CONNECT 4 ROBOT

IMPACT OF SOCIAL MEDIA ON DISPROPORTIONATE GROUPS AND THE RESPONSIBILITY OF THE ENGINEER

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SOCIOTECHNICAL SYNTHESIS

Social media is a prevalent part of society that impacts everyone every day through engineering and intentional designs. Through the creation of a Connect 4 robot, the technical research addresses the importance of the role of the engineer in creating a technology for the good of society. In creating an example of a technology benefiting society, it is important to understand how technology affects others and why engineers are responsible. The science, technology and society (STS) research paper provides a framework to understand the rationale of why social media is developed with disparities and discrimination towards groups of people and how engineers affect this technology. The technical and STS research displays the role of engineering ethics that are embedded within the technologies that people produce as well as the effects that these technologies have on society and especially minority groups.

The technical research outlines the production of a Connect 4 robot that utilizes efficiency algorithms to compete with humans in a simple game. With social media as a form of technology that invades the time of many people along with negative impacts such as discrimination and mental effects, this robot serves as a form of replacement over social media. The Connect 4 robot provides an example for engineers of how to create a technology while being cognizant of the impacts on society to ensure that the technology is not too addictive of unnecessarily discriminates against others. This robot was created with a Connect 4 board to play in real time against a human and either play in hard mode or easy mode for fun or for a challenge which was play tested with the engineers and unfamiliar users.

A successful device was made that could simulate the game of Connect 4 with users across spectrums of age, race, gender, and so forth. The games played with the robot provided a challenge on hard mode that was engaging enough to attract users to try to overcome the robot in

Connect 4. Additionally, if hard mode was too much of a challenge, then easy mode gave a chance for users to casually play games while interacting with the device. The results show that engineers can create an engaging technology while bearing ethical decisions in mind for the overall good of the end users.

The immediate question that comes from the problems of social media are how this technology affects groups disproportionately and how the engineer is responsible for this. Utilizing Latour's Actor Network Theory (ANT), and ethical theories such as utilitarianism and duty ethics, a framework can be made outlining the interactions between the engineers, organizations, society, and the technology as they all relate to one another. The framework was developed with case studies, investigative research, and ethical readings regarding the role of the engineer and how social media engineering has allowed for the development of failures within social media.

From the research, the prevalence of discrimination of technology to disregard elderly users and exploiting the addictive nature of younger users along with the organizations behind social media assist in the context of the sociotechnological framework. This framework helped to formulate the importance of utilizing ethical theories such as utilitarianism and duty ethics to serve as many people as possible from the side of the groups developing the technology. Through the analysis, it became clear that while the problems of social media were plentiful and prevalent, ethical conduct was not taking place since solving the issues does not directly benefit the organizations behind social media. Overall, this research provides a path towards a solution with engineers utilizing ethical conduct such as a utilitarian or duty ethics point of view to create or improve technologies to serve the end users rather than exploit them.

There are clear needs for a change with the way social media applications hook users and negatively affect them. There are always problems of how to improve technologies or who should be responsible for making the necessary changes, but the Connect 4 robot serves as an example that technologies can serve and positively affect society. Engineers have an important role to serve society and create the changes to improve technology such as social media for the benefit of as many users as possible.

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