. How AI and robotic science are changing or affecting gender inequality more at the workplace is described in detail in this research paper. Adam [9] presents a wide range of criticisms of AI technology covering the possibility of generating actual AI, whereas an argument of feminism sees instead to the AI cultural setting, what type and whose knowledge is to be represented. The epistemology of feminism might be utilized to provide support and to enhance these arguments in two ways, where both ways have connection to other sociological and philosophical traditions. Wellner et al. [10] present a study of racial and gender biases in AI algorithms. With the enhancement of AI technology in almost every sector of studies, gender inequality and racial biases are also increasing rapidly. To overcome these issues, the basic understanding of feminist should be understandable. Developers and users could be aware of the occurrence of racial and gender biases. Thus, basic understanding should be first recognized before implementing AI algorithms. Lütz [11] presents the quality of European law about the protection of gender equality and algorithm equalities in the context of AI and gives a small analysis of European union legislative proposal draft, the AI Act. This paper concludes that measures of accompanying policy and legislative are required to protect an effective policy of gender equality and to overcome the discrimination of AI algorithm.

3. GENDER INEQUALITY IN DIFFERENT SECTORS

AI is a major technique which allows solution for every problem. AI is vastly being utilized to dictate the products we purchase and the films and music we enjoy; to save our income; and, contradictory, to create hiring decisions and procedure of criminal behaviors. There is special provision and regulation is required for AI that allow us to indicate biases and work against it. Figure 5 shows gender gaps in various industries at the glance of AI. This Figure indicated almost every area of work.

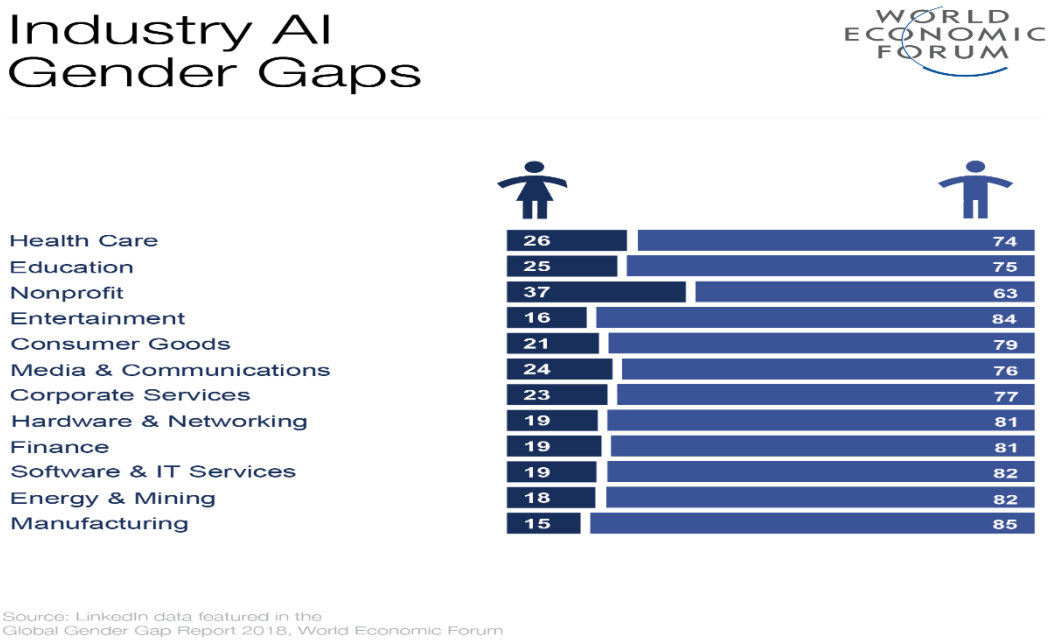

Figure 5: Gender inequality in different industries [12]

4. SOME MAJOR STEP TO OVERCOME GENDER INEQULITY IN AI AND ROBOTICS

Various enterprises and workforces are recently starting the journeys of AI and are realizing the importance of gender equality might provide in AI. Companies that hire more female in their teams of AI not only assist to enhance gender balance in the company; they might give more value to their own customers and business. Although there is also higher work to be accomplished, change is in the near future and is on the horizon, thus women future might be bright in this field. Figure 6 indicates some major steps should be taken by developing them to overcome gender inequality.

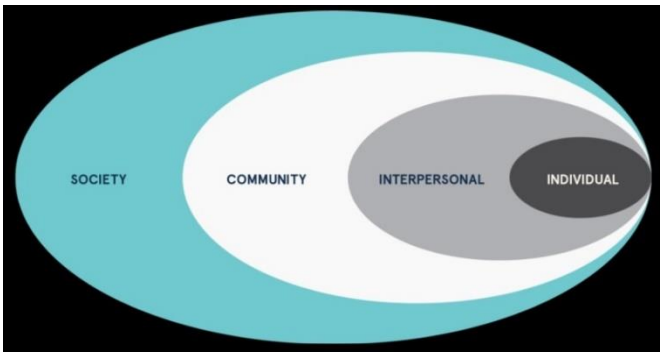

Figure 6: Different required step to develop gender equality [14]

5. CONCLUSION

The robots gendering in AI application is problematic and is not always forward to the required enhanced acceptability, as gender creates no difference for the functionality and performance of robot. The description contradicts the comprehensively held belief that female is progressing countries such as India are worried for surviving with robots integrated with AI in the near decades. This study shows that both women and men feel AI shall have a major effect on both females and males. Although humans normally agree with the fact that humans might be motivated to be comfortable to live with robots integrated with AI due to increasing complications and challenges in human relationships and changing lifestyles of human. Because of the increasing cost of maintaining a lifestyle of protein-based, humans might turn to AI robots to overcome the problems that come with it. This article will provide an initial study of gender inequality and feminism in developing countries.

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