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Hardware Implementation Implementation of a Low Cost IoT Enabled Low Fire Detection System for Local Urban Markets Using Fuzzy Application Methods

Abstract:



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The lack of reliable low-cost early warning fire detection systems deployable within the local urban markets of East Africa has culminated into serious catastrophic fire accidents leading to the destruction of both property and human life. The proposed satellite systems are quite expensive to acquire and maintain for least developing nations. Meanwhile, unit sensor smoke detectors are unreliable and highly sensitive to false alarms rates. Thus, the paper proposes a low-cost IoT enabled fire detection system using a fuzzy application method for effective decision making in reliable fire control systems. A hardware prototype is implemented using Arduino Uno Board, integrated with Arduino IDE and fuzzy logic, an informed true fire status decision is determined. The proposed solution ensures protection of the market community through providing early warning notification mechanisms as a means of public fire safety protection for impending fire outbreaks. Obtained results show that the proposed IoT based fire detection hardware prototype exhibited an accuracy rate of 91%

Seminar date:

Thursday, 08th July 2022

Time:

10:00-11:00 am

Mode:

Virtual