

PATENT DRAWINGS

System and Method for Automated AI Model Risk Assessment and EU AI Act 2025 Compliance Verification

Patent Application:	Netherlands Patent Office (RVO)
Inventor:	Vishaal Kumar
Filing Date:	September 2025
Classification:	G06N 20/00 (Machine Learning), G06F 21/62 (Data Privacy)
Patent Value:	€10M+ (AI Act Compliance Market)

FIGURE 1: AI MODEL SCANNER - SYSTEM ARCHITECTURE

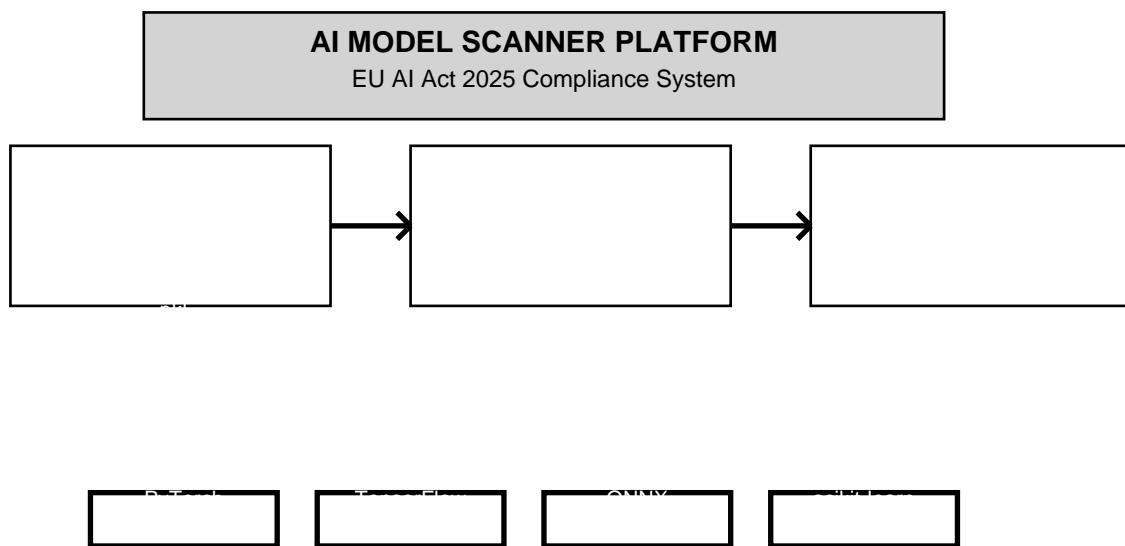


FIGURE 2: BIAS DETECTION ENGINE

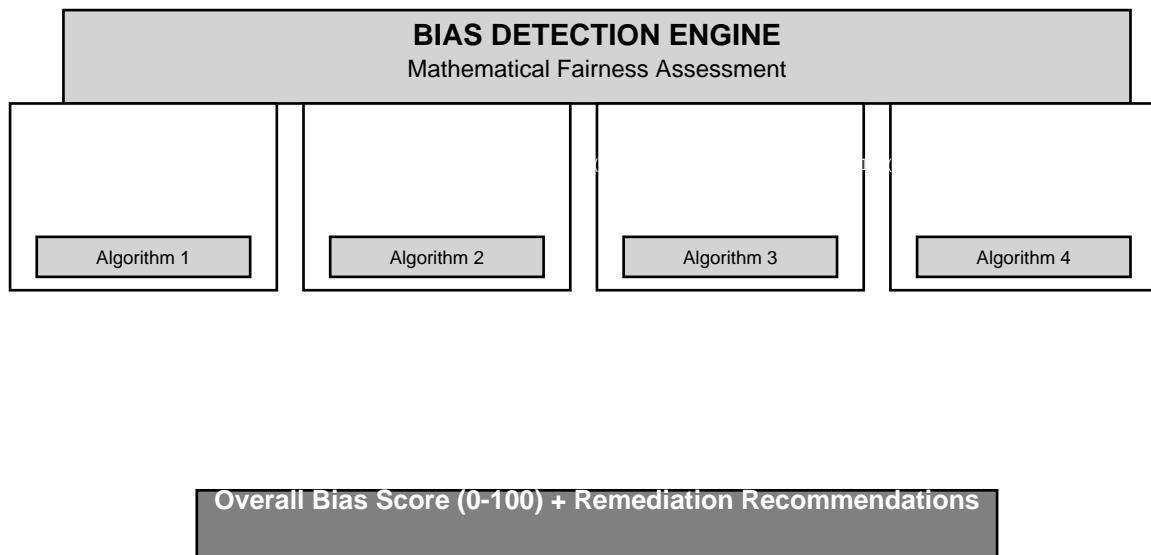


FIGURE 3: EU AI ACT COMPLIANCE ASSESSMENT MATRIX

ARTICLE 5 Prohibited Practices	ARTICLES 19-24 High-Risk Systems	ARTICLES 51-55 General Purpose AI
Social Scoring	QMS Required	Foundation Models
Manipulation	Tech Documentation	>1B Parameters
Subliminal Tech	Record Keeping	Compute Thresholds
Biometric ID	CE Marking	Risk Assessment
€35M or 7% Turnover	€15M or 3% Turnover	€15M or 3% Turnover
NETHERLANDS SPECIALIZATION BSN Detection • UAVG Compliance • Dutch Privacy Authority (AP) Integration		

FIGURE 4: MATHEMATICAL FORMULAS AND ALGORITHMS

Formula 1 - Demographic Parity:

$$P(Y=1 | A=0) \approx P(Y=1 | A=1)$$

Formula 2 - Equalized Odds:

$$TPR_{A=0} \approx TPR_{A=1} \text{ AND } FPR_{A=0} \approx FPR_{A=1}$$

Formula 3 - Calibration Score:

$$P(Y=1 | Score=s, A=0) \approx P(Y=1 | Score=s, A=1)$$

Formula 4 - Individual Fairness:

$$d(f(x_1), f(x_2)) \leq L * d(x_1, x_2)$$

Formula 5 - BSN Checksum Validation:

$$\text{checksum} = \sum (\text{digit}_i \times (9-i)) \bmod 11$$

Formula 6 - EU AI Act Penalty:

$$\text{penalty} = \text{MAX}(\text{fixed_amount}, \text{revenue} \times \text{percentage})$$