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Smart Mirror

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Introduction

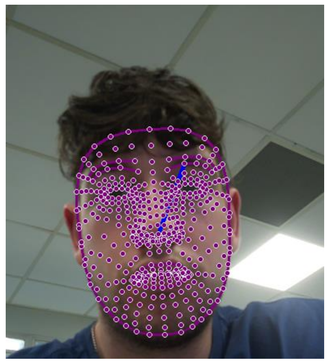
Studies show that the average person spends, one-sixth of their lifetime looking in the mirror. Why not make this time more useful.

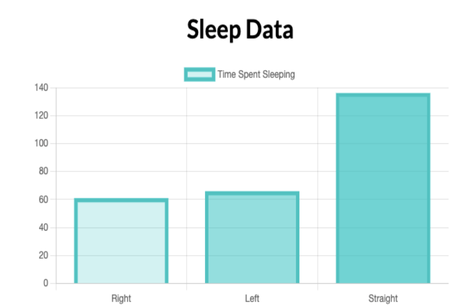
This Smart Mirror can help multitask and save time. The user can add notes and tasks that need to be done through-out the day. Check weather forecasts and more.

With a built-in camera, the Smart Mirror uses facial recognition to monitor sleeping patterns. The user can improve sleep and well-being by consistently monitoring the Smart Mirrors feedback.

How it Works

An LED display is placed behind a one-way mirror. The one-way mirror enables the user to see both themselves and the LED display at the same time. This is achieved by using a glass panel with partially reflective coating. A RaspberryPi powers the LED display and hosts a web page. The webpage displays data and notes stored on MongoDB Atlas. A pi-camera module uses face tracking and MediaPipe to monitor the user's sleeping patterns. A weather API is used to help document the weather to the user.





Build

- Wooden Frame
- One-way Mirror
- RaspberryPi
- RaspberryPi Camera

Technology

- Python
- MediaPipe
- Node.js
- Next.js
- MongoDB

MediaPipe

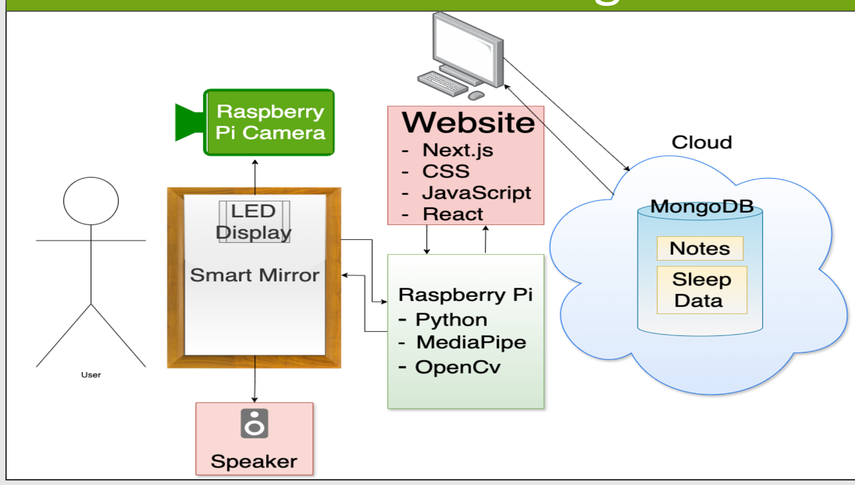
MediaPipe is a framework by Google used for image processing.

I use MediaPipe to detect faces. Once a face is detected, landmarks are drawn on the face and connected. The landmarks are used to get the users facial co-ordinates.

With these co-ordinates, the user's facial detection can be recorded.

Mirror

Architecture Diagram



Features

- Add Notes
- Check Weather
- Monitor Sleep