

# INRULE MACHINE LEARNING

Predictions with the Why® convert artificial intelligence into actionable insights – without code.

## BENEFITS

- Improve transparency to comply with emergent legislation
- “No code” ease of use brings machine learning to anyone
- Extract actionable insights from your models
- Measure how key factors in your data change over time
- Rapidly identify data engineering errors
- Confirm robustness against adversarial examples
- Enhance customer relationships by providing complete clarity

## USE CASES

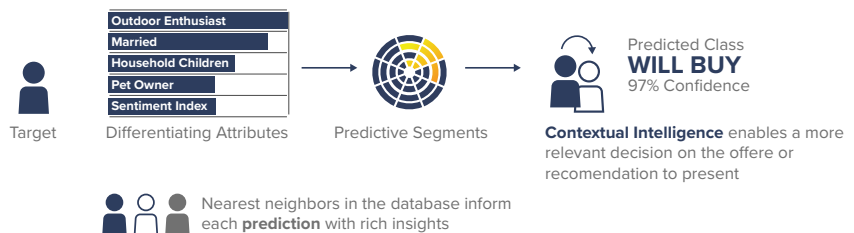
- Audience segmentation
- Fraud prevention
- Identity resolution
- Customer predictions
- Insights and analytics
- Personalization
- Adaptive authentication
- Anomaly, pattern and trend detection

## Overview

When we make a decision, there’s usually a reason behind it. The same goes for machine learning models. Though the process is less emotional, they’re still connecting data to come to a conclusion. Most companies who rely on these predictions don’t bother thinking about the “why” behind them, but this transparency is actually crucial. Why the “why?” It’s not just something that’s good to have, it’s necessary information.

Emerging legislation is pointing toward greater transparency in AI-enabled applications. In some cases, it is already required by law – or soon will be. Soon it may be required to document in detail why, for example, a benefits claim was denied – including all the predictive factors that went into the decision. But the why goes beyond legal requirements.

If you can’t understand why an AI platform delivers a certain answer, how can you be completely confident about the decisions you make using that information?



## Transparency Can Be Transformative

InRule® Machine Learning enables teams to develop a wide variety of machine learning models, at massive scale, each with unparalleled explainability. That means the models don’t just provide you with predictions but give you every single reason behind each one. Our suite of modeling engines provide solutions that deliver any combination of similarity search, classification, clustering and recommendation. This kind of information isn’t just for data scientists, but for anyone looking to enhance processes and outcomes.

Maybe you’re looking to improve your audience segmentation in order to reach the right people at the right time. Or want to understand why past models either worked or failed. Maybe you’re just trying to earn consumer trust through transparency. InRule can help with all of that—and so much more. We’ve already helped global enterprises realize significant performance gains, efficiencies, insights and customer experiences.

How can explainable AI help you?

# INRULE MACHINE LEARNING FEATURES

Our suite of modeling engines is designed for users to build state-of-the-art models for a variety of uses. In fact, the application is so easy to use that training usually only requires a half day. Support your use cases with explainability, segmentation at scale, speed to insight, audibility and compliance—quickly and easily.

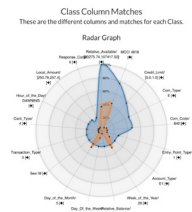
**AUTOML** Guided, no-code model-building process reduces the risk of human error and allows experienced and novice practitioners to quickly build and deploy machine learning-powered applications. Data scientists can quickly deliver prototypes and iterative improvements using model explainability that reveal areas of model weakness.

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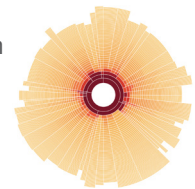
**BIAS DETECTION** Our bias detection evaluates the fairness of models, ensuring people who are similar (on the basis of reasons most relevant to make the modeled decision) receive equal treatment. Scouring to the deepest subsets of models to explore millions of data paths assures that the model operates with equal fairness within groups and between groups.

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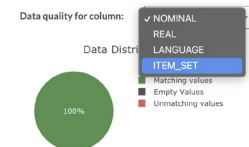
**AUDITABLE PREDICTIONS** Every prediction comes with feature weights and nearest neighbor objects with keys tied back to the training object database. This means every prediction stores a rich set of information as to why the model made the determination it did for easy retrieval and access. Prediction feature weights can be analyzed and reported at global or local levels, stored, or passed to automated decisions as inputs.



**UNPARALLELED SEGMENTATION** Agglomerative and K-Means clustering support dynamic predictive clustering. Control settings are provided for maximum number of clusters, minimum number of objects to create a cluster and number of factors revealed by cluster. Unsupervised and supervised clustering with tunable visualizations and sub-cluster comparison capability are also available.



**DATA INGESTION MADE EASY** No need to fill in missing values, normalize data or one-hot encode categoricals. Datasets are stored in folders and can span files, so all files in a folder can be treated as a single dataset and input columns have statistical analysis by type automatically generated.



**NATURAL LANGUAGE READY** Automatic stemming and conversion to bag of words for language string input enables users to handle use cases where ingesting product names, social media comments, web pages, resumes, documents, etc. is part of the data input.

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**COMPREHENSIVE MONITORING** Model analytics reporting, including global feature importance and unseen data reports, are provided as well as real time prediction monitoring and notification of statistical issues.

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**AUTOMATED MODEL DEBUGGING** InRule provides model debugging by revealing the data changes associated with model performance. This enables users to see and adjust quickly for data input changes that cause model performance issues and address them in a timely manner versus facing lengthy research time.