

Virtual Assistant For Elderly People

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Abstract- *This paper is concerned with Virtual Assistant for Elderly people system. Nowadays person above 65-70 years old is vulnerable to get MCI that mild cognitive impairment because of which they are unable to perform daily life activities and they are always confuse with directions hence they are vulnerable to get lost while traveling and they also unable to recognise their own kith and kins. Vr-model is Assistive Technology (AT) that is full technical device that contributes to and assists in the better execution of daily life activities. Virtual Assistant for Elderly people is an android application which is capable to solve all the problem they face. The system has features out of which scanning the person in front of the camera through VR and showing a video memory to assist the patient in Recognition of his/her kith and kins It was yet to be researched properly and practice in real life. Scanning feature and other features of this application will help to assist patient in performing daily life activities of his own so they can live their life blissfully rather than being confused and irritated.*

Keywords- Virtual Reality ,Mild cognitive Impairment.

I. INTRODUCTION

Facial recognition technology is a set of algorithms that work together to identify people in a video or a static image. This technology has existed for decades, but it has become much more prevalent and innovative in recent years. One such innovation is the integration of artificial intelligence (AI) within facial recognition systems. Intelligent, AI-based software can instantaneously search databases of faces and compare them to one or multiple faces that are detected in a scene. In an instant, you can get highly accurate results – typically, systems deliver 99.5% accuracy rates on public standard data sets. With ML Kit's face detection API, you can detect faces in an image, identify key facial features, and get the contours of detected faces. Note that the API *detects faces*, it does not *recognize people*. With face detection, you can get the information you need to perform tasks like embellishing selfies and portraits, or generating avatars from a user's photo. Because ML Kit can perform face detection in real time, you can use it in applications like video chat or games that respond to the player's expressions. In 2010, there were 3.7 million Indians with dementia and the total cost of social spending was estimated at 14,700.macos.

Although the numbers are expected to double by 2030, costs will triple. At the time of 2010, there were between 21 million and 35 million people with AD worldwide. Usually, it starts in people over the age of 65, although 4% to 5% of Alzheimer's cases start early, which precedes this. It affects about 6% of people aged 65 and over. In 2010, dementia led to the death of an estimated 486,000 people. Alzheimer's disease (AD), also known as Alzheimer's disease, or Alzheimer's just, makes up 60 to 70 percent of people with dementia. It is a chronic neurodegenerative disease that usually starts slowly and gets worse over time. The most common early symptom is disease difficulty remembering recent events (loss of temporary memory). As we can see Alzheimer's patients have short-term memory so they deal with common problems like wandering, forgetting food, forgetting the faces / names of family members are the most common normal. To solve all of this problem Alzheimer's patients, have a carer too, who he cares for them and helps them with their daily activities. What if there is an application to do care for the patient instead of the real caregiver, which helps the patient to remember the faces / names of family members, reminding them of the medicine, helping them to follow it fully schedule, etc. It also helps patients evaluate their progress report on the progress it will make done by playing games. Goal of the Android Application is to make Assistance for user in Daily Life Activities for patient with Mild Cognitive Impairment or person who has problems in remembering things. Develop four main features for the app: a. Pharmacological treatment: help user remember his dosage. b. Person recognition: help him remember the person and his relationship with him. c. Locating the user: giving his location notification to him and his kins. d. Assistance for remembering things f. Geofence: to make sure patient don't get separated from the care taker.

II. LITERATURE SURVEY

It is a literature study of the research papers and research which gives the detailed information about some of the existing systems along with its advantages and disadvantages. Patricia C. Heyn [1] The main purpose of the paper is to summarize the current research investigating the use, acceptability, and feasibility of IVR interventions for the diagnosis of dementia and MCI. Include evidence of the potential effectiveness of IVR as a psychosocial training strategy for dementia and MCI. Birgitte Schoenmakers, Frank

Buntinx [2] Explains that VR experiences are common especially the listening process, although increasing emphasis is placed on the alternative nerves and body movements. In addition, it is important to know that courses are included in this review includes computer-generated graphics. Or visual technology has it developed to the point that it is sometimes difficult to understand from reality, production that release rate is time-consuming, expensive, and computer-based, it requires the most expensive hardware. Birgitte Schoenmakers, Frank Buntinx, Jan Delepeleire [3] states that Those care for dementia bear the brunt of it. In addition to groups compared to caregivers or peers, they suffer from feelings of depression and poor health. VR now more accessible, more expensive, and more portable than ever, barriers to expanding technology beyond their realm such as thrilling entertainment and more in-depth research are much lower. Sung-Jong Eunl and Jung Yoon Kim [4] states that in Alzheimer's disease lead to the destruction of the human environment unlike other physical ailments, and are considered to be chronic diseases that lead to serious problems. Despite numerous studies, identifying the causes of such diseases can be difficult because of the complexity of brain therefore, there are no clear treatment modalities. Ioannis Tarnanas, Christos Mouzakidis, Winfried Schlee [5] states that further assessed functional capacity by both neuropsychological tests (including measures of attention, memory, working memory, executive functions, Oanguage, and depression) and also evaluated performance in finger-tapping, grip strength, stride length, gait speed and chair stands separately and while performing VR-ADLs in order to correlate performance in these measures with VR-ADLs. Virtual Reality in Brain Damage Rehabilitation: Review. [6] This paper describes considers that have utilized VR in tile evaluation and recovery of explicit inabilities coming about because of cerebrum injury, including chief brokenness, memory debilitations, spatial capacity weaknesses, consideration deficiencies, and one-sided visual disregard. Moreover, it portrays contemplates that have utilized VR to attempt to balance a portion of the impediment that individuals experience after cerebrum injury. Jane Keleta, Ekavi N. Georgousopouloub, Jane Frosta Stephen Isbela[7proposes future investigations in PLWD and MCI evaluate the impacts of morn supported utilization of virtual and increased reality innovation on mental results including QoL, lack of concern, and burdensome indications, with the joining of physiological biomarker results. Rebeca I. Garcia-Betances, Maria Teresa Arredondo Waltemyer, Giuseppe Fico [8]. Describes the utilization of the most recent presentation innovation's accessible, for example, arising head-mounted showcases and 3D brilliant TV advancements, along with practical multi-sensorial c01mection gadgets, and neuro-physiological criticism limit, are probably the most valuable upgrades this small-scale survey proposes. Also, it

would be positive that such VR applications for AD be effectively and reasonably adaptable to in-home and nursing home conditions. EdgardAfonsoLamounierJr, Alexandre Cardoso, Ederaldo Jose Lopes. [9] proposes an available interface, in light of Augmented Reality procedures that utilizes discourse orders for various elements: time updates for taking medication, distinguishing proof of which medication to be taken, individuals' acknowledgment from photogrphis, among others Ran He,Jie Cao, Lingxiao Song,ZhenanSun,Tieniu Tan.[10]In this paper A warping procedure is developed to integrate the two components into an end-to-end deep network. A fine-grained discriminator and a wavelet-based discriminator are designed to improve visual quality. A novel 3D-based pose correction loss, two adversarial losses, and a pixel loss are imposed to ensure synthesis results. We demonstrate that by attaching the correction component, we can simplify heterogeneous face synthesis from one-to many unpaired image translation to one-to-one paired image translation, and minimize the spectral and pose discrepancy during heterogeneous recognition. Zaiye Yang, Wei Ge[11]In thisthe research paper suggests an improved model of facial recognition MTCNN based and integrated use of FaceNet method and LBP. The function described in this an article that uses LBP parallel FaceNet to enhance light Model strength consists only of MTCNN and FaceNet. Ahmed ElSayed, Ausif Mahmood, Tarek Sobh[12]This paper aims to show the impact of one of the modern algorithms in the field of excellent image to solve. Demonstrating the operation of Algorithm, various cases before and after 3D face alignment provided using images from the Labeled Face in the Wild(lfw) database. The resulting images are subject to testing in a closed area set the recognition protocol using high-level unlocked algorithms extracted features with size. High adjustment installation. The algorithm has led to significant improvements in recognition measure than recently reported results obtained from unattended algorithms in the same database.

III. METHODOLOGY

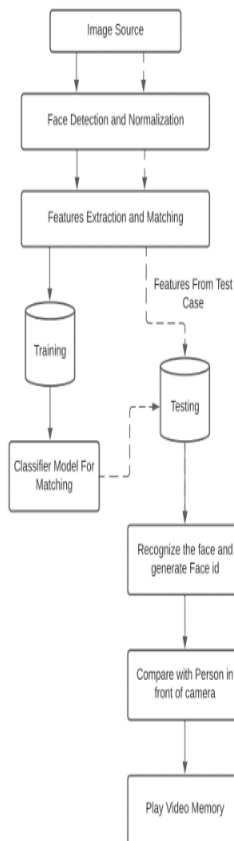


Fig 1: Block Diagram of Face Recognition

The Application takes the picture of the person with or without a patient from the update data feature and makes the unique face id of that person and also takes video memory of that person. When the application scans the person's unique face id through scanning, it directly plays a video memory of that person through the database. This is done by scanning the existing 'pictures' folder for internal storage. Next, analyze all existing images in the 'Photos' folder and save names of small indexes within 'images'. For the whole picture, collect connecting box links (like 'Rect') using MLKit. Trim the face in the photo (one from user storage) using connecting box links. Finally, we have a list of 'Bitmap' cut-off faces present in photos. Next, submit 'Bitmap' disconnected to FaceNet model and get embedded (such as 'Float Array'). Now, we build Hash Map<String, Float Array> object where we store small cached names like key and embedded as complementary values. The above procedure is only performed on app launch. The steps below will work independently for each camera. Using 'Image Analysis', we created a 'Frame Analyser' class processing camera frames. Now, with the framework provided, we begin by finding links to the bounding box (such as 'Rect') for all faces present in the frame. Cut out the face on the frame using these boxes. Feed the cut face to the

FaceNet model to make them embedded. We compare the embedding with appropriate metrics and collections of individual user forms. We count the average points in each collection. A collection with excellent points is our result. The final output is stored as a 'Predicting' also referred to 'Bounding Box Overlay' drawing boxes and text. The system will then display the final report as 'Fraud'. In the proposed system, the user can also detect the viruses available in the specific application where the user will have to choose the file path of that application and by clicking on the initiate scan button, the system will then scan that application and check for any of the viruses that are available in the application. If after scanning a virus gets detected, the system will display the message as 'Virus Found' or else the system will display the message as 'No Virus Found'. So, with the help of this methodology, the system will detect whether the application is fraud or genuine and also whether there is a virus in the application.

IV. RESULTS

1. Home Page:



Fig 2: Home Page

Fig 2 is the home page that includes that shows all the features of the android application i.e. Reminder, Locate, Person Recognition, Update data, Geofence, Logout.

2. Reminder Feature:



Fig 3: Remainder Feature

Fig 3 shows user interface for medicine reminder when user clicks on medicine reminder button here user have to add medicine name dosage start date and end date to receive alarms.

3. Location Feature:



Fig 4: Location Feature

Fig 4 shows user interface while Sending the Location of patient to his/her kith and kins.

4. Scanning Feature:



Fig 5: Scanning Feature

Fig 5 that is Moderate App 1 is the Fraud app detection system page where user will paste the link of specific app for analysis.



Fig 6: VideoMemory of patient and kin

Fig 6 shows video memory being played after the face id of the person in front of VR is matched with face id of kin of patient from database through face recognition feature.

5. Geofence Feature:

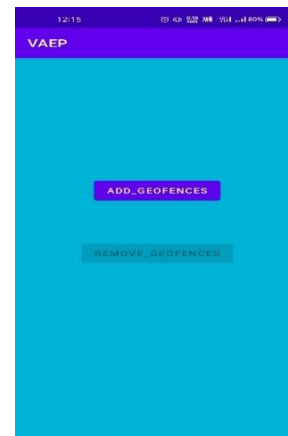


Fig 7: Geofence Feature

Fig 7 that is UI of Geofence Feature which restricts the patient from going above 30 meters away from the care taker. We can also off the Geofence feature whenever needed.

V. CONCLUSION

The proposed method is to develop a system which will assist the care taker of the patient with mci and also help the patient in daily life activities although We cannot help person with major dementia or Alzheimer but we can assist person with mci making app similar to real life experience of person, him/her being able to scan the person in front of camera and able to recollect the memories which will assist in recognition of his kith and kins,alarms for basic works and medicine remainder to make patients medical dosages on time, care taker being able to locate the patient while traveling through geofence through all these features of application user can perform daily life activities on his own up to some extent so the they can live blissful rather than being confused.

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