

# Pre-Deployment Audit Checklist

100-Point AI System Production Readiness Assessment | TeraSystemsAI

|                                    |                             |                           |                    |
|------------------------------------|-----------------------------|---------------------------|--------------------|
| SYSTEM NAME<br>[Enter System Name] | VERSION<br>[Version Number] | ASSESSMENT DATE<br>[Date] | ASSESSOR<br>[Name] |
|------------------------------------|-----------------------------|---------------------------|--------------------|

0 / 100 Points Completed

## 1. Safety Checks 0 / 25 pts

- 1.1 Failure Mode Analysis Complete** CRITICAL  
All potential failure modes identified, documented, and mitigation strategies in place.
- 1.2 Kill Switch Implemented** CRITICAL  
Emergency shutdown mechanism tested and documented with <30 second activation time.
- 1.3 Output Validation Rules** CRITICAL  
All model outputs validated against safety constraints before reaching end users.
- 1.4 Human Override Capability** HIGH  
Human operators can override any AI decision within the system scope.
- 1.5 Adversarial Testing Complete** HIGH  
System tested against adversarial inputs and attack vectors.
- 1.6 Data Poisoning Safeguards** HIGH  
Training pipeline protected against data poisoning attacks.
- 1.7 Graceful Degradation** MEDIUM  
System degrades gracefully under load or partial failures.

**1.8 Rollback Procedure Tested** HIGH

Previous version can be restored within defined RTO.

## 2. Performance Criteria

0 / 25 pts

 **2.1 Accuracy Thresholds Met** CRITICAL

Model accuracy meets or exceeds defined production thresholds across all segments.

 **2.2 Latency Requirements Met** CRITICAL

P95 latency within SLA requirements under expected load.

 **2.3 Load Testing Complete** HIGH

System tested at 2x expected peak load for minimum 24 hours.

 **2.4 Memory/Resource Profiling** HIGH

Memory leaks, CPU usage validated under sustained operation.

 **2.5 A/B Test Results Validated** MEDIUM

Statistical significance achieved in comparison testing.

 **2.6 Edge Case Performance** HIGH

Performance validated on edge cases and rare inputs.

 **2.7 Scalability Verified** MEDIUM

Auto-scaling rules tested and validated.

 **2.8 Benchmark Comparison** MEDIUM

Performance compared against industry benchmarks.

## 3. Fairness & Bias

0 / 25 pts

- 3.1 Demographic Parity Analysis** CRITICAL  
Model performance analyzed across protected demographic groups.
- 3.2 Disparate Impact Test** CRITICAL  
Four-fifths rule or equivalent fairness metric passes.
- 3.3 Training Data Audit** HIGH  
Training data reviewed for historical bias and representation.
- 3.4 Proxy Variable Check** HIGH  
Model does not use proxies for protected attributes.
- 3.5 Equal Opportunity Metrics** HIGH  
True positive rates equalized across groups where applicable.
- 3.6 Bias Mitigation Applied** MEDIUM  
Appropriate bias mitigation techniques implemented.
- 3.7 Third-Party Audit** MEDIUM  
External fairness audit completed (if high-risk).
- 3.8 Intersectionality Analysis** MEDIUM  
Performance analyzed for intersecting demographic groups.

#### 4. Operational Readiness

0 / 25 pts

- 4.1 Monitoring Dashboard Live** CRITICAL  
Real-time monitoring for model drift, performance, and errors.
- 4.2 Alerting Configured** CRITICAL  
Alert thresholds set with appropriate escalation paths.

**4.3 Logging Implemented** HIGH

Comprehensive logging for debugging and audit trails.

**4.4 Documentation Complete** HIGH

Technical docs, runbooks, and API documentation finalized.

**4.5 On-Call Rotation Set** HIGH

Support rotation established with clear escalation paths.

**4.6 Disaster Recovery Tested** HIGH

DR procedures tested with documented RTO/RPO.

**4.7 Security Review Complete** CRITICAL

Security assessment and penetration testing completed.

**4.8 Compliance Sign-Off** HIGH

Legal and compliance review completed and documented.

**Final Sign-Off**

All required approvers must sign before deployment proceeds.

ML Engineering      Signature: \_\_\_\_\_      Date: \_\_\_\_\_  
Lead

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QA Lead      Signature: \_\_\_\_\_      Date: \_\_\_\_\_

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Security Officer      Signature: \_\_\_\_\_      Date: \_\_\_\_\_

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Ethics/Compliance      Signature: \_\_\_\_\_      Date: \_\_\_\_\_

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Product Owner      Signature: \_\_\_\_\_      Date: \_\_\_\_\_  
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**FINAL APPROVAL**

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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**TeraSystemsAI Governance Toolkit**

Pre-Deployment Audit Checklist v2.0 | 100-Point Assessment

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