

BENEFITS AT A GLANCE

- Enable multiple options and flexibility in machine-learning deployments
- Improve consumer experience with sophisticated scoring models, ensuring early and assertive fraud detection
- Enhance fraud prevention department operational efficiency through adaptive machine learning models that improve false positive ratios and detection rates
- Gain business independence to build adaptive models through the intuitive ACI[®] Model Generator[™]
- Dedicated data scientists team applying machine learning algorithms in payments, banking and retail fraud detection
- Leverage fraud consultant expertise in building and maintaining your own scoring models
- Fully integrated scoring engine allows institutions to import and deploy predictive machine markup language (PMML) models
- Ingest external scores to improve fraud prevention strategies

ADAPTIVE MACHINE LEARNING FOR FINANCIAL CRIME PREVENTION, CONTROL AND DETECTION

ACI[®] PROACTIVE RISK MANAGER[™]



WHAT IS MACHINE LEARNING?

Machine learning is a branch of artificial intelligence in the field of computer science that uses statistical techniques to create algorithms with the ability to “learn” from data, meaning that their competence to perform a specific task improves over time as more data is made available. For fraud prevention, the class of algorithms used is predictive algorithms. The payments risk management field has implemented machine learning techniques for several years now to enable and improve detection of fraudulent transactions.

MACHINE LEARNING MODELS ARE PROVING TO BE HIGHLY SUCCESSFUL IN PROVIDING EARLIER DETECTION, ENHANCED FALSE POSITIVE RATES, REDUCED FRAUD LOSSES AND INCREASED CUSTOMER EXPERIENCE.



WHAT CAN ACI WORLDWIDE® PROVIDE?

ACI Worldwide®'s experience on building machine learning scoring models for its customers goes back 20 years. The deep global knowledge and expertise driven by ACI®'s leading data science team and payment intelligence professionals results in many sophisticated models deployed to top-tier banks around the world. These models are proving to be highly successful in providing earlier detection, enhanced false positive rates, reduced fraud losses and ultimately, increased customer experience.

At ACI, we also recognize that the finance industry is changing, and to meet the requirements of leading banking organizations and be ahead of fraudsters, we continually adapt our technology to provide multiple options and flexibility when it comes to adaptive machine learning capabilities.

ACI MODEL GENERATOR

The Model Generator is an optional component of Proactive Risk Manager. It empowers business users to build and deploy their own adaptive machine learning models, enforcing an effective methodology and resolving deployment, maintenance, PCI, data access, highly specialized skill needs and various other challenges that inhibit most organizations from truly leveraging the business benefits from those capabilities.

Through the workbench provided, the business users can create their own features. The solution will perform the analytics to ascertain the performance and publish the results. Users then graphically and comprehensively assess its ability to distinguish between fraud and non-fraud, gaining qualified and quantified knowledge on the actual value of such features for the target scenario. With such information in hand, users may decide to make further enhancements to the features and validate differences between interactions, until reaching the desired outcome.

Features can be static or adaptive, will be individually configured to the maintenance plans for which they need to sustain relevance and will be stored in the self-maintainable library from which users will then build their models.

The business team then creates their own machine learning models by defining its coverage and selecting the candidate features to compose such models. The solution trains the model, benchmark over an outside window and publishes the results. Users then graphically and comprehensively assess the new model performance through diverse metrics, compare the results between models or previous versions of the same model, and gain knowledge to decide whether or not to take a new model to production.

Promoting a model to be executed with detection or prevention controls on incoming financial and non-financial events is just a few clicks away. Immediately after deploying a model, its performance is already at peak because its features are leveraging the existing ecosystem, so business users can create or adjust their controls and benefit from the new model on their strategies.

Putting it simply, the Model Generator is about democratizing machine learning, delivering transparency and independence, and empowering business users.

PROACTIVE RISK MANAGER SCORING ENGINE

The Proactive Risk Manager Scoring Engine is ACI's proprietary engine that guarantees payments-grade non-functional requirements (NFRs) and empowers ACI neural models built by ACI's data science team. These models leverage the entire library of features collected over years and custom-built features for the highest coverage of institution's specific channels, products, services and risks. ACI's neural models are built based on historical data as well as confirmed fraud.

The Proactive Risk Manager Scoring Engine, in combination with one or multiple ACI neural models, acts as an optional and additional component to ACI Proactive Risk Manager™. The Proactive Risk Manager Scoring Engine generates scores between 1 and 999 that qualify the potential risk of an event. The score generated by the models, accompanied by the reason that drove such score, can then be used for decision making as well as within multiple controls and strategies, functioning as a new data element to enhance the detection capabilities.



UNIVERSAL SCORING ENGINE

The Universal Scoring Engine is ACI's proprietary engine that empowers PMML models, an industry-standard language for predictive modeling, to be imported and processed responsibly in payment environments.

PMML models can be created by third parties or in-house data science teams, and features for PMML models can be calculated within the Universal Scoring Engine and/or externally and then provided to the Universal Scoring Engine through the ACI risk orchestration solution.

The Universal Scoring Engine offers payments-grade NFRs and acts as an optional and additional component to Proactive Risk Manager in combination with one or multiple PMML models.

ACI Worldwide®, the Universal Payments® (UP®) company, powers electronic payments for more than 5,100 organizations around the world. More than 1,000 of the largest financial institutions and intermediaries, as well as thousands of global merchants, rely on ACI® to execute \$14 trillion each day in payments and securities. In addition, myriad organizations utilize our electronic bill presentment and payment services. Through our comprehensive suite of software solutions delivered on customers' premises or through ACI's private cloud, we provide real-time, immediate payments capabilities and enable the industry's most complete omni-channel payments experience.

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The Proactive Risk Manager feature calculator is also available for Universal Scoring Engine customers and enables the usage of data residing in Proactive Risk Manager's data lake for static or adaptive feature calculations, including but not limited to detailed events history, profiles, fraud marks, blocks, SMS interactions, operational actions, etc.

The model outputs a score qualifying the potential risk of an event. The score generated by the models can then be used for decision making as well as within multiple controls and strategies, functioning as a new data element to enrich the enhanced capabilities.

THIRD-PARTY ENGINES AND MODELS

Proactive Risk Manager, through ACI risk orchestration, can receive and consume scores calculated totally outside of an ACI solution. While the ACI risk orchestrator can coordinate the events, routing and governance required to augment those events with external scores, it is up to the third-party or in-house built engines to deliver through the NFRs.

CONCLUSION

Machine learning is an indispensable tool in any payments ecosystem. The capability it provides increases assertiveness and efficiency of any risk mitigation strategy. With the ever-increasing digitization, data volumes, variety and complexity, and advancements in technology, it is unquestionable that the role that machine learning plays in risk management has become imperative. Giving you the flexibility to deploy your preferred approach is as important as making it maintainable, sustainable and future-proof. The risk management professionals that embrace machine learning as part of their daily jobs will no longer think of it as a distant strategy or even bullet-proof solution, but rather as a tactical and comprehensive on-hands tool that delivers on business objectives.

