

IoT and Edge Computing for Smog Management and Policy Making

Authors : Farhan Siddiqui

Abstract : The increasingly complex challenges related to smog require the latest real-time monitoring and mitigation solutions. This paper describes a distributed IoT-edge architecture to improve smog detection, analysis, and policymaking. IoT sensors collect information related to critical air quality indicators while edge nodes perform local analytics with low latency for swift intervention. The system uses predictive algorithms to generate actionable insights to inform adaptive urban management strategies. Field implementations show dramatic improvements, including a 45 percent reduction in processing latency and improved predictive accuracy ($R^2 = 0.92$). These results show the potential of the framework to transform urban environmental management and policy making.

Keywords : Internet of Things, edge computing, Smog management, air quality, policy making

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