

## ABSTRACT

Air pollution has become an environmental and health issue in various regions due to the increasing population, motor vehicles, industrial factories, and power plants. Monitoring air pollution serves as a preventive measure in addressing the impacts of air pollution, as it can provide information and assist local authorities in making decisions for future pollution mitigation. To achieve effective monitoring, a reliable, flexible, and easily accessible system is required. Therefore, this research develops a system for monitoring and predicting air pollution utilizing IoT and Linear Regression forecasting methods, and employs IoT Methodology and Ripple Methodology for system development. This air pollution monitoring and Prediction system includes features such as pollution data collection, pollution data storage, real-time data presentation, air pollution Prediction, and model evaluation. In this research, the system achieved the ability to monitor and predict air pollution with an RMSE value of 0.49 for the CO model and 1.25 for the PM2.5 model, demonstrating sufficient flexibility to achieve effective, flexible, and easily accessible monitoring.

**Keywords** : Monitoring Air Pollution, IoT, Linear Regression, IoT Methodology, Ripple Methodology