



Assignment 2 Human and Machines-2

Knowledge Representation (Vrije Universiteit Amsterdam)

What happens if decisions and tasks are outsourced to AI systems?

Danielle Melger (2649158) and Freek Cool (2666833)

1. Introduction

It will probably not have escaped that Artificial Intelligence (AI) made its way into the human world. In the last decade, the relationship between humans and AI is so amplified that even AI systems get engaged in important decisions and tasks. Moreover, in some extraordinary exceptions, AI systems are so loved that humans even have married them (Haas, 2017). Nevertheless, the growing integration of AI in human society comes with the essential question: “what happens next?”. Contributions of intelligent systems can be worthy. For example, some virtual assistants have already performed some basic user tasks (Canbek & Mutlu, 2016). However, despite the positives that AI brings to human individuals, it also poses risks. This can for example be a concern regarding privacy (McLean & Osei-Frimpong, 2019). This report poses two questions. First of all, what happens if tasks are outsourced to AI systems? This issue considers delegating tasks to AI, which have previously been done by humans. Secondly, what happens when we outsource decisions to AI systems? This question examines the (future) concerns for decision-making AI systems.

This report discusses both questions on the bases of the views of both the popular press and the scientific community. For each question, the statements of the popular press and the scientific community regarding the possible bright prospects and concerns of these issues are presented. Furthermore, there is examined whether the perspectives of the popular press are realistic, according to the scientific community, and which solution(s) of the scientific community can contribute to solving the proposed threats and concerns. Ultimately, the general relation between the press and the scientific community for each of the questions are stated in the conclusion.

2. What happens if we outsource tasks to AI systems?

2.1 View: the popular press

The idea of outsourcing tasks to AI systems has been both positively and negatively presented in the popular press. Some news articles have shown to praise the outcome of AI systems and others are rather focussing on the risks such systems bring when it comes down to delegating tasks. One of the main concerns the popular press highlights is: if we outsource our jobs to AI systems, what work will be left for humans to do? (Walsh, 2017). In 2015 the BBC (“Will a robot “, 2015) already posted an article in which people could find out whether their job had a high risk of being replaced by automation. Moreover, more recent news articles emphasize this concern as well. For instance, the New York Times (2019) has written an article in which the author accentuates that robots are stealing men's jobs and that automation worries countless Americans. Besides, the worries about robots taking humans' jobs, there are also concerns about AI taking away human creativity. The Guardian (2022), for example, stresses the possibility of AI art taking over the internet, with the risk of not finding any human art anymore. In addition, they highlight that AI art tools are trained on the work of artists without them even knowing it. Moreover, a news article from Forbes (2022) warns that overusing AI can kill creativity. They argue that people can become dumber if they exaggerate the use of AI applications for creative professions, e.g. to create news articles or advertisements, as it limits the diversity of thought. Another, more recent

application that can do human tasks is Chatgpt. According to the Guardian (2022), Chatgpt is possibly the best AI system, that now exists, to do human-like tasks, such as generating code and writing essays. Nevertheless, the news article does emphasize the concern that tools like ChatGPT can produce lots of AI-generated content on the web that might be wrong and raises the question of whether content on the internet, after December 2022, can be trusted.

2.2 View: the scientific community

The popular press showed two main concerns when tasks are outsourced to AI systems. The first concern is whether AI systems will take over human jobs or in other words, whether there will be work left for humans to do. The second concern is whether AI will vanish human creativity. This section elaborates on whether the two concerns are realistic and presented by the scientific community and if there are already contributions from the scientific community to solve these concerns.

First of all, the widespread anxiety of the public on whether AI systems are stealing people's jobs is already acknowledged by the scientific community. For instance, in the paper written by Dahlin (2019), it was investigated if robots are stealing our jobs. Dahlin stated that this concern is unrealistic and that the results of his research even supported the contrary: the integration of the robot-human work relationship creates more value for human labour. To add, Dahlin concluded that such collaborative relationships are offering a bright prospective for all (low-, middle- and high-skilled) jobs. Moreover, another, more recent paper written by McGaughey (2022) has also investigated whether the internet, robotics and AI will automate jobs away. In line with Dahlin (2019), this study also states that robots will not take over human jobs, but with the condition that the economic democracy is protected. This holds that humans should vote for a government that adjusts the law for full employment and fair incomes.

Secondly, the idea of AI vanishing human creativity is a less discussed topic in the scientific community compared to the concern of robots taking people their jobs. Nevertheless, the paper written by Anantrasirichai & Bull (2021), reviewed how AI systems can be used in creative professions and what the future challenges, regarding ethical questions, for AI systems are in the creative sector. Overall, they conclude that technological innovations in creative applications remain human-centric and thus are designed to enhance, rather than replace human creativity.

3. What happens if we outsource decisions to AI systems?

3.1 View: the popular press

AI is already used to make a range of decisions for humans (Shank et al., 2019). In the popular press, there is a lot of negative attention on the effect of AI decision-making on individuals. Often, the popular press is afraid because of the possible negative effects that AI decision-making can have on individuals. In an article in The Guardian by Makortoff (2022), an example is given in which it is decided by an AI that an individual has a lower credit card limit, just because she is a woman. What scares the writer of this article, are the biases that occur in the decision-making AI system. These biases arise because of inequalities in the training data for the algorithm. The effect of this is, that AI systems will treat individuals unequally, and thus will discriminate. Also, Makortoff describes how AI decision-making is a black box principle. This holds that decisions made by AI systems are difficult to explain, which makes it for people difficult to know what they could have done differently to have the AI decided otherwise. Makortoff is thus especially afraid of the negative effects of biases in

the decision processes, and the lack of explainability of the black box principle. A different article in the Guardian by Buranyi (2017) also describes the same fears. This article also describes the negative effect of biases in AI decision processes. Specifically, again the fear of discriminating AI's is the main negative argument against automated decision-making.

However, the opinions in the press are not all negative. In an article published in The Harvard Gazette by Pazzanese (2020), some advantages of AI are acknowledged. Data analysis and decision-making are more time-efficient when using AI. Also, AI is able to monitor people and make decisions based on this data, which was not available to us before (Stein, 2019). Thus, when using AI in decision-making this becomes faster, and AI creates insights which were not noticeable by humans before. In more fierce situations, AI is able to make quick and objective decisions in crisis situations (Verma, 2022). In an article published in The Washington Post examples are given like disaster relief after earthquakes, or aiding military decisions when personnel are injured. Thus, there are enough positive opinions about AI in decision-making in the popular press.

The popular press has a few ideas about how AI decision-making might expand in the future. In an article by Zeitchik (2021) published in The Washington Post, a future is discussed in which people rely on AI in their most basic decision-making tasks. It gives examples in which people might use AI to plan a trip or choose which car a person can buy. The article also describes how this could help people psychologically, by taking away decision stress by trusting decisions to AI. Zeitchik (2021) thus considers a future in which AI makes even the smallest decisions for us, so that people do not have to. But, as an article in The Guardian (2019) states, decision-making by AI should become more transparent, so that people can acquire knowledge of why an AI makes certain decisions. As the article states, it is not only to know when a decision is possibly biased but also for the AI to gain trust with humans. Thus, AI is expected to make more decisions for humans in the future, also the most basic ones. However, why these decisions are made should become transparent.

3.2 View: the scientific community

The issues of outsourcing decisions to AI as pointed out by the popular press are posing a problem already in the current times. There have already been writings about examples in which AI decision-making systems were biased in ways in which they treated groups of people negatively. For example, in 2016 it became apparent that a software named COMPAS which predicted crime was negatively biased towards black people (Hübner, 2021). The concerns of the popular press are thus not about something that might happen in the future, but about something which has already occurred. Therefore it can be concluded that fears of the popular press depicted in section 3.1 are very realistic, as these are not fears about something fictional but about a phenomenon which is reality.

When reading scientific articles, it becomes apparent that the scientific community is well aware of the issues noted by the popular press. An article by Allen and Masters (2019) describes how patterns in data sets, on which decision algorithms are trained, can give rise to a variety of biases, like a discriminating bias. In another paper by Alon-Barkat and Busuioc (2022), the problem of algorithmic biases is well acknowledged. The paper also considers the racial bias for decision-making AI systems, and how these could negatively impact a specific group of people like black females. Thus, the view of the existence of the problems depicted by the popular press is well in line with the view of the scientific community. In the scientific papers noted, the issues are acknowledged as being relevant

problems, and also some specific examples of situations where these fears actually happened are given.

There are a few things done by the scientific community with the aim to solve biases in AI systems which make decisions. One possible solution to AI decision-making biases is to introduce a measure of fairness. However, a formal definition of fairness has not yet been decided upon (Ntoutsi et al., 2020). An article by Bradley (2020) mentions the same possible solution of creating a formal definition of fairness. But it also mentions that experts have not yet agreed on this formal definition. Next to the possible solution of introducing fairness, it also suggests using AI itself to detect possible biases. In the paper by Bradley, it is mentioned that some institutes are already using AI to solve biases in training data. The paper thus suggests that AI itself can be used to solve biases in AI decision-making. As noted by the examples, the scientific community thus makes a few suggestions to solve the issues portrayed by the popular press. Some are more theoretic, like the introduction of a formal definition of fairness in AI decision-making. However, the scientific community also suggests some technical solutions, like an AI which detects biases itself.

4. Conclusion

This report has discussed whether the concerns presented by the popular press about outsourcing decisions and tasks to AI systems are acknowledged by the scientific community and which solutions the scientific community proposes to solve these issues. The first topic examined in this report was the delegation of tasks to AI systems. The popular press showed two main concerns: will robots steal our jobs and will AI vanish our creativity. Both of these threats are acknowledged by the scientific community, but contrary to the popular press, they do not see these threats as realistic. Moreover, the scientific community showed that when the collaboration between humans and robots is integrated into workplaces and when economic democracy is defended, there is no chance that robots will steal our jobs and when creative applications stay human-centric also human creativity will remain. The second topic covers the discussion about what happens when outsourcing decisions to AI systems. Here, discriminating AI systems is the main concern. This fear is also addressed by the scientific community and is also acknowledged as a relevant problem. Solutions that are, therefore, proposed are the implementation of AI systems that are able to detect such biases or to define a measure of fairness. Overall, it is seen that the worries from the popular press, regarding outsourcing tasks to AI are viewed by the scientific community as unrealistic. Whereas, the worries regarding outsourcing decisions to AI are seen as a relevant and real problem.

References

Allen, R., & Masters, D. (2019). Artificial Intelligence: The right to protection from discrimination caused by algorithms, machine learning and automated decision-making. *ERA Forum*, 20(4), 585–598. <https://doi.org/10.1007/s12027-019-00582-w>

Alon-Barkat, S., & Busuioc, M. (2022). Human–AI interactions in public sector decision making: “automation bias” and “selective adherence” to algorithmic advice. *Journal of Public Administration Research and Theory*, 33(1), 153–169. <https://doi.org/10.1093/jopart/muac007>

Anantrasirichai, N., & Bull, D. (2021). Artificial intelligence in the creative industries: a review. *Artificial Intelligence Review*, 1-68.

Bradley, R. (2020). How to Solve AI Bias.

Buranyi, S. (2017, August 8). *Rise of the racist robots – how AI is learning all our worst impulses*. The Guardian. Retrieved January 19, 2023, from <https://www.theguardian.com/inequality/2017/aug/08/rise-of-the-racist-robots-how-ai-is-learning-all-our-worst-impulses>

Canbek, N. G., & Mutlu, M. E. (2016). On the track of artificial intelligence: Learning with intelligent personal assistants. *Journal of Human Sciences*, 13(1), 592-601.

Clarke, L. (2022, November 12). When AI can make art - what does it mean for creativity? The Guardian. <https://www.theguardian.com/technology/2022/nov/12/when-ai-can-make-art-what-does-it-mean-for-creativity-dall-e-midjourney>

Dahlin, E. (2019). Are robots stealing our jobs?. *Socius*, 5, 2378023119846249.

Granados, N. (2022, Januari 31). Human Borgs: How Artificial Intelligence Can Kill Creativity And Make Us Dumber. Forbes. <https://www.forbes.com/sites/nelsongranados/2022/01/31/human-borgs-how-artificial-intelligence-can-kill-creativity-and-make-us-dumber/>

Guardian News and Media. (2019, January 1). *Artificial Intelligence Can't save us from human stupidity | editorial*. The Guardian. Retrieved January 20, 2023, from <https://www.theguardian.com/commentisfree/2019/jan/01/the-guardian-view-on-the-future-of-ai-great-power-great-irresponsibility>

Haas, B. (2017). Chinese man ‘marries’ robot he built himself. The Guardian. <https://www.theguardian.com/world/2017/apr/04/chinese-man-marries-robot-built-himself>

Hübner, D. (2021). Two kinds of discrimination in AI-based penal decision-making. *ACM SIGKDD Explorations Newsletter*, 23(1), 4–13. <https://doi.org/10.1145/3468507.3468510>

Makortoff, K. (2022, August 7). *'risks posed by ai are real': Eu moves to beat the algorithms that ruin lives*. The Guardian. Retrieved January 19, 2023, from <https://www.theguardian.com/technology/2022/aug/07/ai-eu-moves-to-beat-the-algorithms-that-ruin-lives>

McGaughey, E. (2022). Will Robots Automate Your Job Away? Full Employment, Basic Income and Economic Democracy. *Industrial Law Journal*, 51(3), 511-559.

McLean, G. and Osei-Frimpong, K. (2019) "Hey Alexa ... examine the variables influencing the use of artificial intelligent in-home voice assistants," *Computers in Human Behavior*, 99, pp. 28–37. Available at: <https://doi.org/10.1016/j.chb.2019.05.009>.

Ntoutsis, E., Fafalios, P., Gadiraju, U., Iosifidis, V., Nejdli, W., Vidal, M. E., Ruggieri, S., Turini, F., Papadopoulos, S., Krasanakis, E., Kompatsiaris, I., Kinder-Kurlanda, K., Wagner, C., Karimi, F., Fernandez, M., Alani, H., Berendt, B., Kruegel, T., Heinze, C., ... Staab, S. (2020). Bias in data-driven Artificial Intelligence Systems—an introductory survey. *WIREs Data Mining and Knowledge Discovery*, 10(3). <https://doi.org/10.1002/widm.1356>

Shank, D.B., DeSanti, A. and Maninger, T. (2019) "When are artificial intelligence versus human agents faulted for wrongdoing? moral attributions after individual and joint decisions," *Information, Communication & Society*, 22(5), pp. 648–663. Available at: <https://doi.org/10.1080/1369118x.2019.1568515>.

Stein, A. (2019, January 15). *Pitfalls of outsourcing self-awareness to AI: What leaders need to know*. Forbes. Retrieved January 20, 2023, from <https://www.forbes.com/sites/alexanderstein/2019/01/06/the-pitfalls-of-outsourcing-self-awareness-to-ai-heres-what-leaders-need-to-know/?sh=6077491c318d>

The Guardian view on ChatGPT: an eerily good human impersonator. (2022, December 8). The Guardian. <https://www.theguardian.com/commentisfree/2022/dec/08/the-guardian-view-on-chatgpt-an-eerily-good-human-impersonator>

Verma, P. (2022, March 29). *The military wants AI to replace human decision-making in battle*. The Washington Post. Retrieved January 20, 2023, from <https://www.washingtonpost.com/technology/2022/03/29/darpa-artificial-intelligence-battlefield-medical-decisions/>

Walsh, T. (2017). Will robots bring about the end of work? The Guardian. <https://www.theguardian.com/science/political-science/2017/oct/01/will-robots-bring-about-the-end-of-work>

Will a robot take your job? (2015, September 11). BBC. <https://www.bbc.com/news/technology-34066941>

Pazzanese, C. (2020, December 4). *Ethical concerns mount as AI takes bigger decision-making role*. Harvard Gazette. Retrieved January 20, 2023, from <https://news.harvard.edu/gazette/story/2020/10/ethical-concerns-mount-as-ai-takes-bigger-decision-making-role/>

Yang, A. Andrew Yang: Yes, Robots Are Stealing Your Job. (2019, November 14). The New York Times. <https://www.nytimes.com/2019/11/14/opinion/andrew-yang-jobs.html>

Zeitchik, S. (2021, December 31). *Maybe 2022 should be the year we turn over decision-making to the AI*. The Washington Post. Retrieved January 20, 2023, from <https://www.washingtonpost.com/technology/2021/12/31/new-year-resolutions-ai-artificial-intelligence/>