Wild Animal Intrusion Detection and Alert System

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Abstract:

Wild animal intrusion poses a significant threat to human lives, agricultural resources, and property, particularly in rural communities bordering forested areas. This hardware-based project addresses this critical issue by developing an Internet of Things (IoT) enabled wild animal intrusion detection system for agricultural farms and human settlements. The chosen IoT approach leverages the power of interconnected devices for real-time monitoring and communication, offering a proactive solution compared to traditional methods. This system utilizes an Arduino Uno microcontroller interfaced with a Passive Infrared (PIR) sensor at the transmitter end to detect animal movement. The detected presence is wirelessly transmitted using Zigbee modules to a receiver unit located within the village. Upon receiving an intrusion alert, the receiver activates a local alarm consisting of a buzzer and a red LED to immediately warn villagers of a potential threat. Simultaneously, a GSM 800L module is employed to send an SMS notification to the village administrator, facilitating a timely and coordinated response. The integration of these hardware components and communication technologies provides an efficient and cost-effective solution for early detection and mitigation of wild animal intrusions, thereby minimizing losses and enhancing the safety of forest-fringe communities.

Keywords: Wild animal intrusions, GSM technology, Zigbee,Arduino Uno, PIR sensor