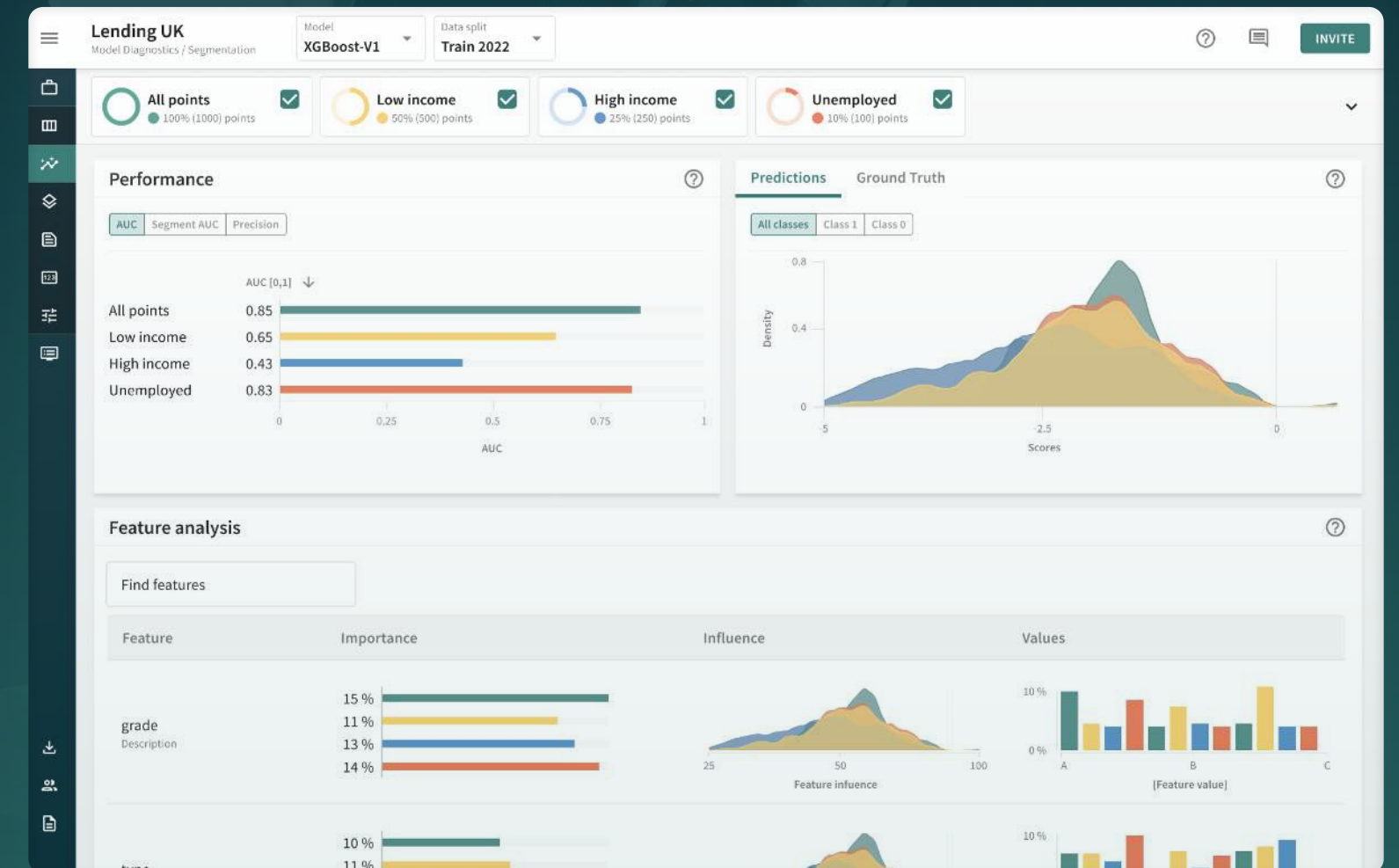# TruEra Diagnostics

Drive AI Quality with fast, comprehensive testing and explainability

Billions of dollars are spent towards the development of AI and ML models globally, but nearly 90% of models never make it to production. The lack of systematic testing, the long lead times required to debug issues, and the lack of AI explainability have created a nearly uncrossable gap when it comes to achieving high model quality and then getting models approved.

TruEra Diagnostics gets models into production faster by providing comprehensive model evaluation and testing technology that promotes higher model quality, acceleration of development iterations, and greater transparency. Its best-in-class explainability, robust set of analytics, and systematic testing allows users to debug precisely and develop top-performing models that drive business value with confidence.

TruEra provides a robust set of analytics and automated testing that drive model performance and trustworthy AI

Key benefits

★ Ensure high quality models

Leverage a comprehensive set of analytics paired with automated, systematic testing

⚡ Debug and optimize models fast

Compare and optimize the best performing models; uncover model weaknesses quickly

🔍 Achieve best-in-class explainability and reporting

Explain how your model works to stakeholders with intuitive dashboards and reporting

⊞ Integrate easily into complex ML tech stacks

Evaluate and retrain models across different platforms and tools, creating flexibility

Key capabilities

Automated Test Harness (AIQ Tests)
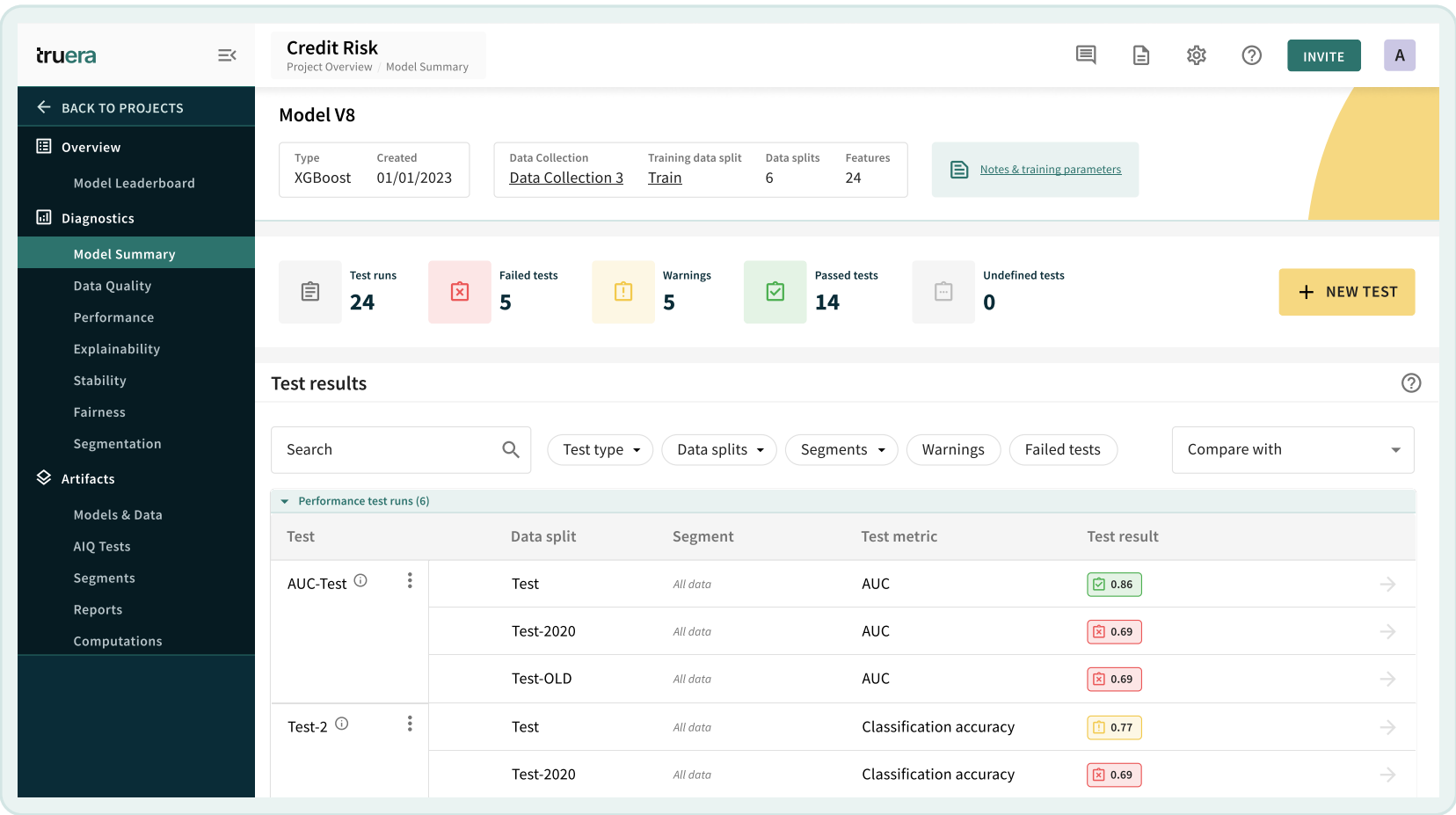
Automated, Out-of-the-box Testing

Default performance tests check for accuracy for both regression and classification models.

Automated, Systematic Testing

Create customized testing based on TruEra's powerful analytics. Can be set to run automatically against new models for performance, stability, and fairness throughout a model development lifecycle.

Metric-threshold Tests

Examine whether a metric is higher or lower than a given threshold for a given model. Displays warning results if model performance falls below a certain threshold.

TruEra's automated Test Harness scores the performance of different tests based on classification accuracy and MAE regression

Comprehensive Debugging and Analytics

Model Performance

Analyze model accuracy, score distribution, ROC-AUC curve, and precision-recall curve.

Feature Importance

Understand which features (model inputs) have the highest average influence on your model.

Stability Testing

Evaluate the ability of your model to perform on datasets beyond the initial training dataset, across data splits.

Reliability

Gain confidence in predictions of your model with an in-depth review of logits score, over-reliance, and calibration.

Conceptual Soundness

Align model outputs and feature behavior.

Segment Analytics

Understand model accuracy and errors by segments and identify areas of improvement. Automatically generates segments of the population on which the model is particularly error-prone.

Data Quality

Identify missing and inappropriate values across data sets and splits.

Fairness/Bias

Understand how models behave towards different populations, including protected populations. Evaluate disparate impact ratios and disparity analysis.

Key capabilities

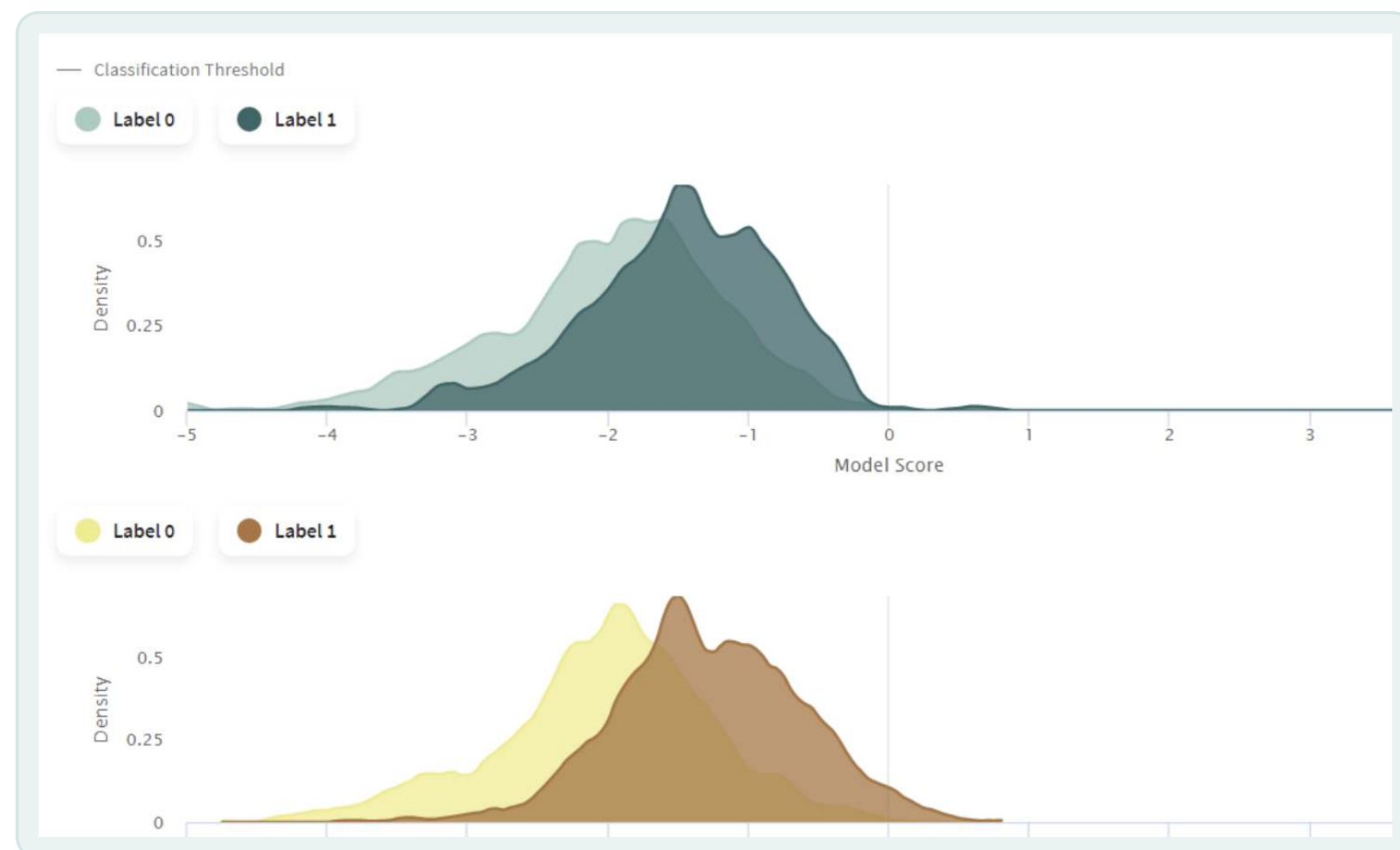## Model Comparison and Reporting

Model Leaderboard

Compare different models found in a single project based on accuracy and other performance metrics; examine split performance.

Model Summary

In depth-analysis of individual models. Easily track the status of models in development.

Intuitive Reporting

Easily export and share test results for a variety of use cases.

TruEra's intuitive dashboard provides model-to-model comparison across a single project and identify top performers based on various metrics

Compatibility

Integration and workflow

TruEra is quick and easy to deploy, even in complex enterprise environments.

Deploy on-premises or on your cloud

Includes public cloud providers like AWS, Google, or Azure.

Fast setup and easy user administration

SSO integration and local TruEra authentication.

Easy integration to your existing ML stack

Provide common model development solutions, such as AWS Sagemaker, Microsoft Azure, Vertex.ai, Dataiku, Data Robot, or H20.ai, and model serving solutions.

Scale quickly

Analyze high volumes of machine learning models and their data.

Easily export data via APIs

Integrates to applications or business intelligence solutions, such as Tableau and Looker.