

Project Part 1

Introduction:

There is no doubt that every person in the world wants to be secured by any technology in order to ensure that everything is fine. Those who have to work outside their house, in particular. They will not be able to be comfortable if they have expensive stuff. Gold, money, an expensive TV or whatever they care about.

Technology provides you with the greatest option to securing your property, as well as the ability to see who is standing in front of the door. Wherever you are and whenever you want.

Content:

Security has always been an important issue in the home or office. Consequently, we have chosen IoT, specifically smart doorbells. This is owing to, apart from keeping house owners and their belongings secure from attackers, a remote home security system has many other advantages. The Internet of Things (IoT) is a network of interconnected items (physical gadgets, automobiles, household appliances, and so on) that communicate data via electronics, sensors, and other means. Home systems are now integrated with computing and information technologies, giving them intelligence and smarts. Because doors serve as the entrance to our houses, they must be made more secure. Bare-metal locks and various smart locking systems are currently available mechanisms for giving safe access to doors. The performance of the smart locking system may be measured in terms of identification accuracy, intrusiveness, and cost. We present the concept of providing secure access to one's house in this project. It will be accomplished through the use of a smart doorbell, which is a less expensive alternative to its present equivalents. Our solution uses a nano-computer to link WiFi-enabled devices to a Firebase server, allowing users to answer the door when the doorbell is pressed. It learns to recognize new users by utilising face recognition as a unique identifier to verify their identification. One such application domain for video analytics is camera-based smart doorbell systems, which have a plethora of commercial products on the consumer market. Existing solutions, on the other hand, are expensive, monolithic, and proprietary. There will also be a compromise between precision and portability. To solve the aforementioned issues, I propose a distributed framework for video analytics with a smart doorbell system as a use case. The suggested framework is based on AWS cloud services, and the system was implemented on a low-cost nano-computer to fulfil the price affordability limitation. The most potential clients known are people who have houses, especially those who store valuable stuff inside them, businessmen as well, because usually they are being targeted for their wealth and properties, in addition to any person who works outside his home.

Group 10:

Mohamad Noureedine (A21EC4012)

Ahmed Marwan Abdulmalek Ali (A21EC4001)

MOHAMMED HUSSEIN SALEH BA ABBAD (A21EC4015)

Architecture:

This project will be relatively cheap for its huge benefits because of the great design behind it. The main piece of the design is the nano-computer or what we call a raspberry pi, you can say that it is a small sized computer, but of course it will be programmed specifically to accomplish its purpose, this raspberry pi will be connected to the internet using Wi-Fi or a cable in the wall, depends on what the owner prefers. The internet then will connect the system to our server which is constructed by AWS and uses a couple of the services for security purposes, The database in this server will store the faces of people who ring the bell and using a simple AI it will recognize new faces. All that is done using a cheap low end camera that won't be good for photographers but will get the job done for our project and.

Conclusion:

Like any technology new to our life contain pros and cons. The Smart Doorbell is a device that can be used to control and monitor security cameras in your home. It works seamlessly with a smart home automation system. Also it helps us in a way of safety that maybe wasn't before by this technology. We can improve our life and help to resolve a lot of issues which face us in our life like the smart doorbell but take care. Notwithstanding we have the right to protect our property provided we are aware of the limitations on the scope and extent of the camera's view which should be restricted so that it only records the area within the user's own property. which we can't depend only on it to solve our issues if so maybe our life be in dangerous like we built our humanity history by using it but we also should take care to continue.

Group 10:

Mohamad Noureedine (A21EC4012)
Ahmed Marwan Abdulmalek Ali (A21EC4001)
MOHAMMED HUSSEIN SALEH BA ABBAD (A21EC4015)
AMR HATEM ZIDAN (A21EC0251)