

MAGIC MIRROR

Ujjawal Srivastav, Shivam kumar, Aman Jha, Priya Saini, Meenu verma, Ratan Priya, Shruti sharma

E-Mail Id: shruti241sharma@gmail.com

Department of Computer Science and Engineering, AIET, Jaipur, Rajasthan

Abstract- The Smart Mirror concept depicts the concept of a smart gadget. A smart mirror is primarily intended for use in the homes. Because of high price and hardware constraints, smart mirrors really aren't commonly used. The planned smart mirror would be controlled by a Raspberry Pi & connects to the outside world via the internet. Raspberry Pi, LED display, speakers, microphones, two-way mirror, & acrylic glass would make up the smart mirror. The mirror can connect with both the user via voice commands & reply accordingly using speech recognition API. The Smart mirror can display basic information such as the date, news channel, and climate. Smart Mirror would be able to do various advanced functions, including such Smart Home. The client will have an amazing experience with such an artificially intelligent mirror.

1. INTRODUCTION

Heterogeneous computing systems having wireless connection embedded in ordinary things are being utilized in a variety of activities to provide a unique experience [1]. Interactive computers, speech technology, & machine intelligence are making life easier in a safe and comfortable manner. Every home has a mirror, & we examine ourselves in it every day to see how we appear [2]. The proposed system is a smart mirror that combines smart connected devices & technologies with integrated intelligence to provide additional features like time, entertainment, climate, & map display. This mirrors will aid in the development of smart homes & give consumers with a unique atmosphere [3].

2. LITERATURE REVIEW

An magic mirror relying here on Raspberry Pi is created again for Internet of Things home in this study [4]. The host controller for the intelligent mirror is indeed a Raspberry Pi. In such a functional state, the Raspberry Pi system which is connected to both the internet through WIFI and obtains weather prediction information from either the API network interface defined dressing index, time, date, as well as other parameters, which is then shown on the plasma display. The user may engage only with mirror by asking it questions such as the climate, weather, or times, as well as the mirror will automatically collect and disseminate the relevant communications system. The proposed intelligent mirror has the following benefits: compact size, easy operation, low price, and a wide range of applications. The drawback of this type of mirror is that this does not enable gesture control, which would make it more engaging [5].

The smart mirror system suggested by Lakshami N M, Chandana M S, and Ishwarya P is interface for glanced data that may also be utilised for thief detection in a residential context. A intelligent mirror is a mirror with added capacity of showing date, location, climate system, and weather information. To create a successful mirror that can collect internet news & display it by using IoT circuits, as well as to identify a burglar while no one is home.

This article is primarily concerned with the connectivity & improvements that will occur between the mirror and the internet. These systems, which can connect to the internet and acquire data from the internet, can present this information on the areas situated on the mirror, thanks to the microcontroller cards on-board [6].

The created smart mirror system combines weather updates, time & location data, relevant news data, personal data, & camera picture acquired from online services utilizing the Pi 3 microcontroller cards, according to the research. Speech commands could be used to operate some devices through the intelligent mirror's mic. Intelligent Reflect, a software system for building smart mirror application, was created as part of this research. Smart Reflect has three major features:

- it is modular, lightweight, and extendable;
- it allows developers to bypass web browsers' sandboxed environments; and
- it accepts plugins produced in any programming language.

These enhancements address the equipment / software constraints that come with using web services as that of the primary context sensitive display mechanism. They discuss the concept and development of Smart Reflective in this article, as well as compare it to other similar platforms [7].

Proposed System

Diagram of Smart Mirror Blocks Once attached to the network, the intelligent mirror picks up as well as demonstrates the information needed inside the user's appearance. All of that Raspberry Pi 3 B+ is used throughout the proposed model, which has 1 GB SDRAM, continues to run mostly on Linux system, as well as requires 700mA. A single-sided mirror hangs on the wall mostly on LCD screen, which can function as a frequent mirror since there has been no light behind it and also as a glass panel through which information is displayed. Whenever the user actually stood in front of the mirror will the customized knowledge be displayed? To recover updated information from web sources, different data feeds, including such RSS feeds, are used.

And use the Calendar App API as well as the Climate API; you can obtain your personal upcoming event as well as the most recent weather reports. For the purpose of displaying this useful information.

3. IMPLEMENTATION

We intend to design and implement a futuristic smart mirror which will provide the consumer with an entirely new knowledge with the flavour of AI. Our screen mirroring design includes a two-way mirror, polyvinyl acetate, a monitor (LED), a Raspberry Pi, Raspberry Modules, and sensors. A made of wood frame will indeed be built, with LEDs attached while behind glass, housing all of the sensing devices as well as the Raspberry Pi. This same raspberry pi is powered by the power supply, which also powers the LED monitor as well as sensors. When first activated, this same mirror will communicate to the docker, which contains all or most of the API and software required to run this same mirror.

When activated, this mirror would then display this same calendar, weather, and news headlines for the current year. The jarwish API, which responds to either the user's sound, will be included in the docker. The mirror may be capable of facial recognition, which will be accurate and robust image zoom in or out. This will be accomplished with the assistance of OpenCV and also some java programming. This same software will indeed be implemented in java, python, and Node.js, with js serving as that of the server-side programming language. The additional technologies of the traffic signal mirror will be discussed in the V segment of the above report.

The proposed smart mirror will carry out the following functions:

- A standard two-way mirror but also acrylic glass will show a live image.
- When activated, mirror will reflect the actual weather, time, and news.
- If a person approaches the mirror, it will automatically go to sleep.

4. PROJECT INPUT AND OUTPUT

The outcome is often generated by the assistant, and we use as input via voice commands. The outcome and input created by the smart mirror is also shown in graph form thanks to the assistant's analytics feature. The smart mirror generates output in the form of voice and text features. The output primarily contains the basic features of a smart mirror such as weather, period, calendar, holidays, and so on. The output is often produced by the assistant, which we use as input via voice commands. The output as well as input generated by the smart mirror is also shown in graph form thanks to the assistant's analytics feature.

Everyone's smart mirror receives input primarily through voice commands, which it listens to something and responds to. Establishing a reminder, assignment, meeting, whilst using its assistant to view photos through mirror, photos that are synced with the user's Smartphone, are among the task.

CONCLUSION

A face detection system has been implemented in many existing systems. It is a novel approach to developing a smart interacting system. In this integrated environment, the system is dependable and simple to use; we have already been focusing on an integrated environment for the household. There are numerous advantages to using a smart mirror. For both the development and implementation of the different services, system architecture was adopted, with the mirror interface as well as news continues to feed all utilizing Web service communication mechanisms. We could indeed reduce power consumption by using a sensor because the mirror will only display information when a human is present.

FUTURE SCOPE

The future prototype has a lot of potential and is likely to be functional. Push notifications are used to switch among both views, as well as gestures are used to communicate with the content. Rather than being limited to a house, we can apply this same functionality to a glass material. As a result, this can have a wide range of applications, such as adding this features and functions to a glass coffee table used in the office. This will allow him to be aware of notifications from a variety of sources.

The goal of this research is to create an efficient and cost-effective viable alternative for the advancement of a Smart Mirror that will reduce, if not eliminate, a need for the user to make part of people's every day morning or late night predictable to confirm their PC, tablet, or mobile phone for both the information they need to make. The mirror will provide the documentation with next to no effort from of the user, with both the objective of not becoming a burden that he or she must maintain. The reflector would not be a new activity, but rather an enhancement to the existing one.

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