

Model Retraining & Drift Monitoring Policy

AI Model Governance & Monitoring Lab

1. Monitoring Framework

All production models will undergo continuous monitoring using the following KPIs:

- **Performance Metrics:** Accuracy, F1-Score, and AUC-ROC (where ground truth is available).
- **Statistical Metrics:** PSI and KS-Test for all critical features (Income, Credit Score).

2. Drift Trigger Conditions

- Accuracy drop > 10%

Condition	Severity	Required Action
PSI > 0.25	High	Immediate investigation + Retraining trigger.
KS-test p-value < 0.05	Medium	Data Quality alert; review pipeline for errors.
Critical	Emergency Model rollback or immediate retrain.	

3. Retraining Strategy

- **Triggered Retraining:** Automate training when PSI thresholds are breached for > 48 hours.
- **Scheduled Retraining:** Monthly refresh using the most recent 30-day sliding window.
- **Validation:** New models must outperform current production models on a 'Hold-out' set by at least 2%.

4. Validation & Rollback

New models are first deployed in **Shadow Mode** to observe real-world performance without impacting users. If performance degrades compared to the baseline, the system automatically rolls back to the last stable version.