

Why it's Concept Drift:

The relationship between the input features (temperature, vibration, pressure) and the target outcome (failure) has changed. The sensor readings might look similar, but they now mean something different in terms of predicting failures because:

- The machinery upgrade changes how the equipment behaves and fails
- New materials alter the failure modes and patterns
- The mapping from X (sensor readings) → Y (failure prediction) has shifted

Why it's Data Drift:

The distribution of the input features (purchase amount, location, time) has changed due to external factors, while the relationship between these features and fraud remains conceptually similar.

- New payment technologies change how/where/when people make purchases
- Consumer spending patterns shift (seasonal trends, economic changes)
- The input data distribution $P(X)$ has evolved
- Fraudulent transactions are still fraudulent in similar ways relative to legitimate transactions