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(57) Abstract :
The present invention discloses a system for automated detection of email spam using data visualization techniques in real-time. The system integrates advanced hardware components, including a data acquisition unit, GPU-accelerated computational core, AI-enhanced analytical engine, IoT-enabled communication module, and a visualization engine. The data acquisition unit captures email metadata, while the GPU core preprocesses data for analysis. The AI engine employs deep learning models to identify spam patterns, leveraging convolutional and recurrent neural networks. IoT sensors gather real-time network data, enabling adaptive detection strategies. The visualization engine renders insights into intuitive graphical formats for anomaly detection. Novel components such as an FPGA-based accelerator, secure hardware enclave, and thermal management unit enhance performance, scalability, and security. The system ensures high accuracy, low latency, and continuous adaptability to evolving spam techniques, positioning it as a robust solution for combating email spam effectively. Accompanied Drawing [Fig. 1]

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