UNIVERSITÀ DEGLI STUDI DI SALERNO

Computer Science Department

Master's Degree in Computer Science

Security Issues in Virtual Reality: A Systematic Literature Review ABSTRACT

SUPERVISOR:
Prof. Fabio Palomba
Dott. Dario Di Dario
Università degli Studi di Salerno

CANDIDATE:
Muhammad Umair Manzoor
Matricola: 0522500904

Academic Year 2022/2023

This thesis was carried out in the

ABSTRACT

Virtual reality is an experience that makes you feel like you are in a real place. Users wear a headset that has sensors that track their moves and let them interact with the virtual world. In recent years, Virtual Reality (VR) has been the focus of a great deal of media attention due to its potential to disrupt multiple industries and create engaging new forms of experience, making a multimillionaire market year by year. Integrating into our everyday lives, VR is becoming a useful tool for transforming industries as diverse as gaming, education, healthcare, architecture and offering innovative experiences. In the early part of 2015, Mostly people were not familiar with Virtual Reality, and it was also quite expensive for the average user. But after the covid outbreak, the availability of VR gadgets have increased rapidly. The covid-19 pandemic has made virtual reality technology much more popular. Since a lot of people work from home and try to avoid public places. The increasing number of cutting-edge technologies have created plenty of new threats to the security, privacy, and morality of individuals. With the passage of time, a significant number of individuals are victimized by fraud due to insufficient education or inadequate training, resulting in the loss of their personal information, such as bank credentials, company usernames, various other sensitive data and financial loss. Virtual reality offers substantial assistance to individuals in avoiding such activities by utilizing biometric sign-in methods. The aim is to examine security challenges in VR systems and propose solutions. We conducted a literature review of 47 studies focusing on security and privacy issues in virtual reality. Our findings suggest that the metaverse and technologies like Blockchain can protect user data. We explore various techniques to secure user data, propose solutions, and highlight the need for research to ensure proper virtual reality protection.

Keywords: Security, User Data Privacy, Virtual Reality, Augmented Reality, Future Life, Metaverse