Fight Fraud and Financial Crimes With Analytics and Artificial Intelligence

Advanced analytics and machine learning from SAS power more effective and efficient fraud and financial crimes programs
Fight Fraud and Financial Crimes With Analytics and Artificial Intelligence

Advanced analytics and machine learning from SAS power more effective and efficient fraud and financial crimes programs.
The Risks Are Escalating

Fight back with the latest arsenal of fraud and anti-money laundering solutions
The realities of fraud and financial crimes are sobering. According to PwC’s 2018 Global Economic Crime and Fraud Survey:

- **Fraud is pervasive**: 49 percent of organizations worldwide report being victims of fraud and financial crime (up from 36 percent in 2016).
- **The potential exposure is high**: Less than one-third of respondents said their companies did risk assessments in critical areas such as bribery, corruption, money laundering, sanctions or export controls.
- **Tuning fraud detection systems is a science** that, when done wrong, wastes time and causes customer friction; 34 percent of respondents said their financial crimes systems produced too many false positives.

When one corrupt tactic is uncovered and blocked, the criminals simply change course. They launch more complex schemes, involve more entities to cover their tracks, and move in new directions.

Are your detection and prevention strategies keeping pace?

Technology is redefining what’s possible in fighting fraud and financial crimes. SAS is at the front lines of that quest, offering solutions for any organization that wants to:

- Protect itself from reputational, regulatory and financial risks.
- Reduce the cost of fraud and financial crimes prevention.
- Gain a holistic view of risk across functions.
- Include cyber events in regulatory report filings.
Combat Crime.
Protect Customers.
Preserve Program Integrity.

SAS® fraud and financial crimes solutions serve commerce, finance and government.
By applying advanced analytics and powerful machine learning on a unified platform, SAS helps organizations around the globe detect more financial offenses, reduce false positives and run more efficient investigations.

Using SAS solutions created specifically for their areas of expertise:

- **Financial institutions** make fast, on-target decisions to reduce the monetary, reputational and compliance risks of fraud and money laundering.
- **Retailers** monitor millions of transactions and determine whether to flag or approve card purchases at the point of sale while reducing the chance of inconveniencing customers with false alerts.
- **Government agencies** gain a broad view across multiple data sources – such as tax, health care, benefits, workforce and public safety records – to uncover fraud, waste and abuse in government programs.
- **Insurance companies** use entity analytics and network analysis to uncover collusion and focus on stopping the most costly and malicious fraud networks.
- **Procurement organizations** use advanced analytics to identify bid riggers, vendors of counterfeit parts, suspicious relationships among entities, or vendors testing the system to find the threshold of scrutiny.

Leading-edge analytics and hybrid modeling techniques find threats faster and more accurately. Embedded machine learning enhances every step of the process – continuously fine-tuning detection algorithms, streamlining and automating case management, and boosting overall performance.
Detect Threats Earlier and More Precisely

With advanced analytics and artificial intelligence
To uncover new schemes or handle increasingly sophisticated tactics, you need more than rules. More than standard analytics. You need adaptive techniques – including a form of artificial intelligence known as machine learning – the standard for SAS fraud and financial crimes solutions for decades.

The SAS approach combines a variety of techniques:

- **Supervised machine learning** algorithms learn from historical data, identifying patterns of interest that an investigator might want to flag.
- **Unsupervised machine learning** examines data that does not contain identified fraud to uncover anomalies and patterns of interest, as well as potential risks you might not think to look for.
- **Network analysis** identifies paths, connections and hubs that reveal patterns and social networks of interest that are essential to an investigator’s toolkit.
- **Text analytics** analyzes text to accurately identify expressions of names, times, companies, monetary values and more through search, content categorization and entity extraction.

Our approach also enables you to build your fraud detection on the latest machine learning methods – such as deep learning neural networks, extreme gradient boosting and vector machines – as well as proven methods such as logistic regression, self-organizing maps, random forests and ensembles.

Combining these techniques has proven to be far more accurate and effective than approaches based on rules or singular analytics. For example, a SAS digital payment model alerts on 50 percent of fraud in real time – at a cost of only 0.5 percent of the portfolio, with very few false positives.

The system can launch 10,000 iterations of strategies to arrive at a "champion" model with exceptional predictive power. And since rules are still essential, machine learning examines masses of data to help define precise detection rules and keep them current.

Machine learning – a form of artificial intelligence – is a powerful force for improving both the accuracy and efficiency of fraud detection.
Reduce the Costs of Managing Investigations

Automate processes with analytics for more efficient and intelligent case management
On average, 60 to 70 percent of case investigators’ time is spent collecting data about a subject. Still more time is spent deciding where to focus and preparing reports.

What if investigators came into work each day to find their cases already prioritized and populated with the necessary data? The analytics-driven SAS alert and case management solution can automatically:

- Prioritize cases, recommend investigative steps and fast-track straightforward cases.
- Enrich alerts with detail about the associated customers, accounts or beneficiaries.
- Intelligently find and pull data for a case from internal or third-party sources.
- Present data in clear visualizations appropriate for the type of activity under review.
- Populate and prepare electronic SARs for regulators.

By automating these processes with machine learning, SAS clients are reducing time to case decision by 20 to 30 percent. And with each case it processes, the system learns and adapts to emerging threats.

Using machine learning to automate case enrichment for triage, SAS clients are reducing time to case decision by 20 to 30 percent.
Gain a Holistic View of Risk

Converge fraud, anti-money laundering and cybersecurity programs
It only makes sense to bring fraud, AML and cyber functions together. Much fraud and AML data is similar, and cybersecurity is a key element of AML compliance.

SAS solutions for fraud, AML and cybersecurity share a common platform and resources – a ready foundation to reap the advantages of convergence:

• Share technology investments across systems that have many commonalities.
• Gain a more holistic view of financial crimes risk for a client or counterparty.
• Score transactions for multiple types of risk during one authorization.
• Reduce the incidence of redundant reviews of the same activity.

An additional level of SAS Data Management uncovers common elements – domain names, IP addresses, devices, etc. – revealing global criminal activity that would have otherwise gone undiscovered. You gain the ability to see risk across functions and bring cyber events into routine AML and SAR reports.

Whether onboarding a loan applicant, qualifying a card transaction or uncovering terrorist financing, there are opportunities to learn from every interaction when viewed in broader context.

Once a luxury, real-time transaction monitoring is now a baseline requirement, not only for financial transactions, but for digital event data surrounding authentication, session, location and device.
Bring Due Diligence to a New Level

Adopt deeper and more agile know your customer (KYC) processes
No financial institution wants to be used, intentionally or unintentionally, as a channel for money laundering. You must verify the real identity of entities that do business with your organization and who actually receives their transactions. The risks and penalties for weak controls have soared. So have the baseline standards for KYC processes. SAS has responded by:

- Fortifying and speeding authentication processes that validate digital devices and in-person applicants.
- Using robotic process automation (or RPA) to automate searches and queries of third-party data.
- Supporting new data elements, such as ownership percentages and controlling interests.
- Making it easy to bring unstructured data – such as text, images and video – into a richer entity profile.

SAS is pushing the envelope in using natural language processing and image recognition for document query and retrieval – and getting remarkable results.

Imagine if you could reduce the time to identify, classify and analyze trade documents from 700 hours to a matter of minutes. Or if you could scan 9,000 SWIFT messages for words associated with money laundering or terrorism – in less than a second per message. With SAS, you can.

Who stands to gain from a transaction? Knowing ultimate beneficial ownership provides greater clarity into actual corporate structures, sources of funds, tax liabilities, illicit currency flows and government corruption.
SAS® for Fraud and Financial Crimes: Rapid Results

SAS fraud, AML and security intelligence solutions deliver rapid results for organizations around the globe. These successes just hint at the possibilities.
Identify card fraud at the point of sale
A European payments processor uses SAS Fraud Management to create a customer behavior profile on its 19 million cardholders. That profile drives a risk score for all transactions in real time at the point of sale.

As a result, fraud detection has soared 50 percent, card fraud has been curtailed by 50 to 70 percent, and false positives have been cut in half.

Find false claims before settlements are paid
A large insurance company was uncovering more than €5.3 million (US$6.2 million) of fraud a year – a problem that was escalating in the era of self-service claims entry. Curbing that fraud was essential for preserving fair premiums for honest customers.

With SAS Detection and Investigation for Insurance, evidence starts to build the minute a claim is submitted, followed by rapid assessment of circumstances and claimant history. With analytics-driven detection and triage, the insurer now detects more fraudulent claims before they are paid.

Reduce the burden of false positives for money laundering
The screening system at a bank on the list of global systemically important banks (G-SIBs) was flagging about 1,000 false positives a day – an unproductive use of time and resources. It needed a better way to detect potential money laundering among its 190,000 customers.

The bank’s SAS Anti-Money Laundering solution now identifies patterns in big data. SAS Visual Analytics brings those discoveries to life for business users to explore. Within months, the bank saw the number of false positives drop to 100 to 150 per day, freeing the compliance staff to focus on the most meaningful cases.

Find what you don’t know
A large global financial institution used SAS to find customers that had not been properly classified at onboarding – possible risks to the institution. Scanning nearly 2 billion transactions in 10 minutes, SAS algorithms found 416 suspected money service businesses (89 previously unknown or unregistered), which led to dozens of productive cases.
What Analysts Are Saying

SAS is consistently named a leader in fraud and AML solutions
Analysts consistently position SAS as a leader in fraud and anti-money laundering solutions, thanks to innovations such as machine learning, intelligent case management and in-memory processing for decisions in milliseconds.


“Differentiating elements of SAS’s solution include the significant investment in industry and fraud prevention technology that underpins it, and its enterprise approach. SAS’s data aggregation capabilities, combined with analytics and visualization, support a holistic view of financial crime risk management.”

Chartis: RiskTech Quadrant 2017: Enterprise Fraud Technology Solutions

IDC had high praise for SAS for Procurement Integrity:

“With over 80 predefined procurement scenarios and advanced analytics built into the product, SAS for Procurement Integrity helps identify risky and exceptional behavior … SAS for Procurement Integrity is a welcome product for all businesses, regardless of size, industry, or location.

Procurement Fraud Uncovered With New SAS Solution, SAS for Procurement Integrity - September 2017

Celent praised SAS capabilities and the partnership that brings high-end modeling to smaller organizations:

“Through SAS Viya platform capabilities, investigators now have easier access to advanced SAS data analytic techniques. Simpler visualization workflow design provides interactive visualization and search components to help build, gather, explore, visualize and manipulate data for forensic analysis and complex investigations.”

Under the Spotlight: Innovative Vendors in Financial Crime Case Management Technology – August 2017
The SAS® Difference
An enterprise platform from the analytics leader
A true enterprise solution on a single platform

Some vendors have tacked data management and business intelligence (BI) capabilities onto their fraud tool. Others are data management or analytics vendors who added on fraud capabilities.

SAS stands out for operationalizing analytics in an end-to-end platform. Rich fraud detection and investigation capabilities are coupled with data management, advanced analytics, machine learning and business intelligence. Year after year, Chartis has named SAS its leader in enterprise fraud solutions for the completeness of our solution and our domain expertise.

Advanced analytics and machine learning

SAS is the leader in advanced analytics, with double the market share of our nearest competitor. Our industry and domain experts around the world keep your solution current with the latest security intelligence developments and tuned to your business needs. We deliver:

- Hybrid models that combine methods for more accurate results.
- Entity link analysis to uncover non-obvious relationships.
- Patented, signature-based profile analysis to capture customer behavior at every transaction.
- Natural language generation that automatically creates notes and narratives for alerts.

Embedded machine learning brings new intelligence and automation to the end-to-end process, including rule and detection model creation, prioritizing alerts and automating case management.

100 percent real-time scoring and decision making

The SAS streaming and orchestration layer provides exceptional throughput (more than 10,000 transactions per second) and low latency (less than 50 milliseconds response time). This powerful machine learning and decision engine makes it possible to score 100 percent of transactions in real time, using advanced analytics and dynamic rules to support immediate decisions.

A common technology foundation and modular solutions

A choice of deployment options minimizes your capital investment and simplifies IT, while getting you up and running sooner. Multiple departments can share one unified SAS installation to support various business lines, channels and payment types. Integrate all your data - internal and external, from many sources - with one flexible solution.

SAS continues to advance analytics to offer the most effective financial crimes risk platform available today.
7 Keys to an Effective Defense
Take a unified approach to fraud, compliance and security. Only fraud, AML and security intelligence solutions from SAS deliver an essential layer of protection backed by domain expertise and the world’s best analytics.

1. **Converge fraud and AML programs.** Centralize insights from multiple sources, including cyber event data, for more complete customer risk assessments in broader context.

2. **Establish consistent business processes.** Intuitive workflow and case management support more efficient investigations, faster resolutions, fewer false positives and higher productivity.

3. **Reduce false positives** with advanced analytics and machine learning so investigative analysts can focus on the cases that pose the most risk to the organization.

4. **Intelligently prioritize alerts** for triage, investigation and disposition. Quickly see areas of interest and where to focus first.

5. **Conduct more efficient, targeted investigations** through interactive visualizations. Import, search, filter and visualize the results in different ways to reveal patterns, people and events hidden in complex data.

6. **Easily document findings** with screen captures, analyst notes and images, and advanced reporting to present data to the institution’s board of directors, auditors and examiners.

7. **Adapt quickly** to an ever-changing landscape with user-friendly data administration and configuration tools, as well as automatic updates. Incorporate new data sources. Evolve processes. Expand intelligence analytics to other areas of the business, or design new components and screens based on changing needs.

 Quickly distinguish between white noise and genuine risk, then investigate those risks in an intuitive, visual case management workspace.