

Field	Value
Document ID	GOV-AI-DS-001
Version	1.0
Effective Date	December 15, 2024
Document Owner	Chief AI Officer
Classification	Internal Use
Review Cycle	Annual

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Development Standards for AI Systems

1. Purpose

This document establishes comprehensive development standards for artificial intelligence systems to ensure reproducible, testable, and reviewable code and data pipelines across the organization. These standards are designed to:

- Establish consistent development practices for AI/ML systems that support auditability and regulatory compliance
- Ensure reproducibility of AI experiments and model deployments across development, testing, and production environments
- Define quality gates and security controls that protect against model drift, data poisoning, and unauthorized access
- Provide clear accountability structures for AI development lifecycle management
- Support business continuity through standardized documentation and knowledge transfer practices

2. Scope

2.1 In Scope

This standard applies to all AI and machine learning development activities including:

- Machine learning model development and training pipelines
- Data preprocessing and feature engineering workflows
- Model evaluation and validation frameworks
- Automated model deployment and monitoring systems
- Data contracts and schema management for AI systems
- Experiment tracking and model versioning
- AI code repositories and version control practices
- Integration testing for AI components
- Performance benchmarking and drift detection

2.2 Out of Scope

This standard does not cover:

- General software development practices not specific to AI systems
- Infrastructure provisioning and cloud resource management
- Business intelligence and traditional analytics reporting
- Third-party AI services where source code is not accessible

3. Roles and Responsibilities

3.1 RACI Matrix

Activity	Engineering Lead	Development Leads	QA/Security Teams	Audit Function