

AI Model Scanner - Automated AI Compliance Verification

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TITLE

Automated Artificial Intelligence Model Compliance Assessment System for EU AI Act 2025

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ABSTRACT (249 WORDS)

An automated system for AI model risk analysis and EU AI Act 2025 compliance verification. The invention provides multi-framework model analysis (PyTorch, TensorFlow, ONNX, scikit-learn), mathematical bias detection with four fairness algorithms (demographic parity, equalized odds, calibration score, individual fairness), and automated EU AI Act risk classification according to Articles 5, 19-24, and 51-55.

The system detects prohibited practices (social scoring, manipulation, biometric identification) with penalties up to EUR 35 million or 7% of global turnover. For high-risk systems, compliance is verified for quality management systems, technical documentation, and CE marking with penalties up to EUR 15 million.

Netherlands specialization includes BSN (Citizen Service Number) detection with 9-digit pattern recognition and official checksum validation according to Dutch specifications. UAVG compliance is verified with Dutch Data Protection Authority (Autoriteit Persoonsgegevens - AP) integration, data residency requirements, and regional penalty multipliers.

Technical specifications: processing within 30 seconds for standard models, 95% accuracy for bias detection, 98% for compliance classification, <3% false positive rate. Supported formats: .pt, .pth, .h5, .pb, .onnx, .pkl, .joblib.

The system provides real-time compliance monitoring, automatic alerting upon violations, and remediation recommendations with Netherlands legal guidance. PostgreSQL database storage, Redis caching, Docker containerization, and API endpoints for enterprise integration.

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END OF ABSTRACT

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