

**SMART MIRROR SYSTEM USING INTERNET ON THINGS**Mayur Wani<sup>1</sup>, Prof.Prashant Ahire<sup>2</sup>

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**Abstract** — Smart appliance designed with multimedia system intelligence to produce comfortable, convenient, and secure personal services in home becomes progressively necessary within the era of knowledge communication technology. This investigation describes a novel style and implementation of an interactive multimedia mirror system, known as 'smart mirror.' the fundamental style of smart mirror is started with the glass that's to be used. Two-way glass may be a suggested kind because it lets the graphics on a show come back through clearer Mirror. Our lifestyle has evolved in such a way that optimizing time is that the most significant factor. Based on a user studies and model implementation, we present the event of the innovating appliance that comes with interactive services of information, ordered through a interface on a surface of the mirror. Our work is predicated on the concept that we all look into the mirror after we leave, therefore why wouldn't a mirror become smart. With the advancing technologies, sensible Mirrors can take the place of normal mirrors within the future days, providing each mirror and computer aided data services to its users. With Raspberry Pi Zero microcontroller cards onboard, the systems will connect with the web, take information from the web and may show the information on places situated on a mirror. In the scope of study, the developed intelligent mirror system includes a weather data, time and site info, current event data, user information taken from web services using Raspberry Pi three microcontroller card. The mirror will have human detection module and shall light once the user comes in front of mirror.

**Keywords:** Smart Mirror, Interactive services, Raspberry Pi Zero, Web services.

**I. INTRODUCTION**

Smart appliance designed during this world everyone needs a comfort life. Modern man has made-up completely different technology for his purpose. In today's world, individuals got to be connected and that they are willing to access an information merely. Whether or not it's through the tv or net, people need to learn and connected with the present affairs happening round the world. The Internet of Things suggests that interconnection via the web of computing devices embedded in everyday objects, sanctioning them to send and receive the info. The web of Things with its vast growth widens its applications to the living surroundings of the individuals by changing a home to smart home. smart house is a connected home that connects all kind of digital devices to talk each alternative through the web. Our life-style has evolved in such some way that optimizing time is that the foremost important issue. Our work depends on the thought that we've a tendency to all verify the mirror once we exit, so why wouldn't the mirror become smart. A standard approach for building a wise mirror is to use a major quality unidirectional glass, a LCD monitor, a frame to hold the glass and monitor, and an internet browser with python to supply the computer code options and drive the show. Smart mirrors arise from the transformation of a standard mirror into an interactive information show element with special interaction capabilities. The mirror surface is a suitable example of a natural interface as a results of it takes half in our way of life. Therefore, visual feedback interaction is obtained non-intrusively through this object. Throughout this sense, maintaining its initial usefulness, the surface of the mirror is converted into a natural interface used for the image of information. the use of technology has become another task on everyone's daily to do and do list. Technology need to mould to our schedule, not the other approach around that is where the great mirror set up originated. The great mirror arrange aimed to integrate technology seamlessly into people's lives by swing it where everyone's routine eventually collides, the hotel. The goal of the great mirror is to increase a user's productivity by saving their time. The great mirror provides a close to easy experience that allows sliding window management based High Utility Pattern Mining For Industrial use. The user to easily walk up and be greeted with information. This smart mirror aims to cut back and presumably eliminate the necessity for the user to form time in their daily morning or nightly routine to examine their laptop, tablet, or Smartphone for the info they need. The mirror will provide the information with little to no effort from the user with the goal of not being a burden that he or she should maintain. The mirror will do the thinking for the user. First, it will flip on by users command with a phrase like 'hello mirror' or the opposite phrase that user needs to feature. Then, it will search data for the user with the help of internet by browsing information like weather updates, temperature etc. The information would tend to the users in style of speech. No keyboards to undertake to stay dry and clean. The mirror provides common information most of the individuals check their smart phones or tablets for, like weather, news,

Twitter and schedules. this allows the users to browse, think, and arrange their day whereas making ready inside the morning or night. The mirror has got to be fun yet. It will offer music playback which can be controlled by their voice thus there is no need for a mouse or keyboard. The mirror is additionally used for many handicapped individuals and collectively it's easy to access for every individual. It's utilized in automobile industries and for health services to inform the prescriptions of the patients and put together way more applications is deployed pattern this smart mirror with multimedia intelligence.

## **II. LITERATURE REVIEW**

**Paper Name:** Smart Mirror E-health Assistant – Posture Analyze.

**Author:** Biljana Cvetkoska<sup>1</sup>, Ninoslav Marina<sup>1</sup>, Dijana Capeska Bogatinoska<sup>1</sup>, Zhanko Mitreski<sup>1</sup>.

Today there exist many different types of smart assistants and devices, such as virtual assistants, smartphones and wearables, which have a purpose to coordinate and optimize the daily activities of the people worldwide. The smart assistants' focus is mainly on basic human needs, e.g. browsing, scheduling, navigating and other similar activities. However, not many smart assistants are concerned with the human health overall. In this paper, we focus on the possibility of using a smart mirror to detect health issues. A new Smart health Mirror model is proposed, that consists of a smart mirror which works on its own algorithm and behaves as smart assistant. This proposed model uses face recognition authentication, posture problem detection, and proper posture guidance, followed with suggestions for preventive healthcare. The algorithm identifies the person's posture and carefully analyses the posture and body changes over time. The obtained results from the analysis satisfied our expectations by improving the upright posture of the tested individual by considerable rate. The benefit of the proposed smart algorithm is proven by the evaluation results, which improved with each new individual analysis.

**Paper Name:** SmiWork: An Interactive Smart Mirror Platform for Workplace Health Promotion.

**Author:** Oihane Gomez-Carmona, Diego Casado-Mansilla DeustoTech, University of Deusto Avda Universidades.

This paper presents the design and implementation of a multi-user smart mirror system conceived to promote wellness and healthier lifestyles in the work environment through persuasive strategies. By means of a RFID reader, the interactive mirror recognises different users through their personal corporate ID card, which allows them to have access to their personalized user-interface. The smart mirror provides workplace's indoor environmental conditions (thermal, humidity and light), personal physical exercise data obtained from wearable devices and general purpose information (e.g. weather and daily news). Additionally, motivational advice related to physical performance is supplied through request by applying speech-based recognition techniques. End-users can also inquire the mirror about their ranking position in a fair-daily competition that gives social recognition to the most-active-user. The implemented mirror has been evaluated in a one-week study conducted in the wild in the workplace premises. The quantitative data gathered throughout the study, as well as the qualitative users' feedback obtained in a post-trial focus group, provided promising findings for the acceptance and convenience of such a persuasive device in the work environment. Furthermore, valuable design-insights were obtained for future iterations of the smart mirror that encourage.

**Paper Name:** Building a Smart Mirror.

**Author :** Josep Cumeras i Khan Grau en Multimèdia Tutor: Raymond Lagonigro Vic, juny

This project has been developed within the context of a time where every day we see more and more connected devices. The Internet transformed our lives by connecting us more easily to information and other people in the virtual world. Mobile phones then became smartphones and since then this concept has erupted and morphed into the Internet of Things, things which connect us to everyday objects. There are no end of objects that could be made "smarter", some being more suited to this than others. Mirrors, for example, provide a large surface ideal for displaying information and interacting with. Most people have mirrors at home so the concept of a smart mirror that you can interact with is attractive and has been fantasized in many futuristic movies.

**Project Name:** DESIGN AND DEVELOPMENT OF A SMART MIRROR USING RASPBERRY PI 1.

**Author:** VAIBHAV KHANNA, 2YASH VARDHAN, 3DHRUV NAIR, 4PREETI PANNU.

This paper presents the design and the development of an interactive multimedia futuristic Smart Mirror with artificial intelligence for the ambient home environment as well as for commercial uses in various industries. The project which would collect real world machine data and the data would be transmitted from the machine and would be managed by the

Raspberry Pi. The Smart Mirror implemented as a personalized digital device equipped with peripherals such as Raspberry PI, microphone, speakers, LED Monitor covered with a sheet of reflective one way mirror provides one of the most basic common amenities such as weather of the city, latest updates of news and headlines and local time corresponding to the location. Using speech processing techniques the Smart Mirror therefore interacts with the user through verbal commands, functions and listens to the user's question and responds them adequately.

**Project Name:** Smart Mirror: A Reflective Interface to Maximize Productivity.

**Author:** Piyush Maheshwari , Maninder Jeet Kaur, Sarthak Anand.

There is no end of objects that could be made "smarter," some being more suited to this than others. Mirrors, for example, provide a large surface ideal for displaying information and interacting with. This paper depicts the design and development of a smart mirror that represents an elegant interface for glancing information for multiple people in a home environment. Face-recognition based authentication is used to detect the user. It provides a webpage based interface to access data feeds and other services. The data feeds use web service based communication to extract data packets available through various APIs offered by websites. All the computing required for this project is done by a Raspberry Pi 3 computer along with a webcam used for face detection and a LCD panel placed behind the mirror to display the interface.

**Project Name:** IMPLEMENTATION OF MAGIC MIRROR USING RASPBERRY PI 3.

**Author:** 1Suryansh Chandel, 2Ashay Mandwarya, 3S.Ushasukhanya.

This paper describes the designing and implementation of an voice controlled wall mirror, called "Magic Mirror". It is a device that can function both as a mirror and an interactive display displaying multimedia content such as time, date, weather and news simultaneously. The user can interact with it using voice commands. The Magic Mirror consists of various functionalities like real time data and information updates, voice commands, face detection/recognition using LCD monitor, microphone and webcam. The user can interact with magic mirror using voice commands.

## **II. EXISTING SYSTEM**

The projects almost like the smart mirror project covers an oversized spectrum of practicality and functions. There were considerably additional projects than actual product. Some blame is placed on a fact that the good house is still an rising market and restricted by the value of producing keeping the product out of reach from the everyday consumer. The actual fact was that there have been additional projects shows the interest in developing more cost-effective and useful good mirror. Although, the particular product developed by the corporate delivered on options, they were either still in development part or already priced too high to be thought of the viable competitor. many efforts are made following the objective of adding special capabilities to mirrors, each business and research-based approaches. However such systems are unfeasible to implement such applications in a very commonly thanks to large area requirement.

## **III. SURVEY OF PROPOSED SYSTEM**

The proposed smart mirror system aims to provide users with an interactive interface for simplified and personalized services in the comfort of the user's home. It is a smart and user friendly solution presented in the form of a mirror that also acts as a gateway to interactive services, particularly those of information oriented nature, such as multimedia and news feed among others. Hence, the proposed system allows users access to customizable services, all while they are performing other tasks (i.e. grooming). As such, it serves as a convenient time-saver.

### **ADVANTAGES OF PROPOSED SYSTEM:**

- The system act as an interactive mirror interface.
- Distinguish between all users and provide the corresponding customized services.
- Allow for custom user profile management where the user creates his/her own profile that is to be stored on the database server of the proposed system.
- The Magic Mirror dashboard shows the weather, calendar you choose, current time by using python tools.
- This product would be useful for busy individuals that want to multitask and stay informed while on the go.

## V. SYSTEM ARCHITECTURE

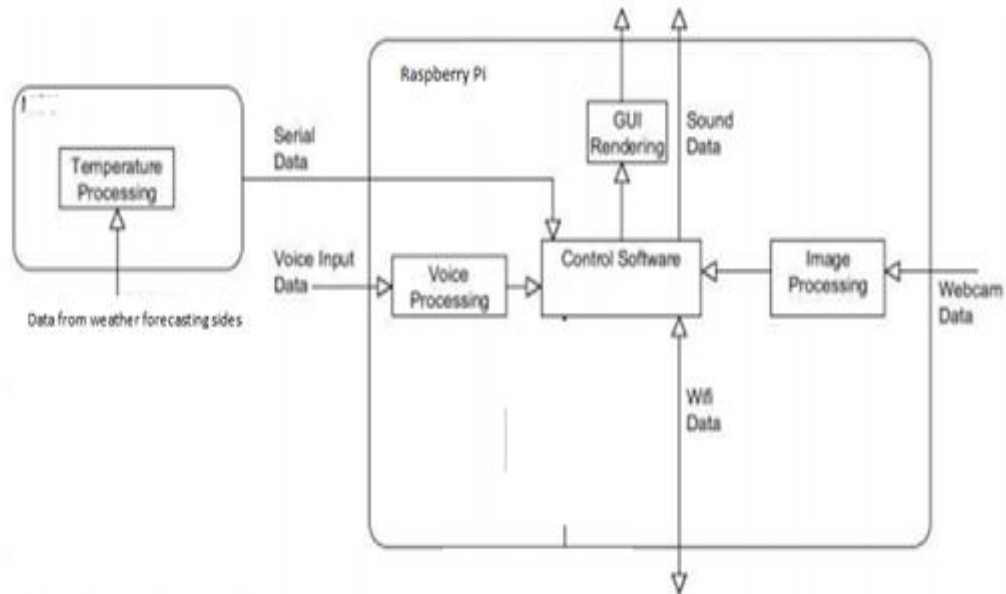


Fig.: System Architecture

## VI. CONCLUSION AND FUTURE WORK

Thus it's a smart and user friendly solution given within the type of a mirror that additionally acts as a entrance to interactive services, significantly those of information orientated nature, like multimedia system and news feed among others. Multiple tasks may be displayed at a time simultaneously. So, it'll be user Friendly. A futurist sensible mirror system that has data like time, date, correct temperature and humidness, and latest news whereas trying and grooming in front of mirror, additionally helps in fraud detection.

### Future scope

This is mainly used for controlling energy usage, organizing daily human routines. One of the important application of the proposed smart mirror is to track health over time.

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