

AI ENABLED SMART DOOR FOR IDENTIFYING PERSONS WITH SMS NOTIFICATIONS

AIM:

Design development of AI Enabled smart door for identifying persons with SMS notification.

PURPOSE:

This paper presents the design and implementation of an AI-enabled smart door system capable of person identification, with the additional functionality of SMS notification. In today's context of increasing security concerns and the need for seamless access control, this technology offers an innovative and efficient solution for recognizing authorized individuals and notifying homeowners or administrators about entry events. The smart door system harnesses the power of Artificial Intelligence (AI) algorithms, particularly Convolutional Neural Networks (CNNs), to process live video streams and identify persons approaching the door. The CNN model is trained on a comprehensive dataset comprising diverse images of individuals, captured under various lighting conditions, angles, and poses, ensuring robustness and accuracy in person recognition.

DESCRIPTION:

Arduino uno interfaced with ESP32 cam with UART port. GSM modem (SIM800C) also connected to another UART port.

WORKING:

This system installed at door step to detect humans. If any human detected by the camera it will send commands to Arduino Uno. There are other kind of human presence systems like PIR and proximity sensors. But sensor based human detection is not accurate and not suitable in every time. Vision based human detection is more accurate and can classify images. Arduino sends SMS to authorized mobile number when it detects human presence.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino uno controller
Crystal	:	16 MHz
LCD	:	16x2 LCD display
GSM	:	SIM800C
Buzzer	:	5V DC
Camera	:	ESP32 camera
Power Source	:	12v 1 amp DC adaptor

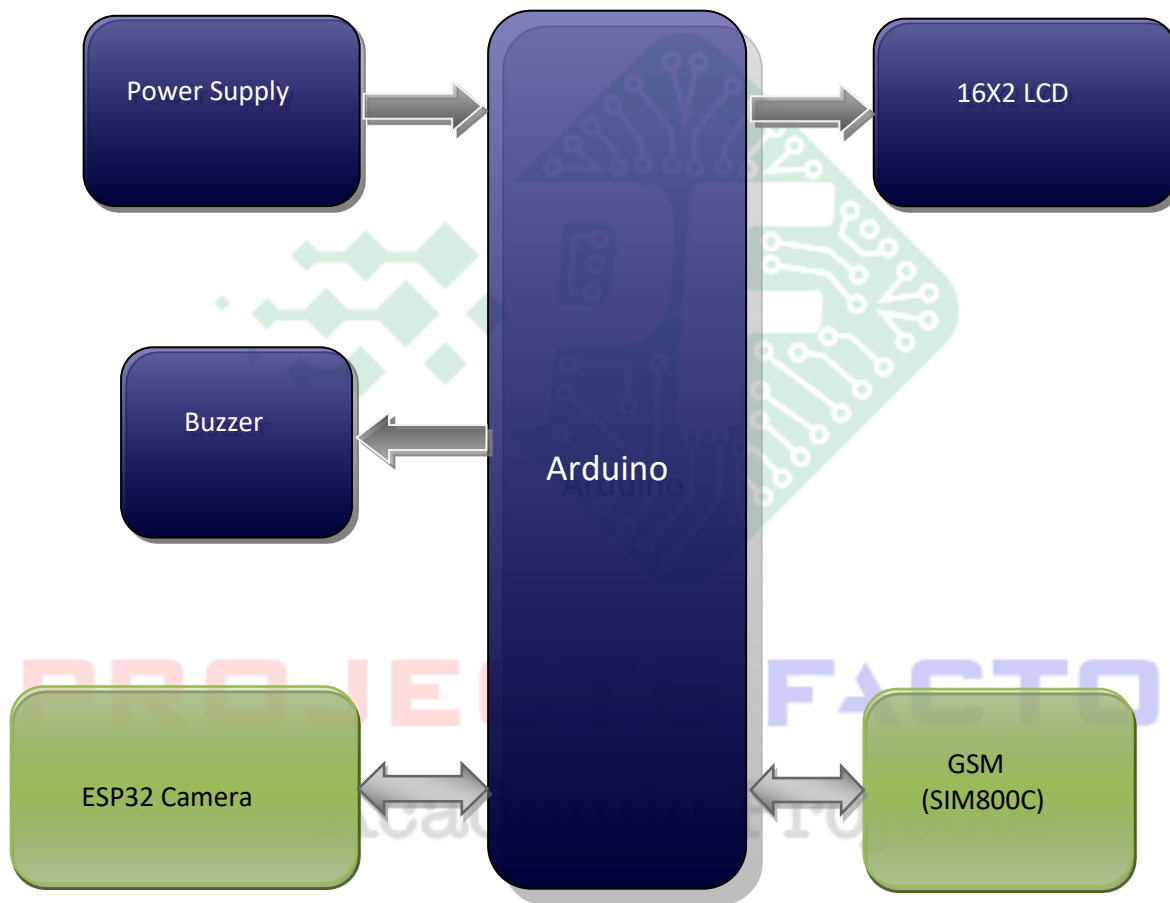
SOFTWARE:

Arduino IDE
Proteus based circuit diagram

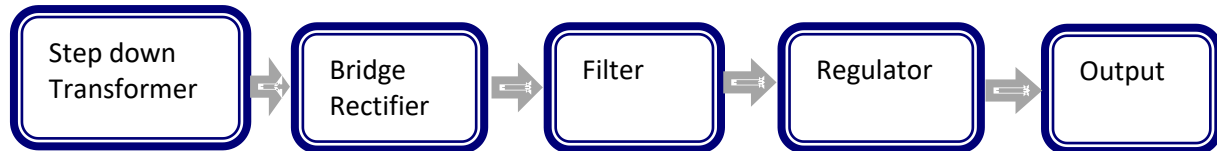
APPLICATIONS:

- Security systems
- AI enabled smart surveillance system
- Smart security door system
- AI enabled Door bell system

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERED:

- We have covered Arduino uno controller programming and interface
- ESP32 cam and GSM (SIM800C) programming

PROJECTS FACTORY
Academic Projects