

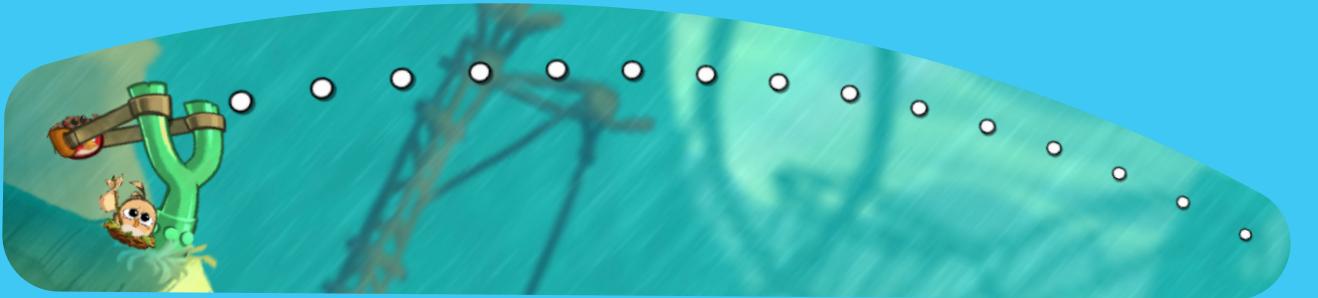
# VIDEO GAMES x HCI

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## INTRODUCTION



Video Games have been an important form of software and are used as frequently as all other types of software. However, Video Games are very different from other forms of software because there are many aspects to using and playing a game. This also varies from platform to platform and genre to genre. This term paper discusses the incorporation and subsequent evolution of Human Computer Interaction in Video Games. This paper includes a comprehensive research of major papers on this topic by distinguished researchers and summarizes the key takeaways and results.

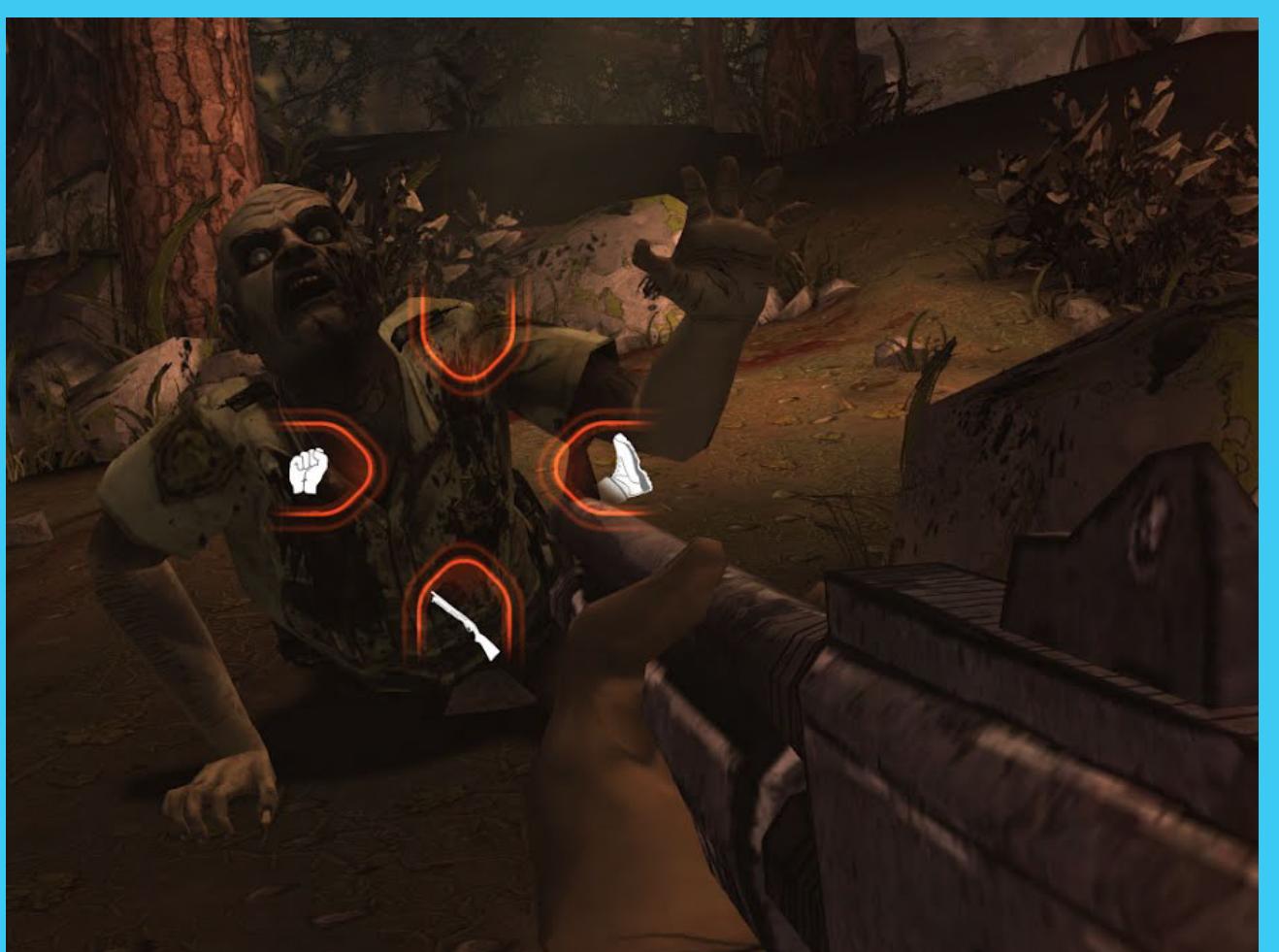


## KEY RESEARCHERS



There is a lot of insightful papers published online that discuss HCI in video games. Most popular researchers in this area include Pippin Barr, Jesper Juul and Daniel Johnson and most of their research centers around good HCI principles in Video Games. The papers researched for this review are as follows -

- Video Game Values: Play as Human-Computer Interaction (P. Barr)
- Easy to use and incredibly difficult: on the mythical border between interface and game-play (J. Juul, M. Norton)
- Effective affective user interface design in games (D. Johnson, J. Wiles)
- Heuristic evaluation for games: usability principles for video game design (D. Pinelle, N. Wong, T. Stach)
- Video game values: Human-computer interaction and games (P. Barr, J. Noble, R. Biddle)



## RESEARCH TAKEAWAYS



All the papers mentioned above collectively answer many important questions about video games and how to design good user experiences for them. Video Games are very different from other software because not only are they 'used', they are also played; the designers have to keep that in mind in order to provide a good user experience to players. All papers cover many areas of game UI design and cover many aspects to what makes a game usable and / or playable. One paper looks at the limitations to user interface design, another one looks at how game-play is shaped by user interface elements, another one discusses design methodology for video games and another one formally recognizes heuristics for video game UX design.

A really good way to evaluate games like other software for the purpose of UX is through value theory, which is published by P Barr and then cited by a few papers in our research methodology. "Specifically, the user-interface of a game represents values of game-play to the player, and also mediates that player's expression of values through their conduct."<sup>12</sup> While conducting various experiments and analyzing their findings, along with combining the Nielsen's heuristics, these researchers came up with formal principles and analyses of acceptable UI / UX design principles and methods for video games for most genres and platforms.

After looking at all papers, we are given a good overview of how HCI in video games has evolved over the years and the common HCI principles that govern it. There needs to be a balance between standard UI design principles like visual feedback etc. and game design elements like mismatch between camera view and user actions, AI issues, bad input mappings etc. Since UX research is a really vast topic, there is not one 'correct' method to design good user experiences for games. These papers provide strong guidelines based on years of research by distinguished researchers which, when applied along with personal creativity, helps create unique and revolutionary designs. With the introduction of new technology like Augmented Reality, it is inevitable that there are more usability issues that will come up in these new technologies, some of which have not even been discussed yet. Nonetheless, HCI in video games is a huge and booming area of research in HCI and will continue to evolve over the years.



## FURTHER AREAS OF RESEARCH



Most of research available on the topic of HCI and video games discusses the software aspect of the video game. I believe that it will be an interesting area of research to talk about various hardware elements that affect the user experience in game. There are several types of video game consoles, each with different controllers. Each controller type is also very different, with some being touch, gesture and click / press and some being a combination of those. It will be fascinating to see how each controller related to the UI in game and how does a game vary in usability and playability from one controller to another, especially for games that are multi-platform like Fortnite etc.



START

PRESS PLAY TO BEGIN!

READY