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(57) Abstract :
 The present invention discloses an AI-based autonomous bias correction mechanism (100) comprising a Bias Detection Module (101), a Quantification Engine (102), a Correction Engine (103), a Performance Monitoring Unit (104), and a Continuous Feedback Loop (105). The mechanism detects biases in machine learning models, quantifies them, autonomously applies corrective strategies, monitors model performance, and adapts continuously to real-world data shifts, ensuring fairness with minimal human intervention.

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