HCI Research Proposal

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MI 101: Understanding Media and Information

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April 22, 2024

Introduction

Artificial Intelligence is an engineering marvel in the modern world. This modern technology has emerged as an incredible factor in transforming society and revolutionizing different sectors in society. One of the most notable creators in the AI industry is OpenAI, a company who is dedicated to increasing AI's capabilities. However, as AI becomes increasingly integrated in our lives, it has also become apparent that it can increase existing disparities among communities and individuals. This research paper will explore how AI contributes to the digital divide that affects areas such as education, employment and healthcare and intensifies existing inequalities among people. One example of this could be students who are poor and lack access to AI educational resources and tools.

The inspiration for this project was from my own subjective experiences with AI and the thought about its future implications. The AI capabilities have spurred a curiosity about its societal impacts and ethical issues. The research question for this topic is: How do OpenAI's ethical guidelines and practices influence the development of AI technologies? This question emerged from examination of scholarly articles discussing the topic of AI, ethics, and the impact on society. This research has implications for promoting inclusive innovation, protecting individuals' rights, and advocating wellbeing for society. This will inform policies and practices that use more equitable and ethically inclined AI systems.

Previous Research & Theory

While exploring the ethical aspects of Artificial Intelligence systems, different scholarly articles provide valuable data insights. One specific study by Potter and Lucas (2024) explores the ethical considerations used in the development of AI systems. While this research does not recruit a sample of participants, it properly analyzes insights and data from other relevant sources in AI ethics. Through a comprehensive review, the researchers highlighted the main importances of transparency, fairness, and privacy in AI technologies (Potter & Lucas, 2024). They emphasis the need to address societal impacts and ensure the ethical integration of AI into society, which displays the risks associated with biases and discrimination, which are privacy violations.

Another scholarly article by Safdar, Banja, and Meltzer (2020), focuses on ethical considerations of AI within the domain of radiology. Although this article doesn't recruit sample participants, it uses data from scholarly articles, reports, and other relevant sources in AI ethics and radiology. This research examines the ethical challenges which surround the bias in datasets, data ownership issues, and the impact of AI on the workforce demand and training. Additionally, it explores the potential benefits of AI in improving diagnostic accuracy and patient outcomes (Safdar, Banja, & Meltzer ,2020). By using this existing research, the study will emphasize the transformative potential of AI across various fields, including healthcare, while insisting on the ethical dilemmas it presents.

A third scholarly article, by Hancock, Naaman, and Levy (2020), goes into AI mediated communication (AI MC, for short) and its ethical uses for human interaction. This research identifies AI mediated communication as a rapidly expansive area of study and proposes a useful research agenda to explore its implication for interpersonal communication (Hancock, Naaman, & Levy, 2020). The methodology uses contextual analysis of existing literature, making the authors not need a sample of participants, instead uses example studies from the existing CMC and AI fields. By integrating insights from computer mediated communication and AI, the

authors highlight the need to look over existing theories and frameworks which would address the ethical, cultural and policy implications of AI mediated communication systems.

After contemplating these scholarly articles, previous research has efficiently examined the ethical considerations around AI technologies. However, each study includes different perspectives and methodologies, all contributing to a subjective understanding of the topic. This research proposal focuses primarily on mitigating an algorism's bias. While similar research topics have been used, my proposal will examine the ethical aspects of AI, using insights from diverse sources.

Regarding media theories, the Uses and Gratifications Theory and Critical Theory offers an accurate framework for the understanding of the relationship and representation between technology and society in this context of AI. The Uses and Gratifications Theory, explained by Katz and Blumler (1974), focuses on individuals' motivations for using specific media, which can be applied to AI-mediated communication to understand users' preferences and perceived benefits. Another media theory, Critical Theory, as discussed by (Adorno, Horkheimer, Marcuse, & Habermas, 1920), highlights the power dynamics and ideological implications inherent in technology, offering a critical lens to analyze the ethical dimensions of AI and its societal impacts.

Methods

Research Design

  This research project will use a mixed-method approach, using both quantitative and qualitative analyses to comprehensively explore the ethical aspects of AI technology. The study will be conducted online, using the accessibility and reach of digital platforms to engage a diverse group of participants.

  Participants will be recruited through multiple platforms, such as email lists, university organizations, and social media. When recruited, participants will be given a consent form which explains the purpose of the research, the procedures, and what the data will discover. They will need to meet a predefined standard of using AI consistently to qualify for participation. Once consent is gained, participants will engage in a series of activities comprised of completing a survey and interviews. These tasks will use both quantitative data through structured survey questions, and qualitative data, through interviews. Participants will be guided through each task by the researcher to ensure consistency and accurate data implementation.

  Collected data will undergo analysis to create contextual meaning and insights into the ethical considerations of AI technology. Quantitative data will be used for statistical analyses, while qualitative answers from interviews will be used for identifying patterns in the data (Lazaraton, 2005). The findings will be used to create a comprehensive research report, that highlights the key findings and demonstrates the importance of this topic.

  Afterwards, Participants will receive a thank you letter as acknowledgement; however, no other additional rewards will be granted, to maintain the integrity of the research. The overall time required for participants to finish the research tasks will vary depending on the length of the activities involved. While surveys might take 15 minutes, the interview process might take upwards of an hour of the participant's time. If there are cases where there are multiple

conditions present in the study, participants will be randomly assigned to each condition to ensure there is an unbiased comparison to suppress confounding variables in the study.

Using the reflections from previous SONA studies, where diverse activities were presented, such as surveys, perception tests, and media consumption were involved, the value of using third party stimulants to engage participants becomes apparent. Previous experiences were using compelling stories or an emotional commercial before answering questions. Leveraging varied stimulants may create more genuine and honest Reponses from the participant pool. This will make sure that the data will be on par with reliable research findings.

Sample

The target population for this research study will be college students aged 18-21, with no gender limitations, who use AI regularly in their lives. With the research's nature and the specificity of the demographic, a modest sample size of about 5-10 participants is deemed appropriate to yield meaningful insights. This smaller sample size allows for a focused exploration of diverse perspectives within the target population.

The rationale for selecting this number of participants has two reasons. Firstly, a smaller sample size will be sufficient for receiving a range of viewpoints within the demographic which ensures a rich and nuanced understanding of the research topic. Secondly, a smaller sample size becomes imperative to have a larger effect size to effectively represent observed relationships or differences. This approach aligns with recommendations by Serdar, C. C., et al. (2021), emphasizing the importance of effect size in compensating for the limitations associated with smaller sample sizes.

Stated in the methods section, recruitment efforts will be conducted through social media platforms, email lists, and University resources. This approach will gain maximum outreach and

engagement among the target population, which will create diverse participation in the study. Once a good number of participants has been secured, recruitment will cease. This decision will be made based on the attainment of the desired sample size and the right amount of data collected.

Measurements

During the study, a set of questions will be asked to display participants' interactions with AI-mediated communication. Initially, demographic information, which includes age, gender, and education level, will be collected to provide context for understanding their backgrounds. Participants will then be asked which AI-mediated communication tools they use, highlighting on the prevalence and diversity of such technologies in their daily lives, followed by an exploration of the frequency with which they rely on AI technology. Going deeper, participants will explain the primary motivations behind their utilization of AI-mediated communication tools, uncovering the objectives driving their engagement with these technologies. Moreover, participants will articulate their perceptions of AI-mediated communication tools, assessing their experiences and attitudes toward these technologies.

Additionaly, participants will be asked to explain their trust in AI-generated responses, compared to human written information, which will give the researchers information for their confidence in Ai technology's ability to recreate human communication. There will be real world examples where participants will explain where AI-generated communication influenced their own interactions with others. Additionally, participants will rate their satisfaction with the AI-mediated communication tools they use on a scale from 1-10, which allows for a quantitative assessment of satisfaction (Lazaraton, 2005). Finally, participants will be asked to provide suggestions to improve and innovate AI-mediated communication tools.

Expected Results

The intended outcomes of this study aim to contribute to our overall understanding of AI-mediated communication and its benefits for society. Firstly, the research will seek to dive deeper into user perceptions and experiences with AI, providing insights into how individuals interact with such technologies.

Furthermore, the study will help decision-making processes across different stakeholders, including policymakers, developers, and designers. By using user perspectives and ethical considerations, the research will provide valuable data that can guide decision-makers in making choices regarding the development, regulation, and deployment of AI-mediated communication technologies. The research aims to contribute to the advancement of ethical and responsible practices in future AI technology creation.

Overall, this research has the potential to impact a large range of people who hold power over policy making and institutions. By addressing the moral and ethical implications of AI, the research can create a more responsible approach to AI-mediated communication, shaping the overall trajectory of AI development and its impacts on communities and individuals.

Future Plan

After completing this study, the results will be granted to relevant stakeholders and the academic community. An important step in this process is to publish the findings through academic journals which serve as a platform for reaching scholas, researchers and professionals in AI research. Furthermore, recognition that this study is the initial step for exploring AI mediated communication is indeed important since there will be follow up research to go deeper into this topic, since AI is a rapidly evolving field. This may involve conducting follow-up studies to

further explore specific aspects or implications uncovered in the initial research, thereby contributing to a more comprehensive understanding of AI-mediated communication over time.

Limitations

There are several potential limitations which should be considered in this study, these might impact the interpretation and generalizability of the findings. Firstly, reliance on self-reported data can create the possibility of bias, because participants may provide responses that only align with social desire or personal perceptions. Additionally, the study's reliance on specific demographic of college students ages 18-21 may limit the generalizability of the results, rather than a large population. Furthermore, this study may find associations between variables, and may not fully explain the overall mechanisms or causality behind the phenomenon. This limitation highlights the need for further research, using experimental research to explore more relationships.

The study's methodologies and participants demographics also may influence the results that are gained. An example of this could be when using alternate research methods or studying different demographic groups may prevent detailed insight data or perspectives on the topic. Variables such as socioeconomic status and cultural background may also limit the depth of analysis and potentially impact the results. While these variables were considered, constraints in data collection or the scope of the research prevented their inclusion.

While this study provides potential insights into AI-mediated communication, it's beneficial to acknowledge its limitations. Future researchers should aim to address these limitations and adopt a more detailed and experimental approach to explore this ever-evolving field effectively.

Reference

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