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IoT Integration in CNC Machine for Production Rate Monitoring

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Abstract: *In the era of Industry 4.0, integrating and implementing Internet of Things (IoT) technologies into manufacturing processes is critical for increasing efficiency and reducing machine failures. From last 15 years, Internet of Things (IoT) is the main application which is extended from smart connected homes to wearable to healthcare. Industry 4.0 is the recent revolution in the industry. It contains cyber-physical systems(CPS) monitor the production and manufacturing process of the factory and make independent decisions. In a wireless sensor network, the sensor senses the data from the device and that collected data will be sent to the router. That Sensor may be different as per its applications. As So many devices will be connected to the Internet of Things(IoT), it will generate massive data. To extract hidden information from the generated data we have to apply different types of algorithms. A large amount of data can be monitor and controlled with the use of Wi-Fi, internet of things (IoT), cloud computing (CC) This study addresses the lack of real-time monitoring systems in CNC machines. In this study, the ESP32 microcontroller has used as primary data acquisition and transmission units. Data is collected using advanced sensors such as the Inductive Sensor for the live count. From last 15 years, Internet of Things (IoT) is the main application which is extended from smart connected homes to wearable to healthcare. Industry 4.0 is the recent revolution in the industry. It contains cyber-physical systems(CPS) monitor the production and manufacturing process of the factory and make independent decisions. In a wireless sensor network, the sensor senses the data from the device and that collected data will be sent to the router. That Sensor may be different as per its applications. As So many devices will be connected to the Internet of Things(IoT), it will generate massive data. To extract hidden information from the generated data we have to apply different types of algorithms. A large amount of data can be monitor and controlled with the use of Wi-Fi, internet of things (IoT), cloud computing (CC) .This study highlights the importance of real-time monitoring in CNC machine and provides a cost-effective IoT-based real-time monitoring solution for CNC machines.*

Keywords: Internet of Things

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