IoT Based Smart Helmet for Industry

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Abstract: *The mining industry, a vital contributor to global economic growth and infrastructure development, grapples with inherent safety challenges posed by hazardous environments and unpredictable events. In response to these concerns, this abstract introduces the "Smart Helmet for Air Quality and Hazardous Event Detection" – a groundbreaking technology tailored specifically for mining. This advanced helmet integrates sensors like the MQ3 gas sensor, temperature and humidity sensors, LED lights with automatic controls, and a GPS module. Real-time data from these sensors are transmitted to an IoT platform, enabling continuous monitoring and immediate alerts. Traditional safety measures, including personal protective equipment and periodic monitoring, fall short in addressing the dynamic conditions of mining environments. The Smart Helmet offers a comprehensive solution by providing continuous air quality and environmental monitoring, coupled with automatic lighting and location tracking. This innovation marks a paradigm shift in mining safety, addressing the urgent need for proactive measures to safeguard the well-being of miners in the face of persistent safety challenges.*

Keywords: Safety, Sensors, IoT, Smart Helmet, Air quality monitoring

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