

3. System Design

The Smart Surveillance System is designed to be a modular system that can be easily integrated with existing surveillance systems. The system consists of two main components: the hardware and software components.

Hardware Component

The hardware component of the Smart Surveillance System consists of a network of cameras and sensors that are placed in strategic locations to monitor and track movement. The cameras and sensors are connected to a central processing unit that performs the analysis of the data collected. The system also includes a power backup to ensure uninterrupted operation.

Software Component

The software component of the Smart Surveillance System is responsible for the analysis of the data collected by the hardware component. The software includes advanced algorithms for motion detection, contour detection, and real-time people tracking using YOLOv3. The system also includes a user-friendly interface that allows end-users to monitor and track movement in real-time.

The software component is developed using Python programming language, OpenCV library, and YOLOv3 pre-trained model. The system also includes a database for storing and retrieving data. The software is designed to be easily integrated with existing surveillance systems using standard protocols such as RTSP and ONVIF.

System Workflow

The Smart Surveillance System workflow includes the following steps: