AI and Us:

Ethical Concerns, Public Knowledge and Public Attitudes on Artificial Intelligence

Marina Budić
Department of Philosophy
Institute of Social Sciences
Belgrade, Serbia
marina.budic.93@gmail.com

ABSTRACT

In the first part I present a theoretical study of ethical challenges arising from the development and application of AI, while in the second part I present an empirical study of public attitudes towards the various aspects of AI use, which I have conducted. *Artificial intelligence (AI)* describes systems that mimic cognitive functions generally associated with human attributes, such as learning, speech, and problem-solving [12]. AI is designed to achieve specific goals and refers to computer systems that execute tasks, make decisions or achieve goals in complex situations without explicit instructions from people [13].

AI technology is no longer a field of futurology but an integral part of everyday life. AI can greatly facilitate people's daily and business lives, but it also brings challenges, such as privacy, transparency, discrimination, job loss, responsibility, knowledge, familiarity, perception and attitudes of people towards the use of AI. One of the main challenges related to the adoption and implementation of AI is the current connotations and perceptions of the subject. To most people, AI is a mysterious concept that is difficult to define and to understand how it manifests in their daily lives. An undefined concept and poor media coverage have also given AI a negative image [5]. The development and application of AI raise several ethical issues, including the interaction of AI with human rights such as privacy and discrimination [1, 4]. AI can negatively affect human rights, such as the right to privacy and equality. Systems based on AI can exhibit different levels of discrimination [2].

Previous studies [3, 6–10, 14] have examined some aspects of the AI. My research has been ispired by some of these studies. However, I have employed a new scale to measure the general attitudes of the public towards AI and some specific aspects of its use.

I have conducted an empirical study of public attitudes towards various aspects of the use of AI. The research has been approved by the Ethics Committee of the Institute of Social Sciences in Belgrade. The participants were the public in the Republic of Serbia (N=737) who voluntarily filled out an online questionnaire set up through the LimeSurvey platform. The survey was anonymous. The questionnaire consisted of general socio-demographic questions, questions about familiarity with AI, a brief introduction to the concept of AI, and questions about participants' attitudes towards the application of AI. Participants were asked to what degree they agree or disagree with the statements on a scale of 1 to 5. The participants were presented with questions and used the 5-point Likert scale to respond. I have investigated whether age, education, previous knowledge of AI, profession, and level of religiosity influences people's attitudes towards AI. Objectives were to (1) examine the public's attitudes in Serbia toward the use of AI; (2) determine which factors influence these attitudes; (3) examine whether the public shares the concerns identified by ethical philosophers in the debates on AI; (4) examine prior knowledge of the public on AI.

Data were processed and analyzed in the R [11] programming language. The general attitude towards the use of AI was assessed by creating a composite score based on the questions in which the respondents expressed their attitudes towards different aspects of the use of AI. The answers to the questions were not normally distributed, so I opted for non-parametric statistical methods in hypothesis testing.

The results showed that the public in Serbia has a divided opinion on the use of AI. Half of them have positive, and the other half negative attitudes. These attitudes are influenced by factors such as the respondents' age, education, profession, level of religiosity, and prior knowledge of AI, in a way that young, highly educated, non religious, those with high qualified jobs, especially IT professionals, and those who are more familiar with the concept of AI, have more positive attitudes towards the use of AI. Also, the results showed that the public is concerned about the disappearance of professions due to the development of AI and discrimination by AI systems.

The results suggest a need to educate the public about potential challenges and ways to prevent them. The state needs to invest more in public awareness and education initiatives. More transparency is needed in decision-making processes related to the implementation of AI. In addition, these results inform both the academic and general public and decision-makers, which can lead to a dialogue between these parties. I argue that considering different aspects of public attitudes toward AI enhances this debate.

The results are valuable for future work on this topic because similar public opinion polls have not been conducted so far. No research in the Republic of Serbia deals with this topic. Public opinion has not shaped conversations about the use of AI. Therefore, it is necessary to work in two directions: towards educating the general public in Serbia and towards increasing transparency and dialogue between the public on the one hand and the state and the private sector on the other. The second focus should be on further research of the attitudes of the public and experts on various aspects of the application of AI and further

ethical challenges that arise in this context. This research has implications for future research, particularly when forming an AI attitude scale.

CCS CONCEPTS

• Social and professional topics ~ Professional topics ~ Computing profession ~ Codes of ethics • General and reference ~ Document types ~ Surveys and overviews

KEYWORDS

AI, Public Attitudes, Ethical concerns, Knowledge

ACM Reference format:

REFERENCES

[1] Barabas, C., Dinakar, K., Ito, J., Virza, M. and Zittrain, J. 2017. Interventions over Predictions: Reframing the Ethical Debate for Actuarial Risk Assessment. (2017). DOI:https://doi.org/10.48550/ARXIV.1712.08238.

[2] Bostrom, N. and Yudkowsky, E. 2019. *Artificial intelligence safety and security*.

[3] Cave, S., Coughlan, K. and Dihal, K. 2019. "Scary Robots": Examining Public Responses to AI. *Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society* (Honolulu HI USA, Jan. 2019), 331–337.

[4] Chancellor, S., Birnbaum, M.L., Caine, E.D., Silenzio, V.M.B. and De Choudhury, M. 2019. A Taxonomy of Ethical Tensions in Inferring Mental Health States from Social Media. *Proceedings of the Conference on Fairness, Accountability, and Transparency* (Atlanta GA USA, Jan. 2019), 79–88.

[5] Dwivedi, Y.K. et al. 2021. Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*. 57, (Apr. 2021), 101994. DOI:https://doi.org/10.1016/j.ijinfomgt.2019.08.002.

[6] Gao, S., He, L., Chen, Y., Li, D. and Lai, K. 2020. Public Perception of Artificial Intelligence in Medical Care: Content Analysis of Social Media. *Journal of Medical Internet Research*. 22, 7 (Jul. 2020), e16649. DOI:https://doi.org/10.2196/16649.

[7] Garvey, C. and Maskal, C. 2020. Sentiment Analysis of the News Media on Artificial Intelligence Does Not Support Claims of Negative Bias Against Artificial Intelligence. *OMICS: A Journal of Integrative Biology*. 24, 5 (May 2020), 286–299. DOI:https://doi.org/10.1089/omi.2019.0078.

[8] Kelley, K. and Lai, K. 2011. Accuracy in Parameter Estimation for the Root Mean Square Error of Approximation: Sample Size Planning for Narrow Confidence Intervals. *Multivariate Behavioral Research*. 46, 1 (Feb. 2011), 1–32. DOI:https://doi.org/10.1080/00273171.2011.543027.

[9] Neudert, L.-M., Knuutila, A. and Howard, P.N. 2020. Global Attitudes Towards AI, Machine Learning & Automated Decision Making. (2020), 10.

[10] Pinto dos Santos, D., Giese, D., Brodehl, S., Chon, S.H., Staab, W., Kleinert, R., Maintz, D. and Baeßler, B. 2019. Medical students' attitude towards artificial intelligence: a multicentre survey. *European Radiology*. 29, 4 (Apr. 2019), 1640–1646. DOI:https://doi.org/10.1007/s00330-018-5601-1.

[11] R Core Team 2014. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing.

[12] Russell, S.J., Norvig, P. and Davis, E. 2010. *Artificial intelligence: a modern approach*. Prentice Hall.

[13] Sindermann, C., Sha, P., Zhou, M., Wernicke, J., Schmitt, H.S., Li, M., Sariyska, R., Stavrou, M., Becker, B. and Montag, C. 2021. Assessing the Attitude Towards Artificial Intelligence: Introduction of a Short Measure in German, Chinese, and English Language. *KI - Künstliche Intelligenz*. 35, 1 (Mar. 2021), 109–118. DOI:https://doi.org/10.1007/s13218-020-00689-0.

[14] Zhang, B. and Dafoe, A. 2019. Artificial Intelligence: American Attitudes and Trends. *SSRN Electronic Journal*. (2019). DOI:https://doi.org/10.2139/ssrn.3312874.