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IIT-I develops deep learning system to provide 5-day air quality forecast

• Times News Network

Indore: The Indian Institute of Technology (IIT) Indore developed a forecasting system to address growing air pollution and associated health concerns. This deep learning system delivers real-time AQI, PM2.5 readings, and five-day forecasts for various cities across India.

Professor Manish Kumar Goyal and PhD scholar Kuldeep Singh Rautela developed 'AeroVision', which utilises advanced machine learning algorithms to analyse historical PM2.5 data and weather parameters, including temperature, precipitation, and wind conditions, to generate accurate city-specific predictions.

"The application is particularly relevant for urban airsheds of Madhya Pradesh, where existing monitoring infrastructure is limited and real-time data access is inconsistent. By using advanced prediction techniques, AeroVision helps fill critical information gaps, supporting timely decision-making in public health and environmental management," said Goyal.

PILOT

Representatives from the Madhya Pradesh Pollution Control Board in Indore evaluated the application and research outcomes last week.

In March 2025, IIT-I released findings from an extensive analysis of air pollution patterns in India spanning four decades from 1980 to 2023. The research revealed substantial growth in PM2.5 levels—microscopic particles that can enter the lungs and bloodstream. The assessment indicated that Indore witnessed a 66% rise in average PM2.5 concentrations across the decades. The team intends to enhance AeroVision's prediction capabilities by incorporating more cities and monitoring parameters.