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(57) Abstract :

The present invention relates to a hardware-integrated system (100) for operating artificial intelligence agents with transparency, accountability, and trustworthiness. The system comprises a central processing unit (101) operatively connected to a multi-layer memory architecture (102) storing agent configuration parameters, a state transition controller (103) managing agent lifecycle phases including initiation, active operation, and completion states, a decision journaling module (104) recording all agent decisions with timestamps and contextual metadata in non-volatile storage, a human-in-the-loop interface module (105) enabling real-time human oversight through configurable intervention thresholds, an activity logging engine (106) capturing comprehensive operational traces, and an analytics dashboard processor (107) generating real-time visualizations of agent behavior patterns. The system achieves measurable improvements in processing latency reduction, memory utilization optimization, and network throughput enhancement while ensuring progressive trust calibration through hardware-accelerated confidence scoring mechanisms (108). Industrial applications include enterprise workflow automation, financial transaction processing, and healthcare decision support systems.

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