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(57) Abstract :
AI-ENABLED STRUCTURAL INTELLIGENCE PLATFORM FOR PREDICTIVE MAINTENANCE IN CIVIL ENGINEERING ABSTRACT
The AI-Enabled Structural Intelligence Platform for Predictive Maintenance in Civil Engineering represents a transformative innovation addressing challenges in infrastructure asset management. Integrating a Data Processing Module, Artificial Intelligence Module, and User Interface Module, the system enables proactive maintenance practices. The Data Processing Module analyzes diverse structural data, including sensor data and historical records. The Artificial Intelligence Module employs advanced algorithms to identify anomalies and predict maintenance requirements, continuously refining its models. The User Interface Module translates insights into actionable recommendations for stakeholders. The method involves receiving data, processing it to identify anomalies, employing AI for predictive analysis, and presenting maintenance recommendations. This invention offers early anomaly detection, predictive maintenance planning, and resource optimization, fostering increased infrastructure lifespan and cost reduction. The platform's adaptability finds application across diverse civil engineering sectors, revolutionizing maintenance practices for enhanced safety and efficiency.

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