

Chapter 1

Quantifying “Magic”: Creating Good Player Experiences on Xbox Kinect

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ABSTRACT

In November 2010, Microsoft released the Kinect sensor as a new input device for the Xbox 360 gaming console, and more recently the “next generation” of Kinect was released in November 2013 as part of the Xbox One entertainment system. Kinect enables users to control and interact with on-screen elements by moving their bodies in space (e.g., move characters, select menu items, manipulate virtual objects) and via speech input. The team at Microsoft Studios User Research (SUR) has worked with game designers, programmers, and hardware developers on games and other applications that use Kinect. In this article the authors leverage data SUR has collected over the development cycles of many different games created for many different audiences to summarize the unique user experience challenges that the Kinect sensor brings to game development. The authors also propose principles for designing fun and accessible experiences for Kinect.

INTRODUCTION

Video games can provide players with a wide range of experiences, from the thrill of shooting enemies in a highly-realistic combat scenario to the challenge of solving complex spatial puzzles, to the simulation of racing a Formula 1 car, to the simple joy of beating a friend in virtual Scrabble™. A common goal for all video games, though, is to either allow players to experience things that they cannot do or that do not exist in real life, or to greatly enhance the fun, reward, or challenge of real life experiences by creating a “game-ified” version of them. The Kinect full-body motion gaming sensor for the Xbox 360¹ allowed for the creation of new types of games based on experiences that had been difficult to “game-ify” in

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the absence of such full-body motion input technology, such as dance, fitness, and augmented reality. It also has the potential to make video games from more “traditional” genres (action, combat, racing, etc.) more immersive by allowing users to more “directly” interact with them.

The Vision of Kinect

Kinect was designed with a few specific goals in mind. First, Kinect was meant to expand the technical capabilities of motion gaming. While Kinect was being developed, an extremely popular motion gaming device was the Nintendo Wii². The Wii requires the player to move a handheld controller through space in order to interact with its games. This constrains the user experience in some ways, because Wii games are programmed to attend only to the location of the controller relative to the sensor, meaning that the rest of the player’s gestures are irrelevant. Typically the player uses the standard “Wii-mote” controller to interact with the system, but some games require a secondary controller accessory, which requires users to have a collection of input devices. Similarly, the Sony EyeToy, which was a motion input device for the Playstation 2 that pre-dated the Wii³, allowed for some controller-free gesture input, but its functionality was extremely limited. There was therefore an opportunity to advance motion gaming to include inputs derived from full body tracking of multiple players in 3D space as well as speech inputs. In expanding the technical capabilities of motion gaming, the possibilities for player experience could also expand.

As one result of this increased technical capability, the creators of Kinect wanted using it to feel “magical.” The design philosophy behind this was that when a game removes the intermediate input device between the user and the system – the game controller – then the players’ ability to interact with games “directly” using their bodies would inherently be more immersive than traditional controller gaming experiences. Indeed, the idea that movement can enhance the engagement and emotion of players

Figure 1.



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