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REVIEW

Examining Artificial Intelligence and Fundamental Human Rights Through a Review and Student Perspectives from North Macedonian Universities

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ABSTRACT
This comprehensive paper seeks to explore the intricate intersection between artificial intelligence (AI) and fundamental human rights, shedding light on pivotal areas including Privacy & Surveillance, Bias in Decision Systems, and Autonomous Systems. Through an exhaustive analysis of scholarly literature and contemporary advancements, this paper aims to unveil the complex interplay between AI technologies and the safeguarding of human rights. Moreover, it integrates viewpoints derived from students representing diverse academic backgrounds across numerous universities in North Macedonia, elicited through a meticulously crafted questionnaire. In essence, this paper endeavors to provide a holistic understanding of the multifaceted relationship between AI and human rights, drawing upon academic research, real-world examples, and the perspectives of the next generation of thinkers and leaders. By delving into these critical areas and synthesizing insights from various sources, it seeks to contribute to ongoing discourse and facilitate informed discussions on the ethical implications and societal ramifications of AI advancements.

Keywords: Artificial Intelligence, Ethics, Privacy, Bias, Fundamental

1. Introduction

By looking at the most recent achievements and increasing their implementation, AI and Autonomous Systems have gained more influence over our lives. Ethical questions about these systems have become more obvious and real as their influence has grown [1]. System development is now more than just a technological or engineering problem, as evidenced by biased algorithms in social media, autonomous car decision-making systems, and even the social effects of automatization in entire transportation ecosystems like autonomous maritime [2]. Ethics and our values must be incorporated into AI and Autonomous Systems as soon as possible, as they are already present in the world around us [3]. Concerning ethics as a piece of framework configuration has likewise acquired consideration from legislative and normalization levels. The academic discourse on the connection of AI and ethics has been continuous for decades, but the advancement of frameworks and ethical inquire about have been marginally crossed [4]. The ethical investigate has been primarily centered on the potential of AI on hypothetical level [5]. So, the address remains open on application level: How should ethics be executed in practice into these systems? [1] [6]. As an arrangement for understanding the field of ethics of AI, philosophical conceptualization ought to be utilized [1] [7]. This paper aims to conduct a comprehensive review of the intersection between AI and Fundamental Human Rights, drawing insights from various research papers and books. Subsequently, we administered a questionnaire across three universities - University of Tetova, Ss. Cyril and Methodius University, and South East European University - to gather students' perspectives on the relationship between AI and human rights.

2. Previous Research

Numerous research papers and books have delved into the complex relationship between AI and fundamental human rights. Scholars have explored topics such as algorithmic bias, privacy concerns, surveillance, and the impact of automation on employment and socioeconomic equality. These studies highlight the need for robust frameworks and regulations to ensure AI systems respect and uphold human rights principles. In the article [8] the authors examine firstly whether AI inalienably clashes with human rights and human independence. Another, they dive into how AI could be connected to the beneficence criterion of AI morals and how AI could be applied in human rights-related regions. At last, they expand on personal viewpoints of what it implies to comply with human rights, tending to AI-specific issue zones. This article [9] was composed sometime recently the distribution by the EU Commission of its proposition for an AI direction. In a to begin with a temporary

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investigation of the proposed direction, the creators watch that the proposed direction consolidates a few of the fundamental standards laid down within the article: it prioritizes principal rights. It consolidates a few human rights standards, such as responsibility, and the consideration of administration through supervisory specialists to execute and uphold the control. By the by, they still feel that numerous of the recommendations in the article, which would offer assistance to operationalize the direction, are not tended to. One case is the decreased scope of the control to a list of "high-risk applications," clearing out without a legitimate system all other AI applications. The creators accept that the standards that rouse the control ought to be too connected in "lower-risk applications." Characterizing as it were the compliance prepare for AI designers, but taking off open the particular specialized prerequisites that these high-risk applications might meet clears out untouched the existing hole between lawful dialect and designing hone. In the article [10] the significance of this study in the current context is emphasized, highlighting the considerable efforts still required to integrate AI in safeguarding human rights and ensuring human dignity. Specifically, the research develops a methodology to embed human rights principles within technological systems, aiming to protect and secure these rights in the digital realm. This study systematically reviews existing literature to address the primary issue of fortifying human rights, asserting that AI should be employed to uphold rather than violate these rights. The study concludes with recommendations for future research and development in this critical domain. This article [11] advances the field of human-centered AI by providing practical recommendations for designing AI systems that enhance user experiences, promote user empowerment, and adhere to ethical standards. It emphasizes the harmonious coexistence of humans and AI, aiming to enhance well-being and autonomy while envisioning a future where AI technologies benefit humanity. Overall, this research underscores the importance of human-centered AI in creating a positive impact. By focusing on users' needs and values, AI systems can be designed to empower individuals and enrich their experiences. Ethical considerations are essential to ensure fairness and transparency. Through effective collaboration between humans and AI, the potential of AI can be harnessed to create a future that aligns with human aspirations and promotes societal well-being. In the article [12] authors provide a thorough overview of the field of AI ethics, encompassing a summary and analysis of ethical issues, guidelines, and principles related to AI. They discuss various approaches to address these ethical concerns and outline methods for evaluating the ethics of AI technologies. Additionally, the article explores research challenges and future perspectives. This comprehensive review aims to offer researchers a broad understanding of AI ethics, thereby aiding their further investigation and research. This article [13] presents an overview and analysis of the ethical issues associated with artificial intelligence, strategies for addressing them, and techniques for assessing AI ethics. The study highlights the growing ethical and social implications resulting from the widespread use of technology in various sectors. It also points out the inadequacy of current technical solutions and the need for an appropriate framework to manage these concerns. Ultimately, the paper emphasizes the need for comprehensive research to develop effective technological solutions to these ethical challenges. In this article [14] the authors provide a comprehensive analysis of algorithmic bias, covering its origins, ethical and social implications, and potential remedies. They introduce an innovative methodology for identifying and measuring algorithmic bias that combines statistical analysis with input from users and domain experts. The paper explores various algorithmic biases, such as selection bias, confirmation bias, and measurement bias. It investigates the underlying causes, including data integrity issues, algorithmic design decisions, and institutional prejudices. The study focuses on the negative impacts of algorithmic bias, such as perpetuating social inequality and hindering societal progress. By identifying the sources and consequences of algorithmic bias and suggesting effective interventions, this research aims to contribute to developing fair and equitable AI systems that can promote societal advancement and benefit individuals across diverse demographics.

3. Research Methodology

In this review paper, the methodology involved a two-step process aimed at examining the intersection between artificial intelligence (AI) and fundamental human rights.

3.1. Literature Review

Initially, a comprehensive literature review was conducted to explore various aspects of AI's impact on human rights, such as algorithmic bias, privacy concerns, and autonomy. Academic databases were searched for relevant articles, books, and reports that discussed these topics. This literature review provided a solid foundation for understanding the key issues and debates surrounding AI and human rights, serving as the basis for further inquiry.

3.2. Questionnaire Survey

Following the literature review, a questionnaire was developed and administered to students from three universities in North Macedonia. The purpose of the questionnaire was to gather empirical data on students' perspectives and experiences regarding AI and its implications for human rights. To distribute the questionnaire, contact was established with the relevant heads of study programs at each university to obtain permission for the survey. Once permission was granted, the questionnaire was administered online. Participants were assured of the confidentiality and anonymity of their responses, and informed consent was obtained before they participated.

3.3. Data Collection and Analysis

The link to the online questionnaire was made available to students for a specified period, after which the link was closed to prevent further responses. The collected data were then compiled and analyzed. Qualitative analysis techniques were

employed to identify common themes and patterns across the responses. Additionally, the data were visualized using pie charts to provide a clear and concise representation of the findings.

3.4. Ethical Consideration

Throughout the research process, ethical considerations were taken into account. Participants were informed about the purpose of the study, and their consent was obtained before they took part in the survey. Measures were also taken to ensure the confidentiality and anonymity of their responses.

By integrating insights from existing research with empirical data from students in North Macedonia, this study aims to provide a nuanced understanding of the complex relationship between AI and fundamental human rights. The methodology employed in this review paper ensures the integrity and validity of the findings, contributing to the ongoing discourse on AI and human rights.

4. Fundamental Disputations

In this section, we discuss the ethical issues that arise when humans use AI and robotics systems that are more or less autonomous. This means that we look at problems that arise when certain uses of the technologies are done, but not when others are done. It should be remembered, nonetheless, that advances will continuously make a few purposes simpler, and in this way more successive, and upset different purposes. Because the design of technical objects has an ethical impact on how they are used [15] [16], we also need "responsible design" in this area in addition to "responsible use." The emphasis on use does not presuppose which ethical strategies are most suitable for addressing these issues; they likely could be goodness moral instead of consequentialist or worth based [17]. This section is additionally impartial regarding the inquiry of whether computer-based intelligence frameworks have "intelligence" or other mental properties: It would work just as well if AI were just seen as the current face of automation [18].

4.1. Privacy & Surveillance

In information technology, privacy and surveillance are generally discussed which primarily concerns access to personal information and private data [19]. Privacy has a few perceived viewpoints, e.g., "he right to be let alone", information privacy, privacy as a part of personhood, command over data around oneself, and the right to mystery [20]. Security studies have generally centered around state observation by secret administrations yet presently incorporate reconnaissance by other state specialists, organizations, and even people [21]. The digital world has grown significantly: All information assortment and capacity are currently computerized, our lives are progressively computerized, most advanced information is associated with a solitary Web, and there is something else and more sensor innovation being used that creates information about non-computerized parts of our lives [22]. Simultaneously, controlling who gathers which information, and who approaches, is a lot harder in the computerized world than it was in the simple universe of paper and calls [21]. For instance, face recognition in photographs and recordings permits ID and along these lines profiling and looking for people [23]. This keeps involving different methods for recognizable proof, e.g., "device fingerprinting", which are typical on the Web (now and again uncovered in the "privacy policy") [24] [21]. For the "enormous 5" companies (Amazon, Google, Microsoft, Apple, Facebook), the principal information assortment in some portion of their business seems, by all accounts, to be founded on duplicity, taking advantage of human shortcomings, promoting hesitation, creating compulsion, and control [25], their company's primary data collection function appears to be founded on deception, exploiting human weaknesses, encouraging procrastination, fostering addiction, and manipulation [26]. It has made many endeavors escape from the grip of these partnerships, e.g., in activities of "moderation", in some cases through the open-source development, however apparently present-day residents have lost the level of independence expected to escape while completely going on with their life and work. We have lost information responsibility if "proprietorship" is the right connection here. We have failed to keep a grip on our information [27] [28] [29].

4.2. Bias in Decision Systems

Automated AI decision choice emotionally supportive networks and "predictive analytics" work on information and produce a choice as "output". This output may be relatively insignificant or extremely significant [21]. There are many advantages to the rapid development of AI, but there are also potential dangers and difficulties. One of the key worries is the adverse consequences of predisposition in simulated intelligence on people and society. AI bias has the potential to exacerbate and even perpetuate existing inequality, resulting in marginalized groups being subjected to discrimination and limiting their access to essential services [30]. To guarantee that computer-based intelligence frameworks are fair, impartial, and serve the requirements, everything being equal, it is essential to distinguish and relieve predisposition in AI. Besides, using one-sided computer-based intelligence has various moral ramifications, including the potential for separation, obligation of engineers and policymakers, subverting public confidence in innovation, and restricting human organization and independence [31]. Tending to these moral ramifications will require a purposeful exertion from all partners included, and it is critical to foster moral rules and administrative structures that advance reasonableness, straightforwardness, and responsibility in the turn of events and utilization of man-made intelligence frameworks [32]. The use of biased AI has various moral ramifications that should be thought of. The possibility of discrimination against individuals or groups based on factors like race, gender, age, or disability is one of the main concerns. One more ethical concern is the obligation of engineers, organizations, and states

in guaranteeing that AI frameworks are planned and utilized fairly and straightforwardly [33] [34]. Additionally, the public's trust in technology may be eroded by the use of biased AI systems, resulting in lower adoption or even rejection of new technologies. The potential benefits of AI may not be realized if people do not trust the technology or if it is viewed as a tool for discrimination. This can have serious repercussions for both the economy and society [32] [33]. Last but not least, biased AI's impact on human autonomy and agency must be considered. At the point when man-made intelligence frameworks are one-sided, they can restrict individual opportunities and build up cultural power elements [35].

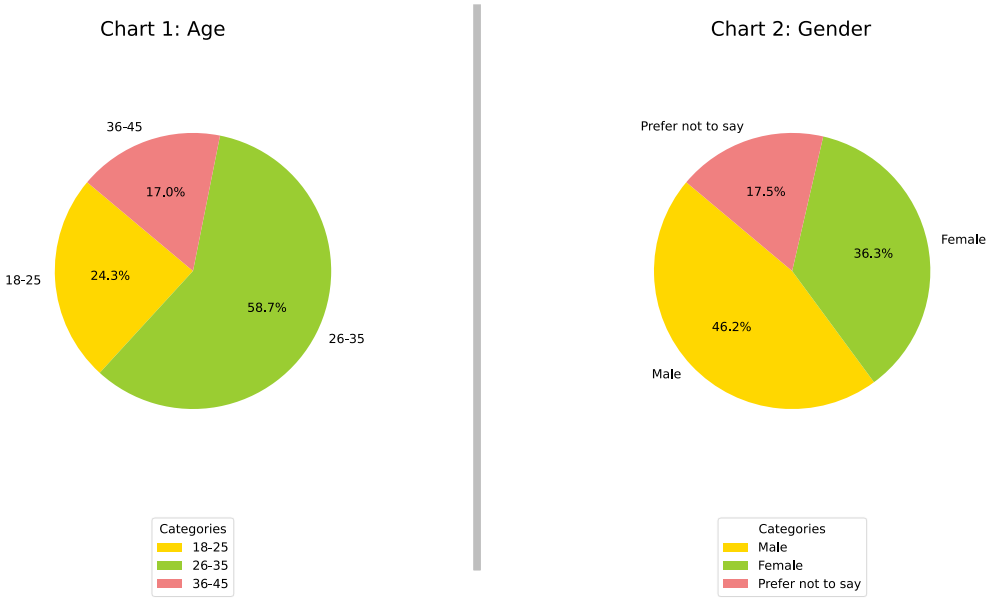
4.3. Autonomous Systems

There are a few ideas of independence in the conversation of independent systems. A more deeply felt idea is engaged in philosophical discussions where independence is the reason for liability and personhood [36]. In this unique circumstance, obligation suggests independence, yet not contrarily, so there can be frameworks that have levels of specialized independence without raising issues of liability. In robotics, the weaker, more technical concept of autonomy is relative and gradual: A system is considered autonomous to some extent about human control [37]. Taking everything into account, question is how much independent robots raise gives our present calculated plans should adjust to, or whether they simply require specialized changes. In many locales, there is a complex arrangement of common and criminal risks to determine such issues. Specialized norms, e.g., for the protected utilization of hardware in clinical conditions, will probably should be changed [38] [39]. Among the numerous independent frameworks ashore, on water, submerged, in air or space, we examine two examples: independent vehicles and independent weapons [21].

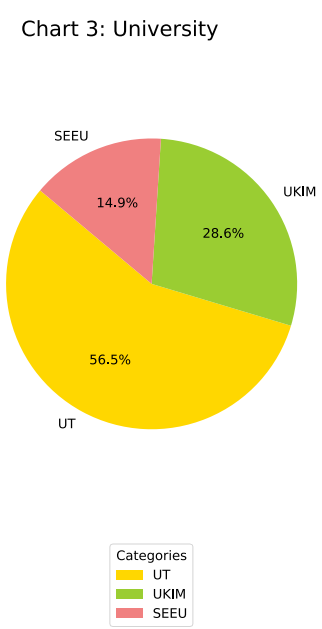
5. Results and discussion of student’s questionnaire

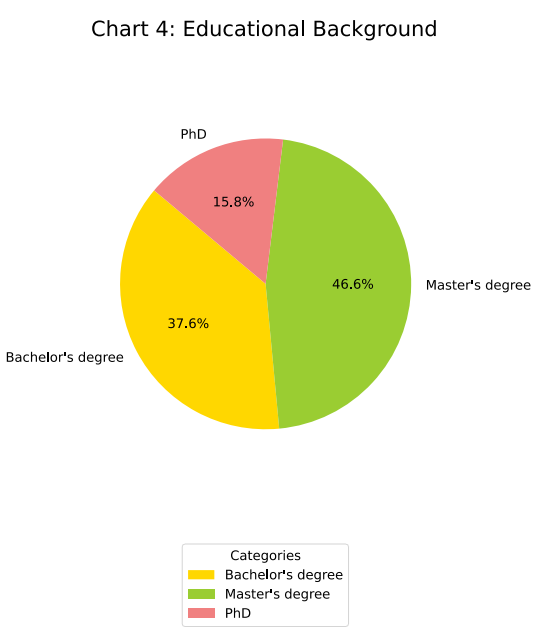
5.1. Students' Questionnaire

In this section, we present the student questionnaire from three distinct universities, forming a crucial part of our research on AI and Human Rights. A total of 234 students from various study cycles have participated in our questionnaire, providing invaluable insights into this intersectional field.

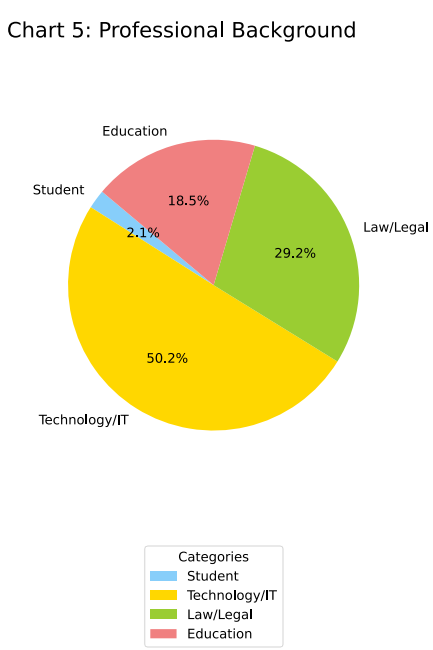


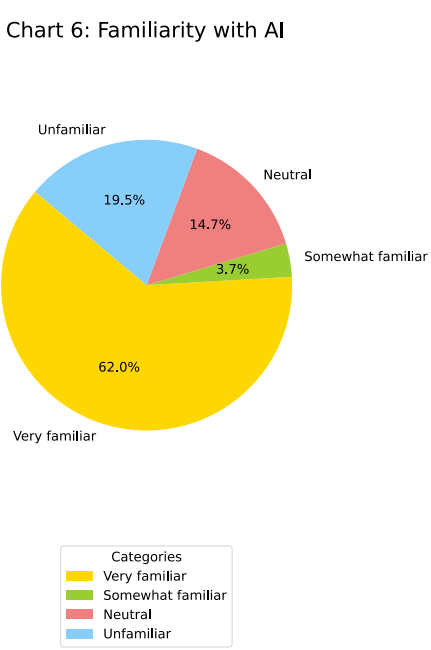
In Chart 1 our initial survey question regarding age, out of 234 responses, 60.3% fell within the 26-35 age bracket, 22.2% were between 18 and 25 years old, and 17.5% were aged 36-45 years old. Moving on to the next question on gender, our findings revealed that 46.2% identified as male, 36.3% as female, and 17.5% preferred not to disclose their gender.





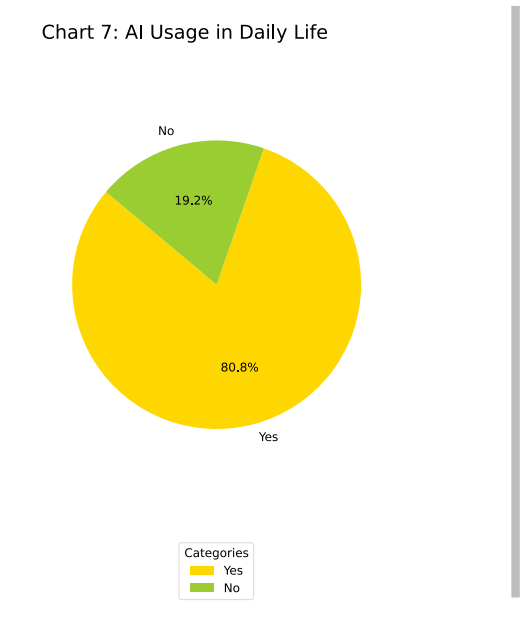
The subsequent question pertains to the universities from which students submitted their questionnaires. University of Tetova[1] emerged with the highest percentage at 56.5%, followed by Ss. Cyril and Methodius University[2] with 28.6%, and finally, the South East European University[3] with 14.9%. Another question inquired about participants' educational backgrounds. The results indicated that the Master's degree cycle held the majority at 46.6%, followed by Bachelor's degree holders at 37.6%, and lastly, individuals pursuing a PhD, comprising 15.8% of the respondents.

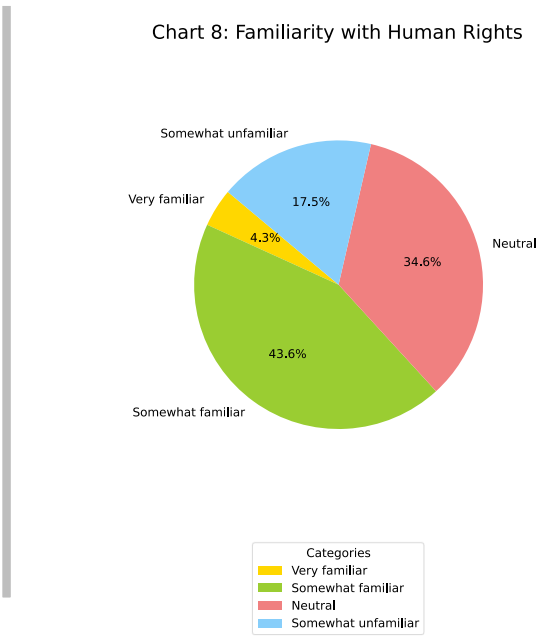




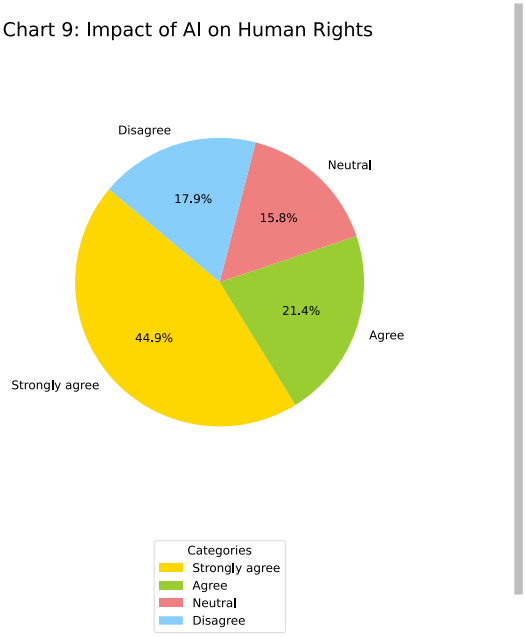
Our questionnaire highlighted the importance of professional background, especially for students balancing work and studies. IT sector had the highest representation at 50.2%, followed by Law professions at 29.2%, and Education at 18.5%. A smaller percentage were students. Regarding AI familiarity, 62.0% were very familiar, 19.5% unfamiliar, 14.7% neutral, and 3.7% somewhat familiar.

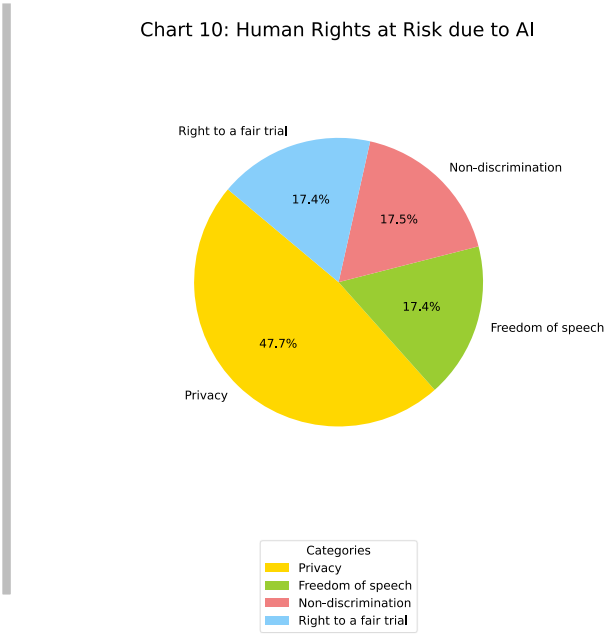
[1] UT
[2] UKIM
[3] SEEU





In our questionnaire, 80.8% reported encountering or using AI applications, while 19.2% hadn't. Regarding fundamental human rights familiarity, responses showed: 43.6% somewhat familiar, 34.6% neutral, 17.5% somewhat unfamiliar, and only 4.3% very familiar.





In our questionnaire, beliefs about AI's impact on human rights were: 44.9% strongly agree, 21.4% agree, 17.9% disagree, and 15.8% neutral. Regarding specific human rights vulnerable to AI risks, students' opinions were: 47.7% Privacy, 17.4% Freedom of speech, 17.4% Right to a fair trial, and 17.5% Non-discrimination.

Continuing our analysis, we looked at participants' concern about AI misuse violating human rights: 45.3% very concerned, 20.9% concerned, 17.9% not very concerned, and 15.8% neutral. Regarding confidence in legal frameworks, notably in North Macedonia with its National Strategy for AI by the Fund for Innovation and Technology Development: 44% very confident, 19.7% not very confident, 19.2% confident, and 16.7% neutral.

In our survey, opinions on groups facing disproportionate impacts from AI's ethical implications were: 46.6% women, 19.7% children, 18.4% men, 14.5% LGBTQ+ individuals, and 0.9% minority communities. Next, strategies for inclusive AI design were: 61.1% strict regulatory guidelines, 20.5% ethical AI education for developers, and 18.4% diverse AI development teams.

Chart 11: Concern about Potential Misuse of AI

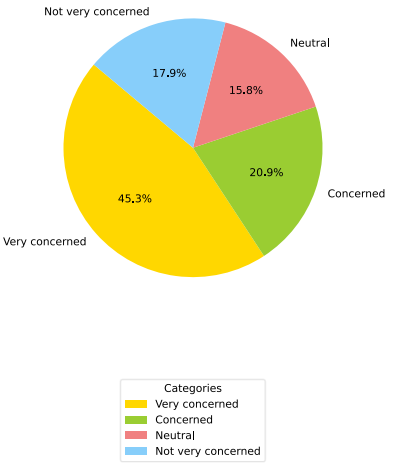


Chart 12: Confidence in Legal Frameworks for AI

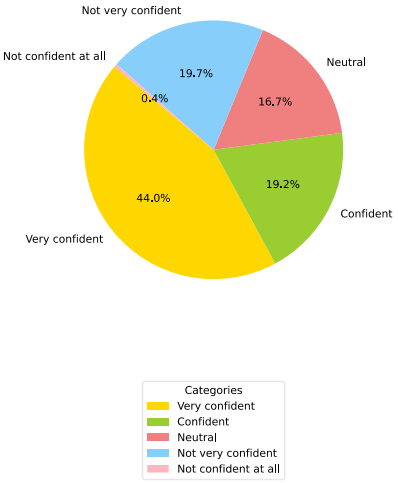


Chart 13: Groups Affected by AI on Human Rights

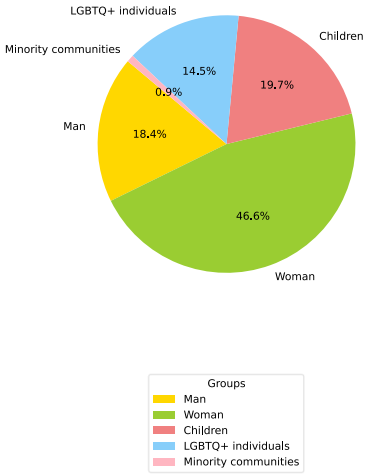


Chart 14: Ensuring Inclusivity in AI

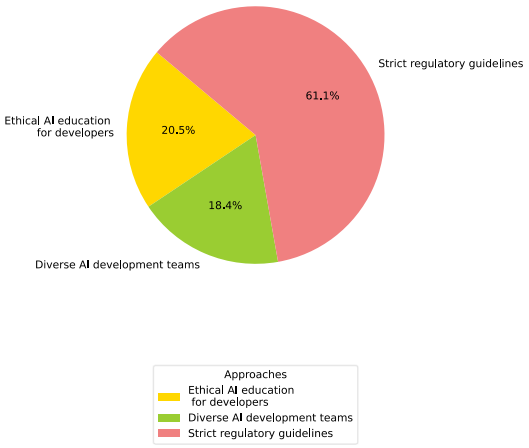


Chart 15: Public Awareness of AI Ethics

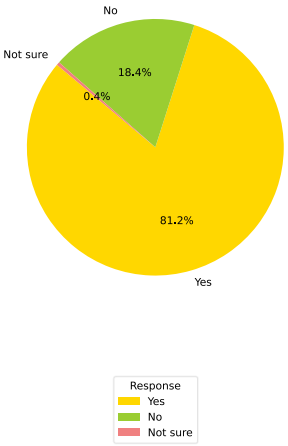
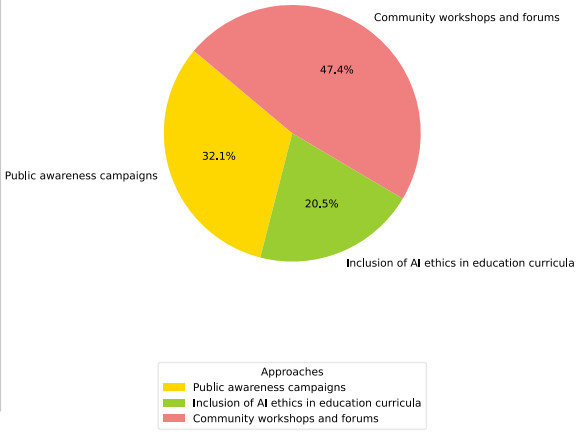


Chart 16: Educating the Public about AI Ethics



Our penultimate question delves into whether participants perceive a need for heightened public awareness and education concerning the ethical implications of AI on human rights. The responses are as follows: 81.2% answered affirmatively, indicating a perceived necessity, while 18.4% expressed dissent, and a minor 0.4% reported uncertainty on the matter. Concluding our questionnaire, our final inquiry focuses on how organizations and governments can enhance public education regarding the ethical use of AI and its potential impact on human rights. Student responses are as follows: 47.4% advocated for community workshops and forums, 32.1% suggested public awareness campaigns, and 20.5% indicated other methods not specified in the response.

5.2. Discussion

In our manuscript, we incorporated a questionnaire to gauge students' perspectives on the intersection of AI and fundamental human rights. Upon analyzing the submitted responses, it becomes apparent that students possess a degree of awareness regarding these issues. They acknowledge the potential impact of AI on the future of human privacy, reflecting a growing recognition of the implications associated with advancing technology. Furthermore, the questionnaire reveals that students believe North Macedonia requires stringent regulatory guidelines to govern the deployment and utilization of AI. This underscores a prevailing sentiment among respondents regarding the necessity for robust legal frameworks to safeguard individual rights and interests in the face of technological advancements. Additionally, the suggestion for community workshops and forums highlights a desire among students for greater public engagement and education on AI-related topics. Such initiatives could serve to enhance awareness, foster dialogue, and empower individuals to navigate the complexities of AI and its implications for human rights. Overall, the insights gleaned from the questionnaire underscore the importance of proactive measures to address the ethical, legal, and societal dimensions of AI. By heeding students' perspectives and advocating for informed decision-making, stakeholders can work towards cultivating a more responsible and rights-conscious approach to AI development and deployment in North Macedonia and beyond.

6. Conclusion

In conclusion, this paper provides an in-depth examination of the intricate relationship between artificial intelligence (AI) and fundamental human rights. It primarily focuses on key areas such as privacy and surveillance, biases inherent in decision-making systems, and the implications of autonomous AI systems. By synthesizing findings from a various of research papers and incorporating insights derived from questionnaire responses collected from multiple universities in North Macedonia, our analysis reflects the current landscape and aligns with projected developments in the field. However, it is apparent that further exploration and investigation are imperative to confront emerging challenges and grasp the subtleties within this domain. Moving forward, it is essential to prioritize sustained research endeavors aimed at deepening our comprehension and adeptly navigating the multifaceted terrain of AI and its ramifications on human rights.

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Author(s) Contributions
Enes Bajrami: Conducted the experimental analysis, interpreted the data, and drafted the manuscript. Responsible for designing the study methodology and ensuring the accuracy of the results presented.
Festim Halili & Florim Idrizi: Coordinated with the heads of departments at the participating universities to distribute the questionnaire link to students. Their efforts in securing collaboration from other institutions were vital to the data collection process.

Conflict of Interest Notice
Authors declare no conflict of interest.

Ethical Approval
It is declared that during the preparation process of this study, scientific and ethical principles were followed, and all the studies benefited from are stated in the bibliography.

Availability of data and material
Not applicable

Plagiarism Statement
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