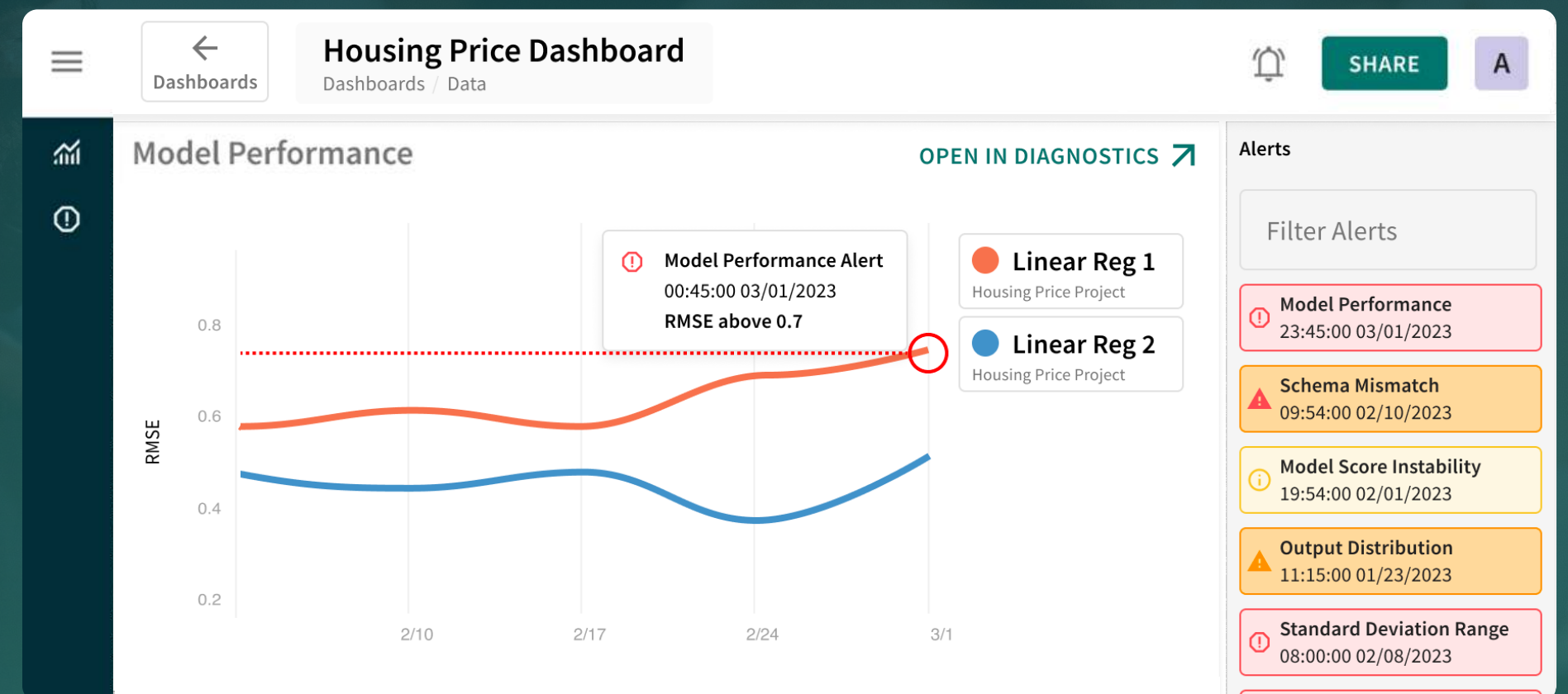


# TruEra Monitoring

## Comprehensive, Real-Time ML Monitoring with Root Cause Analysis

TruEra Monitoring makes it easy to track and debug the performance of your machine learning models. With real-time, comprehensive analytics, metrics, and alerts, TruEra Monitoring goes beyond basic observability and ad-hoc solutions, enabling full transparency across the entire ML model lifecycle and faster root cause analysis. This saves the time of data scientists and ML engineers, and provides a more effective feedback loop to optimize both model and business outcomes.



TruEra Monitoring tracks AI performance and provides alerts in real-time, allowing users to pinpoint the specific times when models behave poorly.

## Key benefits



### Real-time monitoring with relevant alerts

Track models and set the right alerts for performance, data quality, bias, drift, and feature importance metrics across time intervals and segments



### Root cause analysis and debugging

Quickly identify negative trends, anomalies, and error-prone segments; rapidly debug problems within a single workflow



### Easy tech stack integration

Easily integrate with different ML stacks and create dashboards within minutes



### Multi-model support: NLP, tabular, computer vision

Track any number of competing models in production for faster experiment management, A/B testing, champion/challenger, and shadow mode



### High data and model scalability

Support 1,000s of models simultaneously with petabyte scale



# Key capabilities

## Real-Time Performance and Quality Monitoring

### Intuitive Monitoring Dashboard

Comprehensive dashboard of key analytics that is easy to set up, so that you can quickly see how your models are performing:

- **Quick dashboard setup time** - Takes just 5 minutes to set up
- **Model and performance statistics across regression and classification:**
  - Performance, label and score drift, score statistics, decision frequencies, score distributions, and more
  - Segment performance and custom metric tracking (coming soon)
- **Global filters** - Filter all models across metrics, time window, and segments
- **Universal support for regression and classification models**

### Multi-Model Support

- Real-time model observability for 100s of dashboards supporting 100s of models each on batch or streaming basis at petabyte scale
- Provide easy A/B, champion/challenger, shadow mode, or canary testing in production

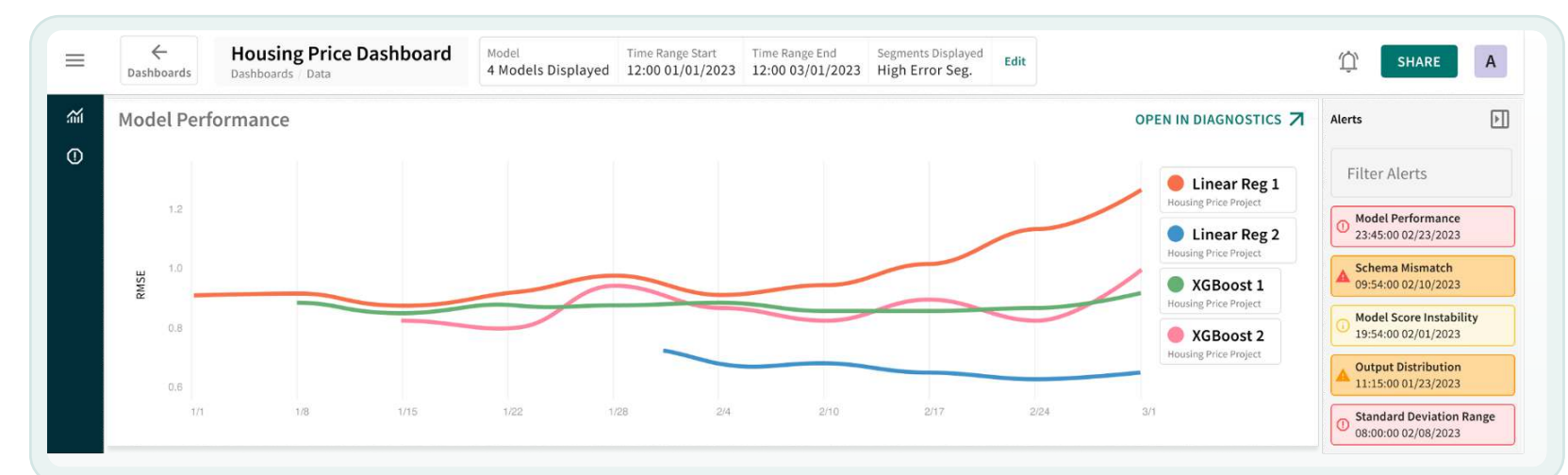
### NLP/Computer Vision

- Track NLP and Computer Vision models for regression and classification
- Track drift on NLP Embeddings (coming soon)

### Out-of-the-box metrics

Track models across a broad range of metrics like model performance, drift, fairness, and data quality:

- **Model performance** - Track classification and regression performance with industry-standard measures like AUC, RMSE, WMAPE, NDCG
- **Data quality** - Identify and track common data issues like invalid numerics, missing values, schema mismatches, out of range and unrecognized categorical values
- **Segment performance** - Define specific segments of your business and track performance over time
- **Fairness/Bias** - Analyze protected groups and utilize disparate impact ratios over time to look into segments and data sets showing possible unfair bias
- **Drift** - Track score and label drift; identify features that are most influential for drift
- **Custom metrics** - Track business KPIs and custom model or prediction impact metrics



The TruEra Monitoring Dashboard provides multi-model support in a single UI, where users can analyze across models and filter for error-prone segments simultaneously

# Key capabilities

## Alerts and Notifications

### Real-time alerts

Set alerts to warn of risky situations based on any AI quality metric that TruEra monitors, including model performance, drift, data quality, business KPIs, and segment performance

### Notifications

Automatically notify on-call teams via email when critical conditions occur

### Annotations

Track issue drivers and common resolutions for alerts, anomalies, and outcomes

## Root Cause Analysis Workflow

All-in-one workflow of TruEra Monitoring and TruEra Diagnostics provides easy debugging

- **Identify negative trends and anomalies** through dashboards and alert history
- **Select time periods with error-prone segments** through early warning detection
- **Perform root cause analysis to debug and retrain** as needed in a single workflow



“We see TruEra as an essential partner...  
in how we build and operationalize higher-quality, trusted  
AI models faster and more efficiently.”

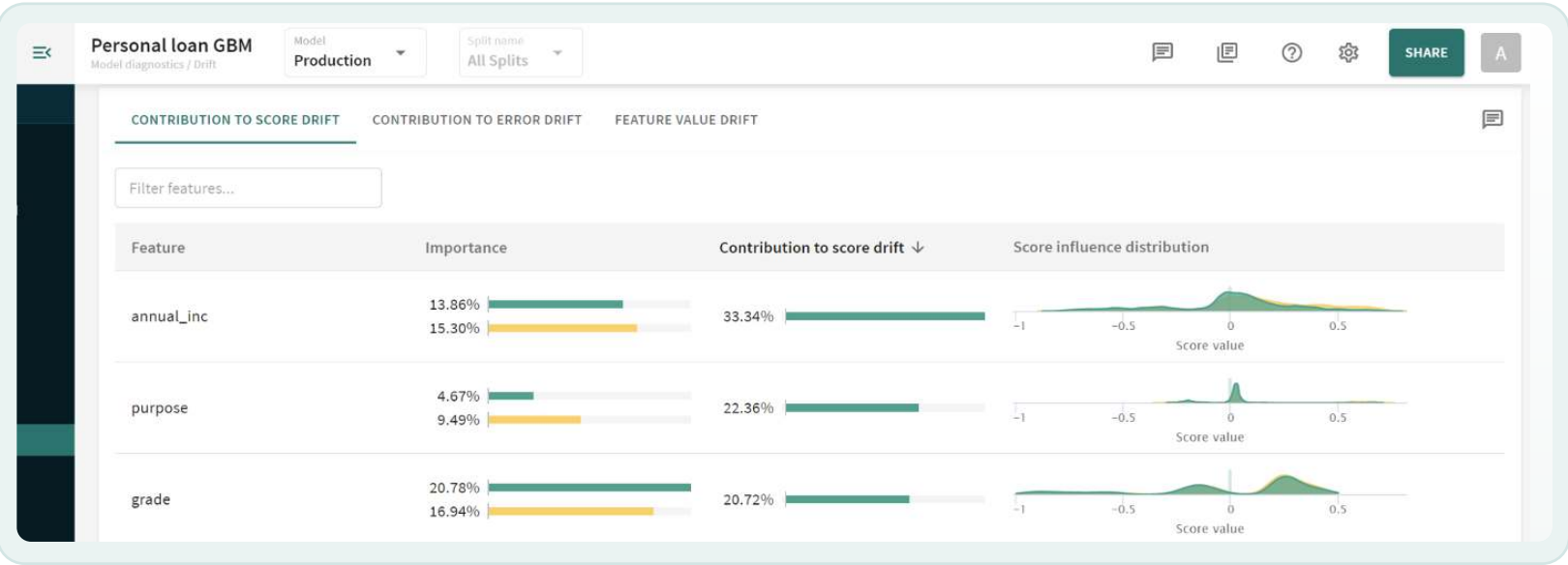
- Vishu Ramachandran, Global Head, Retail Banking, Standard Chartered

## Deployment and Configuration

- Delivered as a multi-tenant SaaS offering
- Option to deploy within a customer’s private cloud environment of choice
- Deployment time of 1 day to 2 weeks, depending on hosting location
- SOC2 type 2 compliant (Summer 2023)

## Integration

- Data ingestion via Python SDK, CLI, and REST APIs
- Optimize and automate data ingestion into TruEra Monitoring services
  - JDBC connectors, BigQuery Tables, Storage Blobs, AWS Sagemaker
  - Petabyte (PB) scale production model monitoring
  - Ability to push data and perform automated pulls with TruEra



Users can perform root cause analysis to understand which features are driving score drift, via tight coupling with TruEra Diagnostics.