

FORK-IN-SOCKETEERS' RECHES

**THE EFFECT OF SOCIAL VIOLENT ACCEPTANCE ON THE DEVELOPMENT OF
VIDEO GAMES**

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Engineering

By

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May 12, 2023

SOCIOTECHNICAL SYNTHESIS

The gaming industry has undergone significant transformations in the past few decades due to the advancements in AI and Robotics, resulting in the emergence of innovations such as procedural content generation and player modeling. Incorporating the latest AI and Robotics technology for board games, the technical project is to design a chess board that can automatically reset pieces to their original positions, making it easier for players to start a new game. As the technology behind AI and Robotics continues to advance, the gaming industry has also witnessed a surge in the popularity of violent video games. In modern society, physical violence is considered completely unacceptable, but at the same time, people tend to be more tolerant towards virtual violence. Therefore, parallel to the technical project, the science, technology and society (STS) topic investigates how society accepted video game violence and how the social acceptance of virtual violence drove the development of the video game industry.

The objective of the technical project is to design a device, the ReChess, that can rearrange chess pieces back to their original playing position. The design was divided into two major parts: hardware and software. The hardware system includes a gantry CoreXY architecture to provide the framework to move the pieces, two stepping motors to provide motion and movement, and a printed circuit board that is able to correctly drive the motors and supply power. The software programs include an image processing program to detect pieces and their locations, a rearrangement algorithm to find the best path to rearrange the pieces, and an embedded code program to manipulate the motors to turn on the electromagnet and move the pieces. The strategy that intertwines between hardware and software helped narrow down and simplify the design process.

The ReChess was finalized in the Fall 2022 semester. The result was a fully functioning robot that can rearrange chess pieces back to their original playing positions, while the electrical components were hidden in the wooden box. The device can realize if a chess piece is missing and halt the process and let the users know. The system was able to rearrange pieces that were cluttered together and also placed in awkward places, such as the middle of a tile. To prioritize player safety, the product conceals the electronics and mechanical components of the device from users by placing them underneath the chessboard. The average period to rearrange the chess board is eight to 10 minutes. As such, the finalized ReChess satisfied the proposed requirements.

The research into the social acceptance of violent video games was initially inspired by the historical transition of video games from non-violent to violent content. As video games have progressed technologically and become more sophisticated, the themes and content have become increasingly violent. This trend has sparked a debate about the impact of violent video games on society, particularly on younger generations. To investigate this issue, the study applied the Social Construction of Technology theory of Pinch and Bijker. This framework aims to identify the social groups that have played a role in shaping the current understanding of video games and the factors that have driven their construction.

The paper identifies that video games are not simply created by developers, but rather are the result of social interactions and negotiations between various groups, including players, parents, government, and distributors. The findings suggest that the widespread availability of violent video games is due to a complex interplay between game developers, retailers, regulators and consumers. While game developers have created the content, retailers have played a crucial role in making it accessible to consumers, and regulators have largely failed to control the sale and distribution of violent video games.

The study sheds light on the complex social and cultural factors that have contributed to the acceptance and availability of violent video games in society. The research is able to identify the various social groups that have played a role in shaping public perception and facilitating the availability of violent games. Future research is needed to identify and develop solutions for each stakeholder that can help mitigate the issue of rising violent video games.

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PROSPECTUS

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