



# PERSPECTIVES

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**Detecting Fraud Using  
Emerging Technology:  
Don't Be Afraid to  
Innovate**

Our perspectives feature the viewpoints of our subject matter experts on current topics and emerging trends.

## INTRODUCTION

In today's rapidly evolving digital landscape, fraud and financial crime have become an increasingly complex and pervasive issue for organizations, big and small, global, and domestic. Fortunately, advanced technology and artificial intelligence (AI) have emerged as invaluable tools in the fight against malfeasance. By leveraging sophisticated algorithms, data analytics, and machine learning capabilities, combined with traditional forensic accounting principles, these technological advancements empower investigators and compliance professionals to enhance their investigative processes, identify patterns and anomalies in vast amounts of data, and proactively detect unusual activities. The integration of advanced technology and AI not only accelerates these types of investigations but also supports compliance with regulatory standards, ultimately leading to more robust and effective fraud prevention and detection strategies.

But the technology on its own is merely a conversation piece. True innovation is only realized when the right professionals put it to good use. [Forensic accountants and investigations specialists](#) are needed to interpret the transaction analysis and perform the proper due diligence on suspicious individuals and entities. Investigations benefit from combining deep subject matter expertise with an analytical approach, deriving actionable intelligence from advanced technology, forensic accounting, and other fact-finding disciplines. This article focuses on how advances in AI and machine learning can aid [forensic investigations procedures](#) and further bring the detection of fraud and other financial crimes into the digital age.

### The Evolution of Fraud and Financial Crime

Fraud and financial crime, including money laundering, digital currency schemes, and sanctions violations have been hot topics for years, with companies focusing more time and money into combatting these activities. Despite these efforts, a Juniper Research report on online payment fraud said merchants and financial service organizations will spend \$9.3 billion annually on fraud prevention<sup>1</sup>. Unfortunately, fraudsters will continue to find ways to

leverage new advancements while corporations and professional services firms must improve their processes as well. However, AI and technological advancements have the potential to revolutionize financial crime detection and anti-fraud processes making them more efficient and effective than ever before.

### How Can Artificial Intelligence Be Useful in Detecting Fraud?

AI-powered systems can [analyze vast volumes of data in real-time](#), swiftly identifying suspicious patterns, trends, and anomalies that may indicate fraudulent activities. Machine learning algorithms can continuously learn and adapt to evolving fraud techniques and a litany of changing rules and regulations—enhancing detection capabilities and reducing false positives. The ability to constantly improve on processes and procedures is incredibly powerful as these algorithms can make changes to processes that generally took significant amounts of time to identify and implement under an organization's framework. Additionally, advanced technology enables the automation of time-consuming and repetitive tasks, such as data entry and document verification. This frees up resources to focus on higher-value activities such as complex investigations and strategic planning.

However, we must also recognize inefficiencies in the organizational structure and framework for AI and technological advancements to fully realize their potential. Traditionally, financial crime and anti-fraud efforts are separated into two distinct areas: compliance and security. Even so, segregating activities can lead to potential resource allocation inefficiencies. Although each field has its own unique skillsets, efforts typically track the same suspicious individuals and even use the same technology. Companies need to take advantage of potential overlap by combining efforts from both sides, especially given the increasing reliance on technology and machine learning. In fact, machine learning models operate most effectively when given as much data and training across myriad scenarios. This dual approach enables the identification of fraudulent behavior while simultaneously ensuring adherence to legal and compliance frameworks.

<sup>1</sup> <https://www.businesswire.com/news/home/20170725005147/en/Juniper-Research-Online-Payment-Fraud-Detection-Spend>

The integration of security and compliance functions allows for a comprehensive and proactive approach to fraud prevention, ultimately enhancing the overall effectiveness of an organization's fraud prevention efforts.

## Investigations and Data Analytics Disruption

Robotics and automation are expected to see continued growth due to the world's increasing reliance on technology. In the past few years especially, AI has been making headlines as its use and development provide opportunities for automation in various industries that many people fear will put them out of their jobs. Recent headlines have warned of the dangers of available AI technologies such as ChatGPT and how they are going to turn the workforce upside down. Are we right to have these concerns? Yes and no. The World Economic Forum predicts that by 2030, about 30% of all jobs will be at risk of AI automation<sup>2</sup> and while this seems to be of immediate concern, the situation may not be as dire as it sounds.

AI certainly will be taking over routine tasks, but primarily the time intensive or repetitive aspects of jobs rather than replacing critical thinking. Much like the technological advancements over the past 30 years, we have learned how to use new technology to make our workforce more efficient. Companies have been recognizing this potential, especially in the information technology field where 53% have accelerated AI adoption over the last two years<sup>3</sup>.

Similarly, AI has been making waves in investigative data analytics where analysts are often ingesting a plethora of data that can include financial transactions, as well as vendor, customer, and employee information, to name a few. The processes to standardize these datapoints into a unified framework are time consuming and repetitive. Project timelines are unnecessarily lengthened, driving up costs for clients. As analysts, it is our responsibility to stay apprised of new and emerging tools and apply these technologies to increase our efficiency for our clients. In recent years, there have been quite a few developments in AI and machine learning that allow professionals to speed up their analyses or even automate them completely.

## Machine Learning for Forensic Accounting and Financial Investigations

The best consultants use leading cloud-based technology to automate the **extract, transform, and load (ETL)** processes of investigations from structured or unstructured data sources and investigative algorithms. Prior to these recent technology advancements, the ETL portion of engagements took a substantial amount of budget—sometimes even as high as 50%. Although the result of the ETL processes typically took on a form consistent across engagements, the ingestion portion of the ETL processes would have to be custom scripted for each engagement. Utilizing machine learning and artificial intelligence, today's tools provide full automation of the ETL processes as well as various analytics and behavior algorithms that allow for customized testing and flexible reporting.

For example, a company suspects that an employee is creating false vendor invoices and is instead paying themselves. A consultant with the right expertise would be able to bring the company's vendor data, invoices, accounts payable, and more into an online platform to perform various common tests for fraud detection. In no less than a minute, that consultant could find vendors that might share a phone number, address, or bank account number with an employee alongside many other tests for conflicts of interest. This information is all available with a built-in visualization tool removing previously required time to build analytical dashboards. If needed, the consultant can also set up a system to perform active monitoring alongside existing internal controls.

Another advancement in AI is **Optimal Character Recognition** also known as **OCR**. This is a technology that can extract text from digital files into text that is searchable and copyable. Unfortunately, OCR tools within many .pdf editors prove to be extremely unreliable, especially in cases where text is difficult to read, or pages have formatting inconsistencies. An expert consultant can process bank statements, checks, brokerage statements, and other financial documents into exportable and analyzable data to support investigative efforts. As part of a test for accuracy, these new tools

<sup>2</sup> <https://www.weforum.org/agenda/2020/10/dont-fear-ai-it-will-lead-to-long-term-job-growth/>

<sup>3</sup> <https://www.ibm.com/downloads/cas/GVAGA3JP/>

compare beginning and ending balances of statements with the extracted transaction details – any mismatches are flagged and returned to the user to ensure accuracy.

## Forensic Accountants Need to Innovate

Innovation has played a pivotal role in shaping the field of forensic accounting throughout history, revolutionizing the way financial investigations are conducted and uncovering fraudulent activities. Not too long ago, the field of forensic accounting was a foreign concept to many. Most historical research and publications were focused on showcasing the extent of existing fraud and convincing organizations the importance of implementing anti-fraud and detection efforts and the [significant cost savings forensic accountants provided](#).

However, swift technological advancements and investment by organizations have provided forensic accountants with [powerful tools and techniques](#) to analyze complex financial data, detect irregularities, and deliver more accurate results. Looking ahead, forensic accountants must continuously be searching for innovation to further transform the forensic accounting role. The ongoing development of advanced data analytics, machine learning algorithms, and blockchain technology will enable forensic accountants to tackle emerging challenges in an increasingly complex digital landscape. These innovations will bolster the ability to detect and prevent fraud but will require forensic accountants to adapt to a fast-changing environment.

## CONCLUSION

Fraud detection and investigative data analytics are just the beginning of innovation for AI and machine learning tools for legal and regulatory consultants. It is important to not be afraid of these developments that seemingly take away work from us, but rather embrace them, learn how to use them, and grow with them. By taking away the repetitive, manual, lower-skilled work, these tools free up analysts to focus on the more important project tasks at hand that might require deeper analysis or critical thinking. As investigative data analysts, it is our job to keep up with the times, understand new technologies, and figure out how to use them to our advantage. Amazon founder, Jeff Bezos, once said,

“what’s more dangerous is not to evolve” and this rings true especially in this new era of AI and automation. Let’s use it to our advantage.

The growth of AI and advanced technology is one of the most pivotal times in the fraud landscape. Fraud and money laundering continue to be prevalent in even the largest of organizations and will continue to be as prevalent as fraudsters constantly develop new methods and leverage the same tools organizations can use to improve their fraud prevention. However, with proper application of these emerging technologies for both fraud prevention and [internal investigations](#), organizations can significantly improve the efficiency and effectiveness of their anti-fraud response to match an ever-changing landscape.

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