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(57) Abstract :

A predictive maintenance system for computing infrastructure includes a telemetry acquisition module (101), a data normalization module (102), a feature extraction module (103), a prognostic engine (104), a recommendation controller (105), a storage repository (106), and an outcome feedback module (107). Operational data from infrastructure assets is transformed into standardized records and degradation indicators. The prognostic engine (104) estimates failure likelihood and maintenance priority, while the recommendation controller (105) issues actionable advisories. Post-maintenance outcomes are fed back through the outcome feedback module (107) to improve future prediction accuracy and maintenance planning across computing environments.

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