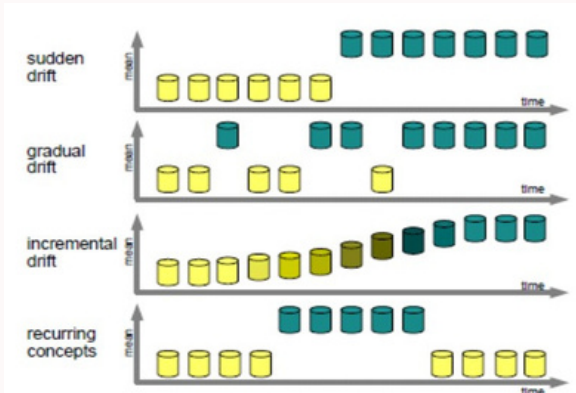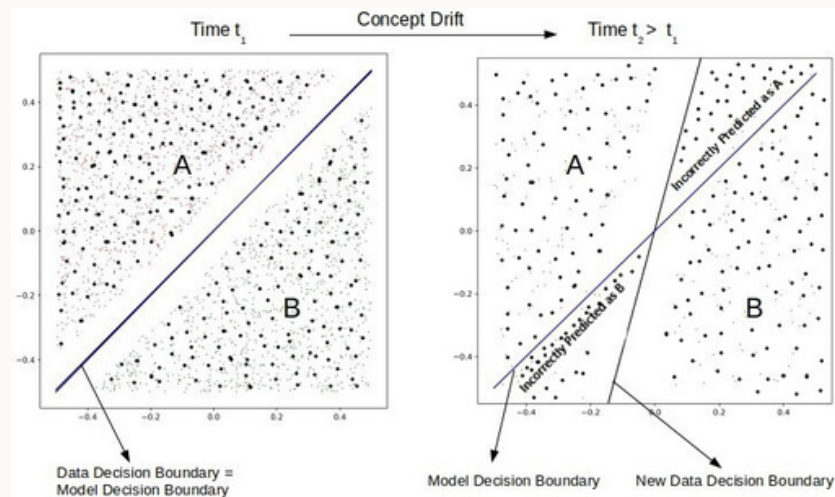# STAY TUNED WITH YOURMODEL

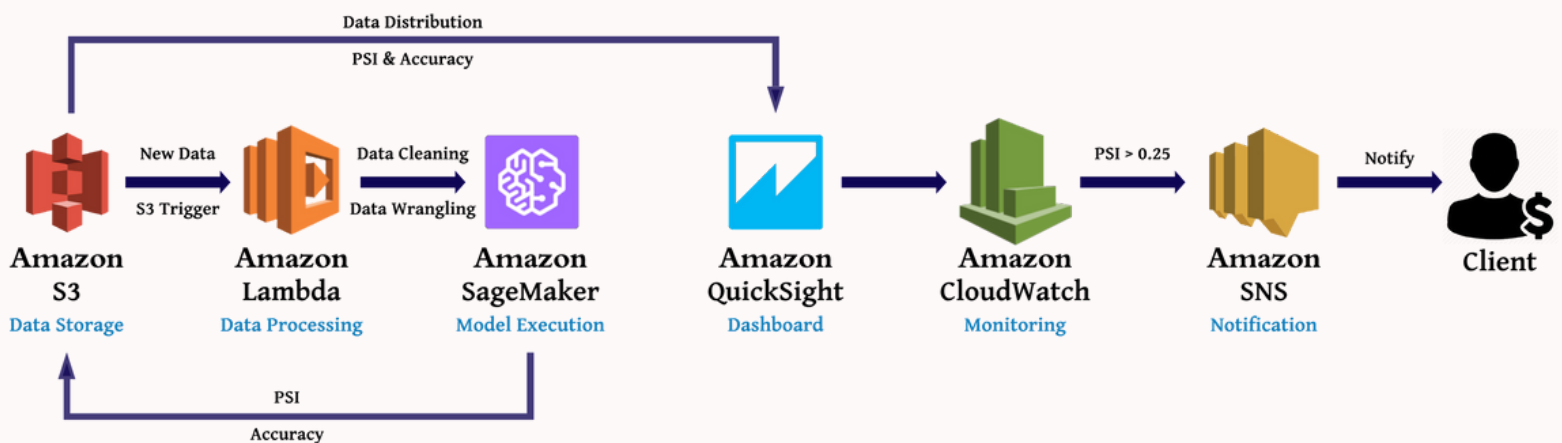*Addit Anwar*

Why Models Decay?

- Model's performance degrades over time due to a change in the environment that violates the model's assumptions. This is known as concept drift.
- We are assuming that the data distributions will remain fairly constant. But trends change over time, people's interests vary with the seasons.

So What Will Happen?

- A model uses assumptions and weights based on old data to make predictions on new changed data.
- Over the time this could lead to **wrong predictions** which will in turn cost the company time and money.

How Can We Help You?

PSI (Population Stability Index) - is the statistical metric used to detect change in data distributions between new data and training data.

How Does It Work?

AUTOMATICALLY DETECT THE DATA CHANGE AND NOTIFY

DETECTION
Compare and detect features with changed distributions using statistical metrics.

VERIFICATION
Did the change in distribution lead to change in model performance?

NOTIFICATION
Alert owners to intervene and analyze the change in distribution. Next Step would be model retuning.

Next Steps

Below two ways can be used to tackle concept drift.
- Creating new features to capture the new variation in data. Retuning the model
- using techniques such as fixed or varying data window depending on the type of drift.

Use Cases

RETAIL INDUSTRY
- **Sales Forecasting**
- **Logistic Planning**
- **Marketing Campaign**

FINANCIAL INDUSTRY
- **Credit Evaluation**
- **Fraud Detection**
- **Loan Approval**