Raspberry Pi system is more cost-effective, has superior resolution, and has lower power consumption compared to the previous systems.

In this paper we are using a PIR sensor for motion detection and a Raspberry Pi camera for capturing photographs of intruders. When motion is detected by the PIR sensor in the room, the camera captures an image and saves it temporarily in the Raspberry Pi module. It then sends an email notification to the user with the associated image upon recognizing motion. This system provides an advanced method for detecting theft and is suited for many applications such as bank locker rooms, tiny personal areas, surveillance in homes/offices, and parking entrances. Fig. 1 shows the experimental setup. Fig. 2 shows email notification after motion detected with image of intruder.

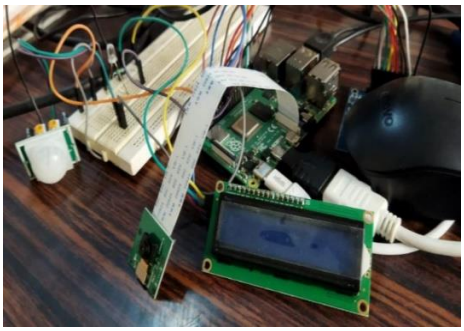

Fig. 1. Experimental Set up

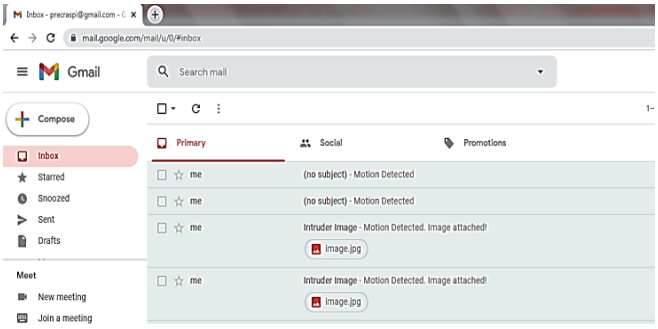

Fig. 2. Email notification with image

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IoT-BASED WEARABLE DEVICE FOR CONTINUOUS INFANT HEALTH MONITORING WITH AI INTEGRATION

Associate Professor Tushar H. Jaware[1], Principal & Professor Dipak P. Patil [2],
Associate Professor Ravindra D. Badgujar[1], Associate Professor Mahesh B. Dembrani[1],
Research Scholar Jitendra P. Patil[1]
[1]E&TC Engg, R C Patel Institute of Technology, Shirpur, India
[2]Sandip Institute of Engineering and Management, Nasik, India

This paper addresses the global challenge of infant mortality, where nearly 3 million infants succumb to health disorders within their initial month of life. The inability of infants to articulate their distress necessitates continuous monitoring, as traditional periodic check-ups fall short in predicting and preventing potential illnesses.

A significant hurdle in existing wearable infant monitoring systems lies in the accuracy and consistency of health information. Many wearables lack scientific validation, raising concerns about their safety and efficacy in healthcare applications. This paper emphasizes the need for producers to substantiate the safety and efficacy of their products through peer-reviewed scientific research.

The proposed solution involves developing an IoT-enabled wearable device, specifically a wristband, for continuous infant health tracking. This device assigns a Unique Identification Number (UIN) to each infant, ensuring secure access to health data by healthcare professionals and parents through various applications, such as web and mobile interfaces.

Key project objectives include a comprehensive review of existing wearable health monitoring systems, the design and implementation of an intelligent AI & IoT-enabled wristband, the creation of a decision support system for healthcare professionals, and the advancement towards a paperless healthcare system through the development of smart next-generation medical devices.

This project envisions a technological innovation in infant health monitoring, promoting a shift towards a proactive and preventive healthcare approach. By leveraging AI-based analytics and real-time data synchronization, this wearable device aims to predict and prevent life-threatening illnesses, ensuring infants receive timely and appropriate medical care. The emphasis on privacy through encryption and authentication methods addresses ethical considerations associated with handling sensitive health information. The ultimate goal is to contribute significantly to reducing infant mortality rates and improving the overall quality of healthcare for infants on a global scale. Fig. 1 shows the proposed system architecture.

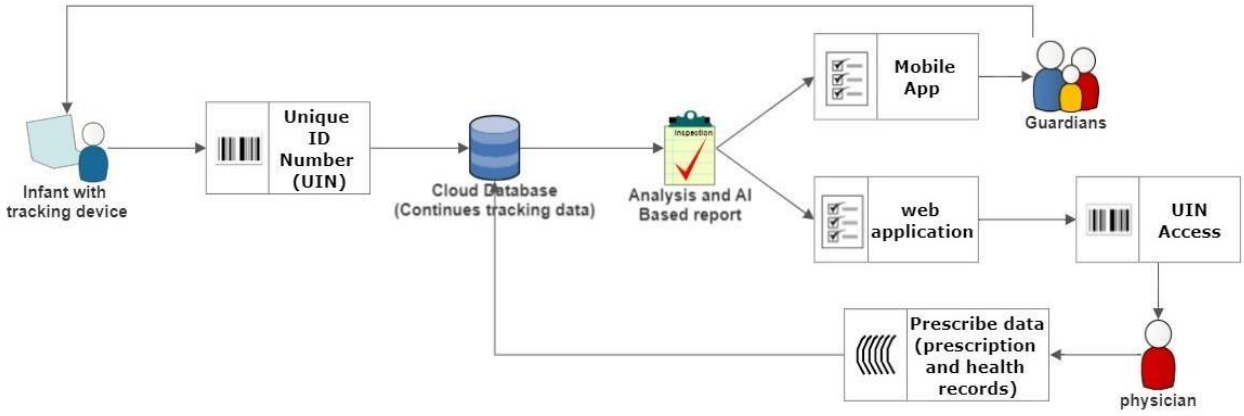

Fig. 1. Architecture of proposed system

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