

Johannes Kepler University Linz

Institute for Sociology

Department for Sociology with Focus on Innovation and Digitalization



KV-Number 231.449

KV Artificial Intelligence in Society

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Winter Semester 2021

Influence of AI-powered Employee Surveillance on Society

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Submission Date: 13/02/2022

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Introduction

The technological capability of artificial intelligence (hereinafter referred to as AI) and its deployment across domains has been rapidly growing for the past decade. Consequently, the influence of AI on society has been growing with its usage. One area which benefited greatly from the development of AI is surveillance. The AI's capability to analyze substantial amounts of data allowed companies to monitor its employees on a massive scale. Monitoring at a workplace can have many forms, from camera surveillance relying on facial recognition, to tracking and analyzing employees' work on a computer. Monitoring has the potential to address issues with employee productivity, detect insider threats, make sure that safety codes are kept, or help with employee investigation in case of an incident. However, such surveillance impacts the employees' privacy and can have a detrimental effect on employer-employee relations (Zickuhr, 2018). The goal of this paper is to investigate the effect of AI-powered surveillance at a workplace on society and research which solutions may address the problems it may pose.

AI-powered Employee Surveillance

For the sake of increasing efficiency of its employees or enhancing a company's security, employers may gather various kinds of information about their employees. For instance, information about productivity, reliability, employee interactions, location, and health. From this vast amount of information AI can help to bring new insights, optimize processes, and set new objectives. AI systems are well-qualified for worker surveillance, for instance, they are suitable for detecting behavioral patterns using typing patterns, visited websites, number of emails sent or their contents. Moreover, they are also well suited for situations outside of the digital environment, for instance, for ensuring compliance with safety codes or for measuring workers' efficiency by measuring number of steps taken in a warehouse, number of bathroom breaks and their length. With the arrival of the COVID-19 pandemic, many businesses let their employees work from home, which boosted the use of such surveillance systems to ensure that productivity is not decreased as a result of the new working environment with no direct supervision.

Nowadays many companies rely on AI-powered surveillance. For example, Amazon uses AI-powered cameras to monitor delivery vans' interiors to detect risky driving behavior. Although this measure came with a backlash from Amazon's employees, it helped Amazon

to decrease accidents by 50% and cases of distracted driving by 45% (Business Insider International, 2021). Furthermore, to protect employees' health and ensure their safety, Amazon plans to use AI to monitor warehouse employees' muscles to decrease work related trauma (Cater & Heikkilä, 2021).

Even though the above example demonstrates benefits such technology brings and may bring to a business and its workers, it can also create many problems. For instance, tracking workers' movements, assessing workers' performance solely based on data or managing a remote workforce using AI based analytics at the expense of the human touch raises privacy concerns, several legal issues and may damage employees' satisfaction and their relationship towards the employer.

Analysis

As described in the previous chapter, AI-powered surveillance can help a business to increase the performance of its employees. Such an AI system can measure work efficiency, track employees' work activities, or even generate recommendations for increasing productivity. One example of such a monitoring system is platform Enable, which assigns a productivity score to a company's employees and using this score tries to increase their work performance. Tong et al (2021) found that feedback provided by AI is of higher quality than the one given to employees by their managers. Moreover, Tong et al (2021) state that AI gave more useful recommendations on how to correct employee errors and as a result increased workers' job performance by 12.9%.

Even though society still finds itself in the midst of the COVID-19 pandemic, the business leaders have already started planning the future post-pandemic workplace. In their vision, AI is playing a key role in enhancing it. AI can help to better manage problems with irregular work schedules, identify employees and areas where they should be at certain times, identify VIPs, personnel, or guests to avoid face-to-face contact and provide a more discreet way of managing such tasks. This can be beneficial for both the company and its employees, however, identifying people in such a way relies on various facial recognition techniques which raise privacy concerns.

Privacy concerns are one of the key issues connected to AI-powered employee surveillance. Large scale monitoring may lead to employees lacking privacy and being under pressure as a result of being constantly monitored. Furthermore, to recognize employees with the use of

facial recognition techniques, AI must be trained properly on large enough datasets. However, obtaining large datasets of human faces with consent from all the people featured there may prove to be difficult. In 2016, 3.3 million photos of faces were scraped from Flickr without consent and published by researchers from University of Washington (RecFaces, 2021).

Good mental health is important for an individual's well-being. Being under constant surveillance can have a detrimental effect on employees' level of stress, induce a higher risk of burnout and consequently result in mental health issues. Samek Lodovic et al (2021) state that surveillance technologies reduce autonomy and privacy, increase productivity but for the cost of weaker boundaries between work and personal life.

Although it was found that AI was able to raise productivity by giving more useful recommendations than human managers, such a productivity increase only happened when the employees did not know who gave them the feedback (Tong et al, 2021). When the employees knew that the feedback was given to them by AI, their performance decreased by 5.4% (Tong et al, 2021). These results show that employees have problems with trusting the quality of feedback given by AI in comparison to one given by humans. Building employees' trust in AI can be one of the key challenges in its application.

Unbiased algorithms are another key challenge when it comes to AI. Research shows that AI algorithms can have ethnicity, gender, or race bias (Kiritchenko & Mohammad, 2018), for instance describing African Americans with negative emotions. Bias does not have to be limited only to humans, Jakson et al (2021) describes a technological bias based on a type of camera used. Such AI biases can be harmful for certain groups, especially minorities. Furthermore, such biases can be used in harmful ways, either by people not knowing about its existence, or intentionally for the sake of gaining power and authority.

As described in the above paragraphs, AI-powered monitoring can bring both benefits and risks to a workplace. However, as Winner (1980, p.122) stated: What matters is not technology itself, but the social or economic system in which it is embedded.

Suggested Solutions

The previous chapter described some of the risks and issues connected to the use of AI-powered surveillance. But is it possible to find any solutions that would help overcome these problems? The first of them is connected to improving employees' performance in

general. As mentioned before, the effect on job performance after receiving feedback from AI depends if an employee knew who wrote that feedback, AI or human (Tong et al, 2021). Tong et al (2021) suggest that AI feedback will be given to senior employees, whereas a novice will receive one from human managers. Actors involved in such a solution are employers themselves.

Another risk concerning employee monitoring is its use in a non-intended, harmful or malicious manner. Such surveillance would be against the employees' will or will not be in line with the GDPR. To avoid such a situation or accusations of this happening, the employer, as an actor, should explain to employees the role and goal of surveillance. As a result, transparency would increase, and efficiency would not decrease (Bruns et al, 2018).

Additionally, employers should consider data protection to make sure that rights and freedoms of individuals are not at stake. Only necessary information should be gathered for the purpose of increasing job performance using AI.

Finally, a key challenge is to find a solution to an algorithmic bias in AI-powered systems as a consequence of a project design or data collection process. Main actors in this solution would be AI engineers whose obligation is to take care of the quality of an algorithm. Training dataset should include a representative sample of the target population. This means, for instance, if we measure the satisfaction of clients, we should run surveys and ensure that a great variety of people answered questions - diverse age groups, both genders, people having different educational and cultural backgrounds and much more. Only this will give AI scientists a good sample dataset.

Discussion

Some of the proposed solutions are a proven approach to limiting the negative influence on employees. For instance, transparency of an employer has a positive influence on job efficiency and does not increase additional risk of burnout and mental issues for employees (Bruns et al, 2018). Moreover, privacy, data protection, and algorithmic anti-discrimination laws are nowadays frequently discussed topics and many countries have implemented laws addressing these issues. However, in many parts of the world, more work is still needed to be done.

Elimination of the algorithmic bias is still an active area of research. Headlines about biased algorithms appear in the news on a regular basis, for instance Twitter's algorithmic bias in

image cropping (Vincent, 2021). The suggested solution requires collecting a representative dataset which is expensive, challenging and time-consuming. On the top of that, the suggested solution might not guarantee the deployed AI model will not be biased.

Last but not least, the solution addressing feedback given by AI is also a subject for research. Senior employees can be resistant to the knowledge of an entity giving the feedback. However, it is worth trying, as senior employees' work experience may give them less doubts about feedback given by AI. Another solution may be not to tell workers that the employer is using AI, however, such a solution is on the expense of transparency. Overall, the method is worth trying, however, its effectiveness should be closely monitored.

The solutions presented in the previous chapter may prove to be beneficial for the case of AI-powered surveillance. Some of them are already proven methods, the effectiveness of the others may need to be tested. In the future, the implementation of these solutions should be tested and, overall, the effect of such surveillance methods should be closely monitored. With more research in this area and monitoring of this trend, new ways and methods to address these issues may be discovered.

Conclusion

Artificial intelligence has a potential to significantly impact the surveillance of employees. This paper presented many benefits which AI-powered monitoring can bring to employers, however, it also pointed out that AI's application can have a detrimental effect on a company's employees and consequently on society as a whole. Moreover, this article introduced potential solutions for mitigating the negative effects of such surveillance methods.

Ultimately, it is worth discussing whether surveillance at a workplace is needed at all. Monitoring for ensuring health and safety of the employees or to prevent accidents brings clear benefits to both an employer and its employees, however, work performance monitoring or other similar forms of surveillance can negatively influence employees, as pointed out in this paper. Employing AI in such a way brings the question whether evaluating employees solely based on productivity data is fair. If employees think they are being treated unfairly, they are less likely to embrace an organization's values and goals (Dobolyi, 2020). Such perception is a major driver of misbehavior (Dobolyi, 2020). Working environment and culture where employees feel treated unfairly does not benefit any side.

In the long run, employees should be motivated by their organization culture, goals and management, not by, in an extreme case, purely data-driven goals set by an AI whose successful completion is automatically monitored and evaluated. As pointed out by Filabi and Hurley (2019), companies that achieve the right balance between trust and control do so by requiring leaders to take responsibility for the environment they create. Ultimately, it is up to the businesses and their stakeholders to find the right balance.

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