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(57) Abstract:

METHOD AND SYSTEM FOR INTEGRATION OF EDGE AND CLOUD COMPUTING TO ENHANCE INFORMATION PROCESSING EFFICIENCY ABSTRACT The invention, as represented by the system 100, introduces an intelligent integration of edge and cloud computing for superior information processing efficiency in distributed environments. The system comprises an edge computing device 108 with a machine learning module for dynamic analysis of streaming data, generating a predictive model. The cloud computing system 110, in communication with the edge device, receives real-time updates of the predictive model and selectively processes tasks accordingly. A sensor fusion module enhances data diversity, and reinforcement learning techniques adapt the predictive model. Secure communication protocols (e.g., through the communication interface) ensure confidentiality. The system features a feedback loop (e.g., through the feedback loop mechanism) for continuous optimization, load balancing (e.g., through the load balancing module) for resource distribution, and security monitoring (e.g., through the security module). Containerization technology enhances scalability, while user-configurable parameters and ensemble learning techniques provide adaptability and accuracy.

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