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(57) Abstract :
The invention discloses a computer-enabled system for real-time network latency prediction comprising a data acquisition unit (101), a machine learning prediction engine (102), an adaptive optimization layer (103), and a visualization dashboard (104). The system captures real-time network metrics, predicts latency trends using hybrid models, and dynamically adapts computational requirements based on available resources. An error correction module (103a) enhances prediction accuracy, while a security module (105) ensures secure data handling. The invention improves performance, reduces downtime, and enables proactive latency management across diverse network environments.

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