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### **Optimization of Virus Detection Systems Using IoT-Based Biosensors and Neural Networks**

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#### Abstract:

The rapid and accurate detection of viral pathogens is essential for effective public health response, especially in densely populated urban environments. This study presents a novel framework for optimizing virus detection systems by integrating Internet of Things (IoT)-based biosensors with neural network algorithms. The proposed system enables real-time monitoring and early detection by leveraging biosensors that collect biological data, which are then analyzed using deep learning models such as convolutional neural networks (CNNs) for pattern recognition and anomaly classification. The optimization process employs techniques to enhance accuracy, reduce false positives, and ensure low-latency responses. Experimental validation demonstrates significant improvements in detection speed and reliability compared to traditional methods. This interdisciplinary approach offers a scalable and efficient solution for modern health surveillance in smart environments.

### **Keywords:**

Virus detection, IoT, biosensors, neural networks, real-time monitoring, health surveillance.

# **REQUEST FOR FULL TEXT**

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