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(57) Abstract :

This invention describes an AI-driven smart air quality management and prediction system employing deep learning models (LSTM and CNN) combined with satellite imagery and IoT sensor data. The system provides accurate pollution forecasting and real-time, NLP-powered corrective policy recommendations. An interactive GUI with GIS-based heatmaps and alerts supports stakeholder decision-making in urban planning, industrial regulation, traffic management, and public health safety, offering predictive insights and comprehensive multi-source data integration for enhanced environmental protection.

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