Simulated Game Playing

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Abstract

With covid everyone is locked in their homes at this time we thought of learning new skills and making some fun projects in the concept of Simulated Game Playing. The idea behind the project is to create a simulated game playing environment so that the user can play the game using gestures. It is simply controlling games with our movements. Object tracking is done by using OpenCV and PyAutoGUI for the keypress. This can be used to control any game with a set of keys are used for control. First, the object is marked and then with the help of code the object tracking is done. Full screen areas divided into different areas like left, right, up, down and neutral as the specified key is pressed the object movement is performed. we want. Now whenever our tracking object moves to the left with the help of PyAutoGUI, the left key is pressed. Similarly, for other keys.

Keywords: Game, OpenCV, PyAutoGUI, keypress, tracking

1   Introduction

This Digital video games can be enjoyed more naturally and conveniently using body gestures. The game can be controlled using specific body gestures. This project aims to create a unique application that connects to the game. All gesture interaction is best for interacting with games. Furthermore, the approach of stochastic gradient descent body gesture recognition system can efficiently track both static and dynamic body movement gestures. Games that can be played in a virtual world through the same movements in the real world without installation of sensors and a special controller. In particular, this chapter introduces a virtual 3D block-building play system that can control the movements with human gestures. Therefore, users can use the role of the game without having to know the operating instructions of the body movement first.

He can operate a virtual game by behaving in a manner similar to the daily routine movements as in the physical world. To improve the interaction in qualitative terms in dynamic environment it is desired that the means of interaction should be as natural as possible. The Python Open CV API provides a large number of tracking algorithms, each one of it developed as a better one of the previous algorithm. Algorithm is designed by using the Open CV Library when it comes to a very appropriate performance of Real Time object tracking. This is the very reason that the application gains the most efficient, approximate & faster.

2   Literature Survey

Systematic Review Of Virtual Reality & Its Challenges Pawan Verma Student, Faculty of Computer Applications, Manav Rachna International Institute of Research & Studies, Faridabad impawanverma14@gmail.com Proceedings of the Third International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV 2021). IEEE Xplore Part Number: CFP21ONG-ART; 978-0-7381-1183-4

Current systems have the concept of virtual reality that can change reality in the computer world,such as games or videos that you play on a VR device such as a VR headset. Virtual reality enhances the user experience and is a way to meet and feel the real community in every virtual world. Augmented Reality (IR) is a technology that allows people to interact with objects over and over, whether it's a reexamination of today's reality or a changing environment. This is how we see, feel and access the past, the future and the recent. The time when virtual reality turns into virtual reality is called VR. The PC game can continue from to roam around your dream house and travel the world seamlessly. He can enter the world. This document provides a background on virtual reality, listing the key concepts and categories of VR systems, followed by entertainment technologies. A comprehensive review of VR system is provided. Conduct a survey of all VR applications and their interactions: input devices, output devices, and applications. In addition, human factors and their impact on VE design issues are discussed. Developing a VR application is not as simple as it used to be on regular PCVR headsets, which run on VR ready desktops powered by dedicated processors and graphics cards. The mobile processor of standalone headsets is much weaker than the ones on a dedicated VR computer. Traditional VR is mostly about headset experiences either in completely virtual environments or 360° videos. However, practical problems with measurements arise in attaching sensors to players. These VR display headsets must be fixed on the player's head while playing. Some of the Expensive Devices that are Absolute need for playing VR Games in The Existing system are as follows

•   VR headset - A virtual reality headset is a head-mounted device that provides a VR experience to the user..
•   Input devices – devices give users a sense of immersion and decide how they communicate with the computer.

2018 IEEE Virtual Reality and 3D User Interfaces Conference, 18-22 March, Reutlingen Germany stated that traditional VR is mostly about headset experiences in

virtual tour or 360° video environment. The AR, on the other hand, has a mixed reality by putting the virtual inside the reality. In this study we propose the concept of augmented virtual reality, which is located in the middle, right of the virtual continuum, which is often called augmented virtuality. We offer another way of thinking by mixing virtual reality, focusing on capturing human performance in three dimensions and embedding it in a virtual environment. By compressing and exporting this new type of 3D media, we can enable realtime interaction, communication and collaboration between users.

Being fully 3D, our media is compatible with many applications such as VR, AR, MR or freeangle viewing to open a new and exciting time, while at the same time ensuring that it is understandable for all users. We're demonstrating our technology with a two-player model that can be viewedon a variety of devices, such as a headset (VR) or tablet (AR). Our system, which is to install, requires minimal human intervention, and is low cost, goes one step further in making this technology available to the public customer.

[3]Visual Reality and Presence in Virtual Reality Games Jonatan Hvass, Oliver Larsen, Kasper Vendelbo, Niels Nilsson, Rolf Nordahl and Stefania Serafin Aalborg University Copenhagen 978- 1-5386-1635-2/17/$31.00 when the virtual point 2017 (VR) finally reach the consumer goes home and there tons of apps games available.

This article presents a crosssectional study investigating how visual fidelity (number of polygons and texture resolution) affects the usability ofcommercial VR games. The results showed that participants with a better perception ofperceived reality had a greater sense of presence as assessed by selfreport, and physiologicalmeasures found that how obvious the truth was accompanied by a stronger response that could also indicate presence.

3   Proposed System

A simulated game is a reality –altering system in the computer world, it can play or the video you play on a VR device like a VR headset. Creating a simulated environment to be a part of the experience is leveraging's computing innovations. The idea of virtual reality is to enter another virtual world. VR optimizes the user experience and is a way to meet and feel the real community in the virtual world.

In this project we wanted to optimize the cost of the gaming tools by replacing the hardware VR headset with the Machine Learning techniques. The webcam is used to capture objects and the viewer is used to capture motion. Gesture interaction as a technology has been successful in the gaming industry and is gaining more and more attention. We gathered information from many people through interviews and discussed the advantages and disadvantages of interacting with gestures. It provides people with new information and good fun that normal interaction cannot provide. It makes human-computer interaction even better.

That's why we want a system that uses human gestures to make gestural interactions more prominent than traditional interactions.
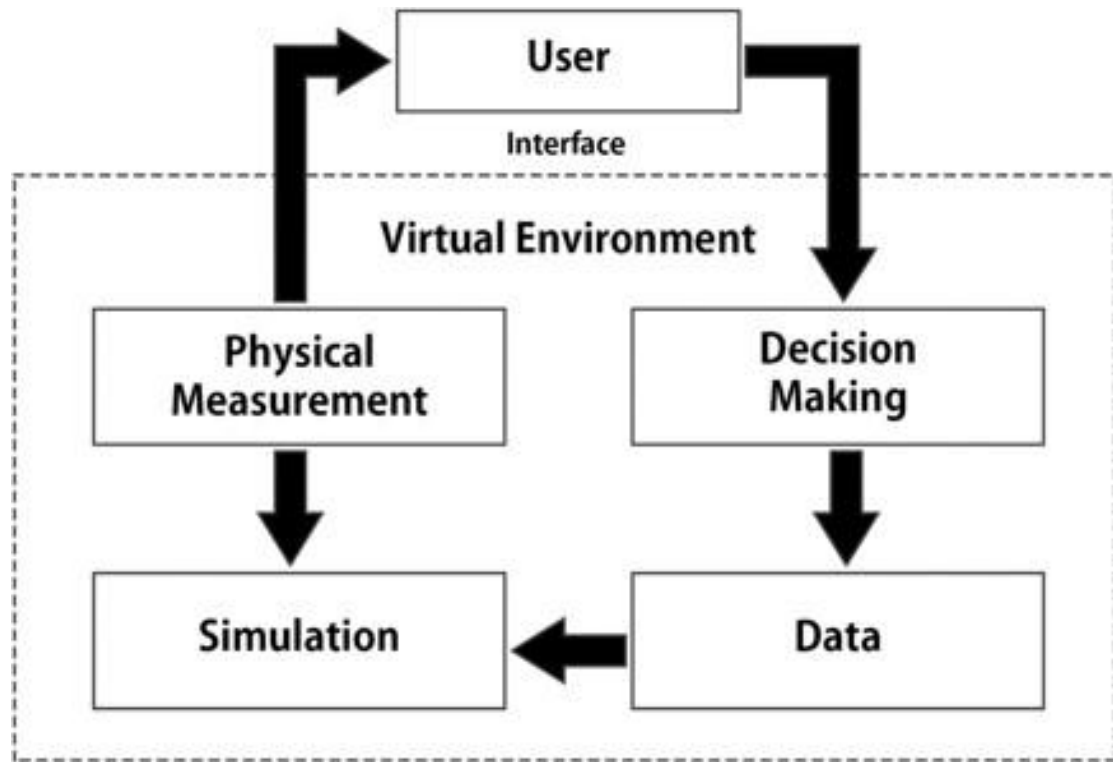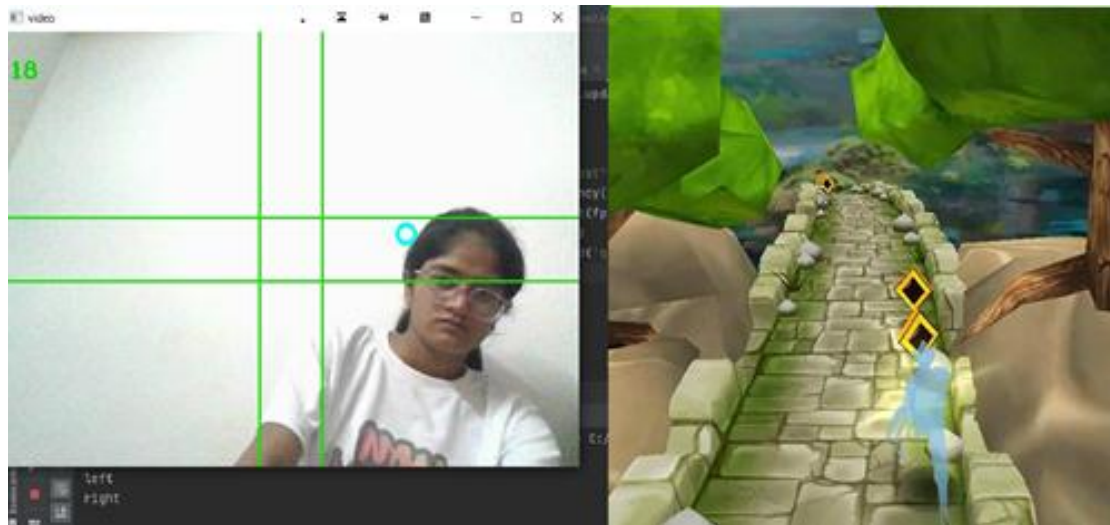
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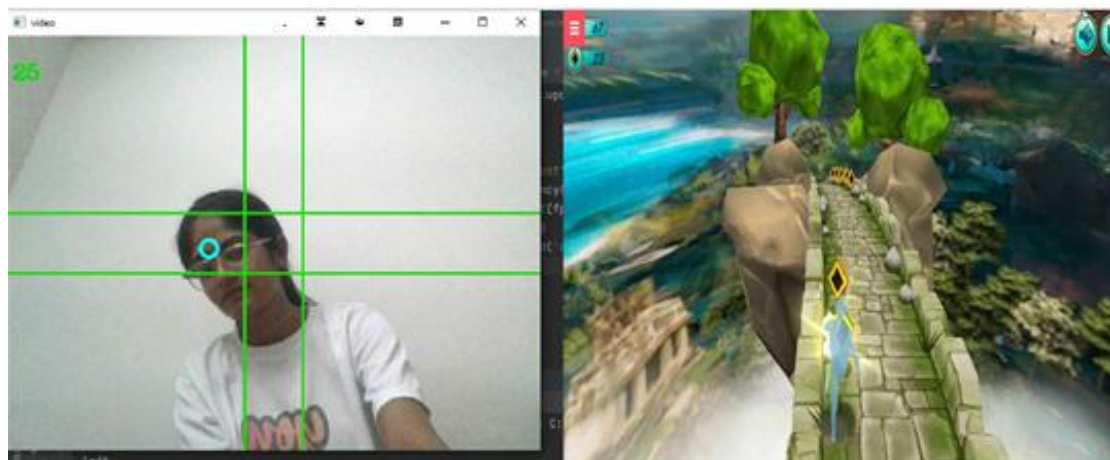
4   Implementation
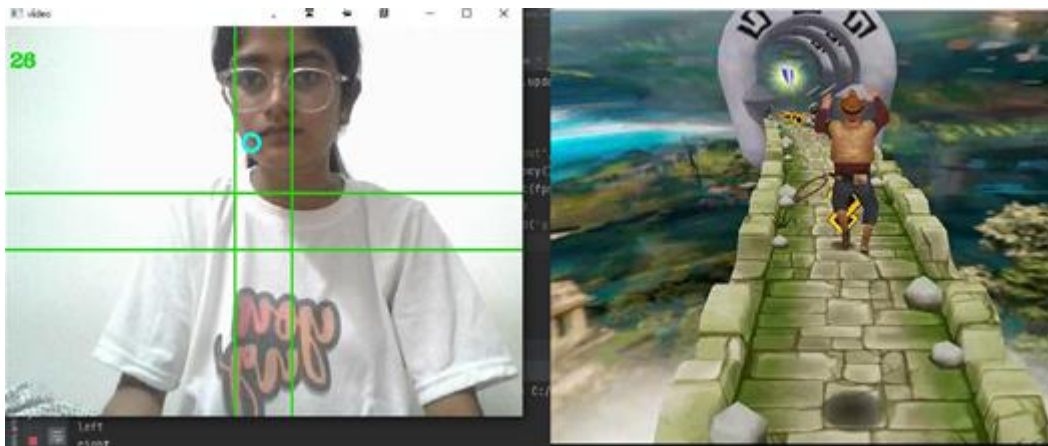
Figure1: upward direction

When we move our body up then the man jumps in the game

Figure 2: right direction

When we move our body right side then the man moves towards right-side in the game

Figure 3: left direction

When we move our body left side then the man moves towards left side in the game

5   Conclusion & Future Scope

Using OpenCV and Python, we built a Simulated Game Playing environment. It is possible to incorporate a model that detects hand gestures and other body movements and postures to generate the actions while playing the game but detection may take more time than tracking. The performance of person detection in image processing is

required for a growing number of real- time applications. We will use various types of extraction process techniques in the future for various purposes, and this technique can be used in VR gaming, shopping malls, Augmented Reality gaming, parks, and so on.

6   References

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