

**SMART HOME WITH FACE RECOGNITION BASED DOORLOCK AND GESTURE  
CONTROLLED APPLIANCES**

**ABSTRACT**

Home Automation has gained popularity not only as a luxury but also because of the numerous advantages it has. It is especially useful for senior citizens, handicapped and children with disabilities. Another issue that we face today is home security. The door lock often fails to provide the required security. This project proposes a system to make our homes smart as well as secure. The security feature is achieved with a door lock system based on face recognition and home automation by controlling appliances with gestures. The door lock can be unlocked only if the face of the person trying to access matches with the image in the database. It also designed to detect and identify person under different illumination and poses (head orientation of upto  $\pm 45^\circ$ ). And any attempt of unauthorized access is notified to the owner via a text message. Automation is achieved by using gesture recognition for control of appliances, wherein the various appliances are switched ON/OFF by predefined hand gestures (which are recognized by the microcontroller) using a wearable device.

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