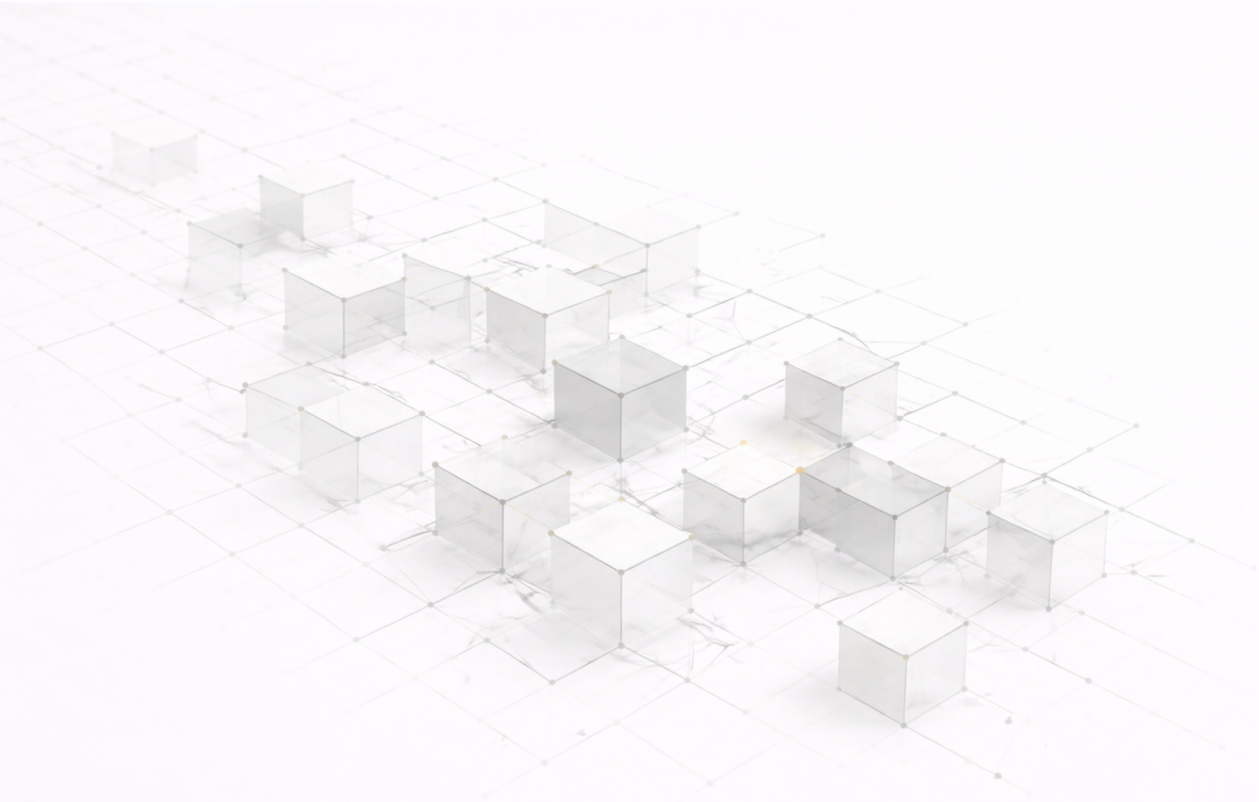

APOLLO Data Auditor

WHITE PAPER · QUALITY & AI

Is Your Data Ready for AI?

Why Data Quality Drives 85% of AI Failures — Before the Model Is Even the Problem

Quality & AI Module — July 2026

In this document, APOLLO™ Data Auditor is abbreviated to "APOLLO DA".

EXECUTIVE SUMMARY

95% of GenAI pilots produce no measurable return on investment — despite $30–40 billion in global AI spending (MIT, 2025).

The dominant approach is AI-first: pick a model, buy a license, start a pilot — and hope the data follows. It rarely does. Gartner attributes 85% of AI failures to data quality, not model quality. The RAND Corporation found that AI projects fail at twice the rate of traditional IT projects.

This paper examines why AI failures are data failures, what a data-first approach changes, and why — with the EU AI Act entering enforcement on August 2, 2026 — the question is no longer optional.

1. THE AI PROJECT THAT NEVER SHIPPED

According to TechShift's 2026 Enterprise AI Readiness Report, 65% of AI initiatives that stalled in 2024–2025 cited data quality or accessibility as the primary blocker — not model capability, not budget. One pattern recurs across industries: a company hires data scientists, selects a model, launches a pilot — and watches 80% of the team's time disappear into data cleaning, deduplication, and schema reconciliation. Eighteen months later, the project is abandoned, three times over budget, with no usable output.

The model was not the problem. The data was. And in most cases, no one had checked before the budget was committed.

This pattern repeats at scale. The RAND Corporation found that over 80% of AI projects fail — twice the rate of traditional IT projects. MIT researchers confirmed in 2025 that 95% of GenAI pilots produced no measurable ROI — despite tens of billions in global spending. The cause is structural: organizations invest in models before auditing their data. They ask "which AI should we deploy?" before asking "is our data ready for any AI at all?"

APOLLO™ DATA AUDITOR IN ACTION — THREE AI PROJECTS SCORED BEFORE LAUNCH

Each case below is an AI initiative that stalled — not because of the model, but because of the data. Below is what APOLLO™ Data Auditor would have surfaced before the first sprint.

© 2026 aiia-tech.com — Confidential

The scan profiles and scores below are a reconstruction: what an APOLLO Data Auditor scan would have surfaced. They are not actual scans of these organisations.

Case 1 — European Financial Services Firm, AI credit scoring project abandoned after 14 months

Scan profile: 3 databases, 680,000 client records. Data types: income statements, transaction history, credit applications. Issue: 34% duplicate records across 3 source systems, 22% missing values in key fields (income, employment status). Schema inconsistency: date formats in 4 different standards across sources.

SCORE	VALUE	STATUS
Data Quality for AI (S012)	**27 / 100**	NOT READY
Data Quality	31 / 100	CRITICAL
Data Governance	24 / 100	CRITICAL
Estimated AI project cost overrun	**€ 480,000**	—

DIMENSION	SCORE	FINDING
Completeness	18 / 100	22% missing values in income/employment fields — core features for credit model
Uniqueness	24 / 100	34% duplicate records across sources — model would train on contaminated data
Consistency	31 / 100	4 date formats, 3 currency representations, 2 naming conventions
AI Act Art. 10	15 / 100	Training data governance undocumented — non-compliant for high-risk AI use

PRIORITY	ACTION	ESTIMATED IMPACT
P1	Deduplicate 231,000 duplicate records before model training	Removes data contamination — Data Quality for AI: from 27 to 54+
P1	Standardize schema across 3 source systems — date, currency, naming	Completeness issue cannot be fixed without schema alignment
P1	Document data governance for AI training pipeline (Art. 10 compliance)	Required before EU AI Act enforcement — August 2026 deadline

© 2026 aiia-tech.com — Confidential

> *The project was abandoned after 14 months. APOLLO DA's Data Quality for AI score would have been 27/100 on day one. The estimated cost overrun: €480,000. The time to fix the data issues before starting: 8 weeks. The project team never ran a data audit before the first sprint.*

Case 2 — US Healthcare Network, AI diagnostic assistant blocked by HIPAA + AI Act dual compliance

Scan profile: 2 databases, 4.2M patient records. Training data for diagnostic AI. Issue: 18% of records contain PII of individuals deceased 10+ years (no deletion process), 12% of records are duplicates from system migrations. AI Act high-risk category: medical diagnosis. HIPAA compliance: not verified against training data.

SCORE	VALUE	STATUS
Data Quality for AI (S012)	**19 / 100**	NOT READY
Compliance HIPAA/AI Act	Grade F	CRITICAL
Data Governance	14 / 100	CRITICAL
Estimated compliance exposure	**$ 2,100,000**	—

DIMENSION	SCORE	FINDING
Data minimization	8 / 100	756,000 records with no retention basis — deceased patients, no legal hold
Training data quality	22 / 100	504,000 duplicate records would inflate false positive rate in training
AI Act Art. 10 compliance	0 / 100	No training data governance documentation. High-risk AI, mandatory requirement.
AI Act Art. 15 compliance	12 / 100	No cybersecurity posture documented for AI system

PRIORITY	ACTION	ESTIMATED IMPACT
P1	Delete 756,000 records with expired retention basis before training data freeze	Removes HIPAA violation + AI Act Art. 10 contamination
P1	Deduplicate 504,000 duplicate records — document deduplication methodology for Art. 10	Training data quality from 22 to 68+
P1	Create AI training data governance documentation (Art. 10 — mandatory for high-risk AI)	Required — EU AI Act enforcement begins August 2, 2026

© 2026 aiia-tech.com — Confidential

> *The diagnostic AI was classified as high-risk under EU AI Act Article 6. Without Art. 10 compliance, deployment in the EU is illegal after August 2026. APOLLO DA's score: 0/100 on AI Act Art. 10. The 756,000 records with no retention basis would have created simultaneous HIPAA and AI Act violations in any deployed model.*

Case 3 — French Retail Group, customer recommendation engine producing discriminatory outputs

Scan profile: CRM database, 1.8M customer records. AI recommendation engine trained on 3 years of purchase history. Issue: purchase history skewed by COVID lockdown period (2020-2022) — 40% of training data is non-representative. Sensitive attributes (age proxy, postal code) present in training data without bias review. GDPR Art. 22 (automated decision-making): no documentation.

SCORE	VALUE	STATUS
Data Quality for AI (S012)	**34 / 100**	NOT READY
Data Quality	41 / 100	NEEDS WORK
Compliance GDPR	28 / 100	Grade F
Estimated regulatory exposure	**€ 340,000**	—

DIMENSION	SCORE	FINDING
Representativeness	12 / 100	40% of training data from COVID anomaly period — statistically non-representative
Bias indicators	8 / 100	Age proxy + postal code (socioeconomic indicator) in training features — undocumented
GDPR Art. 22	0 / 100	Automated decision-making deployed with no transparency documentation
Freshness	45 / 100	3-year-old training data for a model currently generating live recommendations

PRIORITY	ACTION	ESTIMATED IMPACT
P1	Exclude 2020–2022 data from training set — flag as non-representative	Representativeness: from 12 to 68+
P1	Document automated decision-making logic (GDPR Art. 22)	Required — currently 0% compliant
P2	Remove age proxy and postal code from training features or document bias review	Eliminates discriminatory output risk

© 2026 aiia-tech.com — Confidential

> *The model was live for 18 months before a bias audit flagged the COVID data skew. GDPR Art. 22 compliance: 0/100. The fix — excluding 40% of training data and retraining — took 6 weeks. APOLLO DA would have flagged the COVID data anomaly and the Art. 22 gap before the first model was deployed.*

2. THE THREE DATA PROBLEMS AI CANNOT SOLVE FOR YOU

AI does not fix bad data. It amplifies it. Three categories of data problems consistently block or corrupt AI deployments — and none of them are visible without an audit.

Problem 1: Your data is contaminated.

A company trains an internal support chatbot on a corpus of customer tickets. The tickets were never anonymized. The model memorizes and regurgitates personal data — email addresses, phone numbers, physical addresses — in its responses. The International AI Safety Report 2025 identifies PII removal from training data as one of the major unresolved challenges in AI deployment.

A recruitment tool trained on ten years of hiring data reproduces the biases encoded in that history — favoring certain profiles, penalizing others. The data was not audited for representativeness before training. The result: systemic discrimination and regulatory exposure under AI Act Annex III (employment systems = high-risk category).

Problem 2: Your employees are already using AI — without you.

IBM's Cost of a Data Breach 2025 report found that 20% of breaches now involve shadow AI — employees using unauthorized AI tools with company data. The average cost of a shadow AI breach is $4.63 million, versus $3.96 million for a standard breach — a $670,000 premium.

63% of organizations have no AI governance policy. 97% of organizations that experienced an AI-related breach had no dedicated AI access controls. Only 37% have any mechanism to detect or approve AI tool usage.

Employees paste client data into ChatGPT to draft proposals. They upload spreadsheets to AI assistants. They feed confidential documents into tools that store inputs on servers they do not control. This is not malicious — it is the absence of governance meeting the availability of powerful tools.

Problem 3: The AI Act is coming — and your data governance is not ready.

The EU AI Act enters enforcement on August 2, 2026 for high-risk AI systems (Annex III: employment, credit scoring, healthcare, education, biometrics, critical infrastructure). Penalties: up to €35 million or 7% of global revenue.

© 2026 aiia-tech.com — Confidential

Article 10 requires formal data governance for training datasets — quality, completeness, representativeness, traceability. Article 15 requires cybersecurity measures proportionate to the risk level of the AI system.

Most compliance tools for the AI Act are declarative — checklists and questionnaires. But Article 10 cannot be satisfied by declaration. It requires measurable metrics on actual data: completeness scores, consistency rates, schema stability, PII contamination levels. No questionnaire produces these numbers.

3. WHAT A DATA-FIRST APPROACH LOOKS LIKE

The alternative to AI-first is not "no AI." It is data-first: audit the data before investing in the model. Measure readiness before committing budget. Identify blockers before the data scientists spend 18 months finding them manually.

A data-first audit answers four questions:

Is your data quality sufficient for AI? Completeness, consistency, freshness — measured per source, per table, per field. Not "our data is generally good" but "this database has 62% completeness, schema stability is 1/5, and 6% of files are in formats exploitable by LLMs."

What blocks AI deployment right now? Concrete, actionable blockers — not abstract risk categories. "2 files containing unencrypted PII are accessible by Copilot." "2 database tables have no primary key — anonymization is structurally impossible." "Extractability is 6% — your data is not usable by any LLM without transformation."

What is your data maturity level? Ten dimensions scored 1 to 5: naming conventions, documentation, encryption, lifecycle management, coherence, schema quality, audit trail, classification, access control, cost awareness. Current level versus target. "You are at Level 2. Level 3 (Proactive) requires improving documentation from 1/5 to 3/5 and encryption from 1/5 to 3/5."

Are you exposed under the AI Act? If AI signals are detected in your environment, the module flags them and provides Article 10 data governance metrics and Article 15 cybersecurity posture scores. If no AI signals are detected, the answer is honest: "AI Act not applicable at this stage." No overselling. No manufactured urgency.

4. HOW APOLLO DATA AUDITOR SCORES DATA QUALITY FOR AI

The four questions above exist today in the Quality & AI module. Here is what it produces from a real scan.

Your data stays yours. A native agent runs locally on Windows, Linux, and macOS (arm64). It scans files, databases, cloud storage, Active Directory, and infrastructure. Only metadata and counters transit to the cloud dashboard. The agent is source-available (BSL 1.1).

© 2026 aiia-tech.com — Confidential

A data quality score for AI you can act on. Quality × classification × utility — three factors, one grade. The score tells you whether your data is ready for AI deployment before you spend a euro on models or consultants. Below it: the specific blockers that explain the grade, each with a priority level and a remediation action.

Cross-source signals that no silo view reveals. The Quality & AI module correlates findings across sources: "Your ERP exports contain PII in local files with no organization." "Database quality is excellent (A) but governance is failing (F) — invisible non-compliance." "File disorganization makes structural compliance impossible." These signals connect dots that source-by-source tools miss.

AI Act metrics — not AI Act compliance. APOLLO DA does not claim AI Act compliance. That requires risk management systems, technical documentation, human oversight, and conformity assessments — all of which are process-based and outside the scope of a data scan. What APOLLO DA provides are the Article 10 data governance metrics (completeness, consistency, freshness, PII contamination) and Article 15 cybersecurity posture scores that compliance checkers cannot produce. The metrics your auditor will ask for — measured, not declared.

Every score is transparent, reproducible, and published. No black box.

THE PRICE COMPARISON

	AI READINESS FRAMEWORKS	AI ACT COMPLIANCE CHECKERS	ENTERPRISE DSPM (AI MODULE)	APOLLO DATA AUDITOR
Annual cost	Free – $50K (consulting)	€5,000 – €100,000	$100,000 – $250,000+	See pricing
Measures data quality for AI	No (organizational maturity)	No (declarative)	Partial (model inventory)	**Yes — per source, per field**
Identifies AI blockers	No	No	Partial	**Yes — concrete, actionable**
AI Act Art. 10 metrics	No	No (questionnaire)	Partial	**Yes — automated from scan**
Shadow AI data exposure	No	No	Partial (detection)	**Yes — PII map of exposed data**

5. ONE SCAN. ONE ANSWER. FOUR DIMENSIONS.

Data quality for AI is not a standalone metric. Contaminated training data is also a compliance violation (GDPR Art. 5, Art. 9). A dormant admin account with access to AI-ready datasets is both a

© 2026 aiia-tech.com — Confidential

protection gap and a data quality risk. Obsolete files feeding an AI pipeline are a financial exposure and a data hygiene failure.

Organizations that treat data quality for AI, compliance, protection, and risk as separate workstreams end up with separate tools, separate budgets, and separate blind spots. The combined cost exceeds €100K/year — and the blind spots remain.

APOLLO DA was built on the premise that these are one problem, visible in one scan.

→ **Quality & AI** — what this paper covers. Data quality score for AI, quality metrics, AI blockers, data maturity radar, AI Act pre-compliance (Art. 10 + Art. 15), shadow AI data exposure assessment.

→ **Privacy Risk** — financial quantification in € and $, breach impact simulation, PII mapping, toxic combinations, risk zones.

→ **Compliance Risk** — GDPR scored by article (Art. 5, 9, 30, 32), CCPA, NIS2, SOC2, DORA. Grades A through F based on actual data. Remediation plan with financial impact per action.

→ **Protection Risk** — backup resilience, encryption coverage, ransomware readiness, access control hygiene, ROT data identification, breach impact simulation.

No other tool in this price range covers all four. The AI market was built around models and platforms. **APOLLO™ Data Auditor** exists because the data underneath those models determines whether they succeed or fail — and no one was measuring it at a price SMBs can afford.

Sources: MIT — Nanda et al., "The GenAI Divide" (2025, via Fortune & Bloomberg) · Gartner AI Data Quality Analysis 2024–2025 · RAND Corporation AI Project Failures 2024 · IBM Cost of a Data Breach 2025 · TechShift Enterprise AI Readiness Report 2026 · EU AI Act (Regulation 2024/1689) · International AI Safety Report 2025 · Enzoic AD Password Security Report 2025

APOLLO™ Data Auditor
Every file is a risk. Measure it.

→ https://apollo.aiia-tech.com
→ contact@aiia-tech.com

© 2025-2026 aiia-tech.com