ML & IOT Based Child Monitoring & House Protection System

Ahmed, Umair (School: Fazaia Inter College Jinnah Camp)

Children's safety near fire or heat sources is a significant concern, as their presence poses a high risk of accidents and endangers their well-being. Additionally, gas leakage, particularly from Liquefied Petroleum Gas (LPG) and Natural Gas (Methane CH4), is a major issue in residential premises, industrial sector etc. In this study an innovative system is discussed that combines Machine Learning (ML) and Internet of Things (IOT) technology to revolutionize home safety. This system is comprised of a gas sensor, relays, camera, microcontrollers, LCD screen and buzzer to detect and monitor gas leaks and avoid child burning incidents in home environments. When a child is detected within the range of a fire hazard by the ML-Object detection model, the system then provides advance warnings and activates safety actuators to ensure protection. In addition, when the gas leakage is detected by the gas sensor then it sends a signal to the microcontroller which then activates the safety measures to minimize the risks. The system is also equipped with an IOT platform that enables remote monitoring and control of the system. This system offers a reliable, cost-effective and efficient solution for child burns and gas leaks. With its cutting-edge technology and advanced features, this system is set to revolutionize the way home gas risks are detected and managed.

Awards Won: