Journal of Computer Science and Information Systems,

ISSN 2535-1451

Feature Selection Optimization for Air Quality Monitoring Using Deep Learning in IoT Systems

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Abstract:

Air quality monitoring is a critical aspect of urban environmental management, and optimizing the efficiency of monitoring systems is crucial for real-time data analysis and decision-making. This research focuses on leveraging deep learning techniques to enhance the feature selection process in IoT-based air quality monitoring systems. By employing advanced feature selection algorithms, the study aims to identify the most relevant variables that contribute to accurate air quality predictions. A deep learning-based framework is developed to automatically analyze and select the best features from sensor data collected in smart cities. The approach aims to minimize computational complexity, reduce data redundancy, and improve model performance for predictive air quality monitoring. Experimental results demonstrate the effectiveness of the proposed method in achieving high prediction accuracy while optimizing the use of IoT resources.

Keywords:

Air quality monitoring, feature selection, deep learning, IoT systems, smart cities, environmental management

ISSN 2535-1451

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