ABSTRACT

The Hazardous Gas Detection System presented in this project aims to enhance household safety by deploying an intelligent and efficient gas detection solution. The system integrates cutting-edge sensor technology, data analytics, and wireless communication to provide real-time monitoring and early detection of hazardous gases in our surroundings. The core components of the system include a network of advanced gas sensor MQ-6 capable of detecting a range of hazardous gases. These sensors continuously collect data, which is processed by a central control unit utilizing state-of-the-art algorithms like threshold and ANN Based algorithm ,pattern recognition & bayesian networks for accurate and rapid gas identification .The collected data is transmitted wirelessly to a central monitoring station, allowing real-time surveillance of the home. In the event of a gas leak or abnormal gas concentration, the system triggers immediate alerts, enabling swift response measures to mitigate potential risks. Furthermore, the system incorporates machine learning techniques for predictive analysis based on historical data. This proactive approach enhances the system's ability to anticipate potential gas-related incidents, thereby reducing response time and improving overall safety measures .The implementation of the Autonomous Hazardous Gas Detection System not only provides a reliable and comprehensive solution for gas monitoring but also contributes safety measures. By mitigating the risks associated with hazardous gas exposure, the system plays a crucial role in safeguarding the well-being of family members.The project signifies a significant step towards creating smarter, safer, and more resilient environment through the integration of advanced technology in gas detection and monitoring.