Chapter 27
A Historical Review of Immersive Storytelling Technologies:
New Uses of AI, Data Science, qnd User Experience in Virtual Worlds

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ABSTRACT

This chapter is focused on describing the history and the current relevance of user experience (UX) techniques that combine data science and AI in the research field of interactive and immersive storytelling, including virtual and augmented realities. It initially presents a brief history of interactive storytelling, video games, VR and AR, AI and data science, and the user experience (UX) techniques used in those areas. Later, the chapter describes the UX techniques in depth, using AI and data science that work best and are more useful for testing interactive media products, describing examples of its applications briefly. Finally, the chapter presents conclusions in relationship with utopias and dystopias regarding the future use of UX, AI, and data science in several areas such as edutainment, social media, media arts, and business, among others.

DOI: 10.4018/978-1-7998-6985-6.ch027

INTRODUCTION

There has been a significant implementation of technology to manage scientific data during the last two decades. One consequence of the increased use of technology has led to diverse findings in science and high techs like VR systems, UX, and big data analytics, that have challenged and questioned our descriptions and representation of reality and our daily habits.

This chapter focuses on the material senses. Significant optimization and economization of virtual reality (VR) and augmented reality (AR) displays have served to question, explore, and research the communication and languages of the material senses to a greater extent so that they can be merged and immersed in different VR and AR products. This new reality has reinforced a more profound recreation of the physical senses. Advancements in applied data science, the increase of bandwidth for data transfer networks, mobile ram abilities and memories, massive media alternatives for displaying and collecting social information, and the implementation of programming systems have helped Artificial Intelligence (AI) to manage significant amounts of personal information. These improvements are mainly motivated by the desire to increase business and industry profits through the registration, analysis, and monetization of the collected data from users and data based on the human interactions with different high-tech interfaces (computer, mobiles, VR and AR displays, and tablets). Of course, we can use high technology for other purposes, such as education or improving human beings' wellness. However, business and industry are still the leitmotivs of most research and applications of data science and artificial intelligence.

In this complex context of massive subjective and objective data and the ability of managing it with artificial intelligence software, companies are investigating the possibility of using data science, which gathers large amounts of subjective experiences, to collect objective responses from their users through the analysis artificial intelligence can provide.

HISTORICAL REVIEW OF INTERACTIVE, IMMERSIVE AND TRANSMEDIA STORYTELLING UX

Automated and interactive narration is usually linked to video games. However, it is not entirely true that its origin is only in computer games. Many of the characteristics of these narrative systems can be found in board games and, significantly, in the birth of role-playing games, invented by Gary Gigax (1938–2008) and Dave Arneson (1947–2009). The game *Dungeons & Dragons* (1974) was revolutionary, for it changed the paradigm of the traditional game. What is more, it established the way to elaborate a free and interactive story, lived in the first person, and based on rules. With the popularization of video game consoles and personal computers, due to the cheapness of electronic components, many young engineers became interested in programming fantasy-themed worlds that were mainly influenced by the work of J.R.R. Tolkien (1892–1973). Another critical factor to emerge was connecting computers in networks, such as through Arpanet (whose development began in the 1970s with the NCP protocol, *Network Control Program*, before the current TCP / IP, Transference Control Protocol and Internet Protocol). It was William Crowther, one of the programmers involved in the development of Arpanet, who programmed the first fully interactive, text-based fantasy story: *Colossal Cave Adventure* (1976) (Figure 1) (Barinaga, 2010). In 1977, the interactive story was polished and expanded by Don Woods, one of the fathers of hacker culture, who, as a student, discovered *Cave Adventure* on a Stanford University computer.