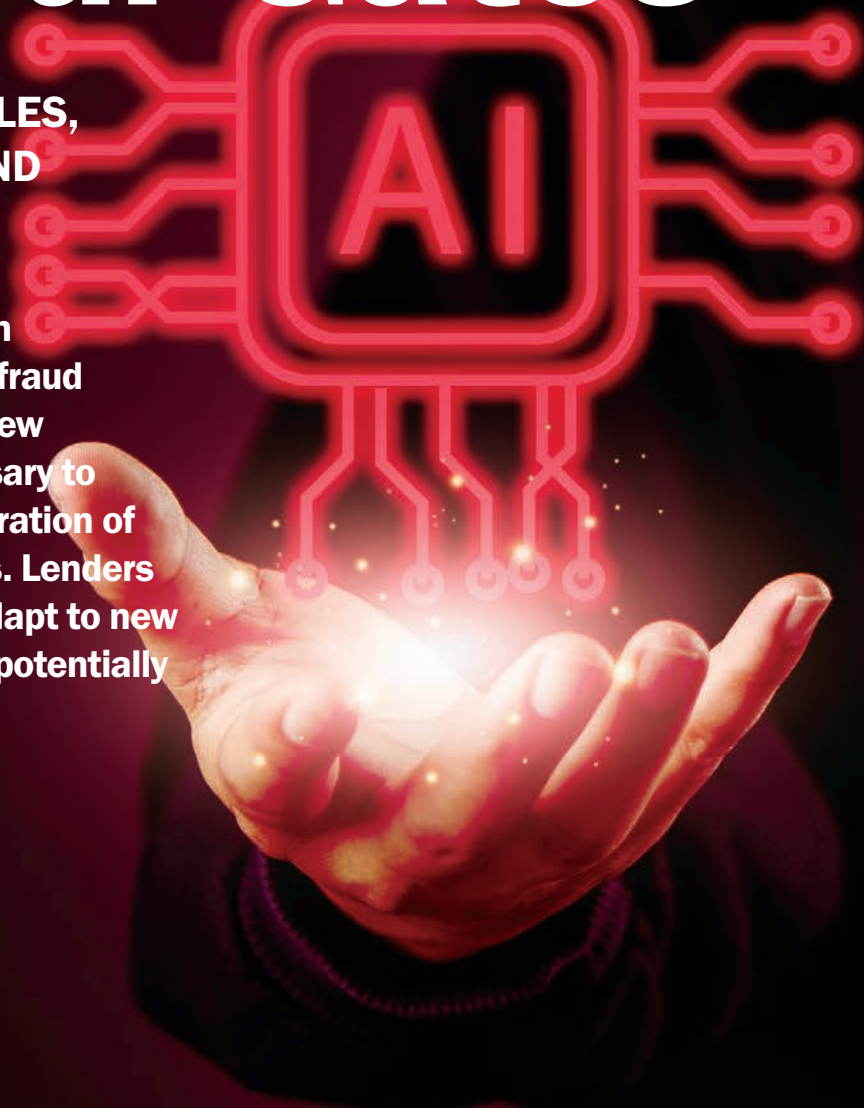


AI Fraud in Lending: The Cannon at Your Gates

BY ROBERT BOWLES,
ALEX DULISSE AND
DANIEL PRAVICH

Novel AI systems can circumvent existing fraud defenses at scale. New defenses are necessary to protect the safe operation of financial institutions. Lenders must act fast and adapt to new technology to avoid potentially catastrophic losses.



Castles were impenetrable fortresses for centuries in medieval Europe, keeping their inhabitants safe even as attackers ravaged the surrounding lands. Storming a castle was deadly for attackers, and even the largest trebuchets could do little damage to their thick stone walls.

Castles meant that defenders always had the upper hand in military conflicts. This changed dramatically with the introduction of a new, 14th-century technology: the cannon. Early cannons were unreliable, typically putting their operators in more danger than their targets. But after a century of relentless improvement, the cannon upset the balance of power in favor of the attacker. In the 15th century, castles that were once thought impregnable had fallen, and by the turn of the century, it was clear that warfare had changed forever. In 1519, Niccolo Machiavelli wrote, "There is no wall, whatever its thickness, that artillery will not destroy in a few days."

Today's financial institutions have robust defenses against fraud that have enabled safe finance for decades, but AI technology poses a looming threat. For years, AI has been rapidly improving and is beginning to pose a risk to traditional lending procedures. As AI continues to improve, will it advantage the defender (lenders and factors) or the attacker (fraudsters and borrowers misrepresenting collateral)? The advantages are asymmetrical. AI makes traditional fraud easier and hugely scalable. However, AI also enables new defenses that can prevent increased fraud – if the defenders act with haste.

What is AI?

AI systems are unlike typical computer programs because they are "grown" from training data, rather than being designed and built by programmers. AIs are given vast amounts of data and learn on their own what the underlying patterns and features of the data are. AI systems have taught themselves how to read, write, do mathematical calculations, write code, and complete most tasks that can be done on a computer – all at an expert level. Modern AIs can pass the Bar, CFA, and any other exam you can think of. And they are rapidly improving. Today, AI systems can expertly reason about questions, generate and edit images, write documents, and much more. Likely, they will soon be indistinguishable from a remote worker. If you aren't already familiar, go to chatgpt.com or gemini.google.com to try them. But keep in mind that these AI systems are basic compared to other offerings that exist today, and that AI systems in general are improving at a rapid pace.

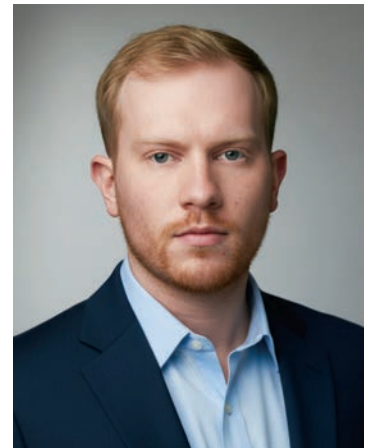
AI Fraud Today

But what does AI enable for an attacker today?

On page 16 are 2 BOLs (see set 1). Can you tell which are real or fake? **Before reading on, take a close look at the documents on the next page to see if you can tell...**



■ **ROBERT BOWLES**
Bluewater Transaction
Advisors



■ **ALEX DULISSE**
Bicameral



■ **DANIEL PRAVICH**
Bicameral

After looking at the images on the next page, how confident are you in your prediction? Actually, this was a trick question. They were both fake! The originals are on page 17 (see set 2).

On the first set of documents, the following changes were made using AI.

- 1st image: The unit quantities are doubled.
- We instructed the AI on what numbers to put, and it altered the image, mimicking the look of the existing text.
- 2nd image: Fake carrier signature and date.
- We instructed the AI to create a signature with "light blue penstrokes that are difficult to read." We then instructed it to add the date 6-30-24.
- For both images, the edits were generated from scratch and not copied from another source.

Set 1 Documents

Straight Bill of Lading
Original – Not Negotiable

Ship From: Superior Casting Co
789 Foundry Avenue
Pittsburgh, PA, 15201

Ship To: Titan Heavy Industries
890 Industrial Drive
Chicago, IL, 60602

SID#: 32952

Location No: 663

CID#: 32753

Freight Charge Terms (prepaid unless marked otherwise)
☐ 3rd Party

3rd Party Freight Charges - Bill To:
Titan Heavy Industries
789 Foundry Avenue
Pittsburgh, PA, 15201

Date: 5/5/2024
Bill of Lading No: 3275723

Carrier Name: CPU
Trailer No: 52
Seal Number(s): A321
SCAC: 1442
Pro No: 32589200

Special Instructions: ☐ Master BOL

PO# 1621
Contact: billing@superiorcasting.com

Handling Unit	Package	Weight	H.M. (X)	Commodity Description	UFL Only
QTY	TYPE	U/LB			Class
400	Unit 3	Case 1000		Custom Aluminum Castings	
300	Unit 3	Case 1500		Steel Die Castings	
2	Unit 1	Case 300		Mold Design and Fabrication	
150	Unit 4	Case 450		Zinc Die Castings	
200	Unit 4	Case 800		Bronze Bearing Castings	

1052 15 4050.00 Totals

When the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property as follows:
The agreed or declared value of the property is specifically stated by the shipper to be not exceeding \$ 20,000

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(4) and (5).

RECEIVED subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper. If applicable, otherwise to the rates, conditions and limitations of the carrier's tariff. The property described above, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and delivered as shown above, which said carrier agrees to carry to destination, if so, the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions.

This is to certify that the above named materials are properly classified, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT.

Shipper Signature: *[Signature]* Date: 5/5/24

Carrier Signature: *[Signature]* Date: *[Signature]*

Bill of Lading

TRAILER/CAR NUMBER: 43959
BILL DATE: 06/29/2024

TO
Consignee: QA Enterprise LLC
Street: 399 Jefferson Street
City/State/Zip: Annison/OH/50242

FROM
Shipper: TIK Midwest
Street: 921 Top Avenue
City/State/Zip: Northbrook/IL/0062
Special Instructions:

FOR PAYMENT, SEND BILL TO
Name: A/P QA Enterprise LLC
Company: QA Enterprise LLC
Street: 399 Jefferson Street
City/State/Zip: Annison/OH/50242

CARRIER
SCAC: 2200992
PRO #: 849212

NO. SHIPPING UNITS	TIME	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	WEIGHT	RATE	CHARGES
5	12:35	Resin Solution	495 LBS		

REMIT C.O.D.
C.O.D. AMOUNT: \$
C.O.D. FEE X
PREPAID X
COLLECT 0
TOTAL CHARGES \$

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$ 10,900 per Shipment.

RECEIVED subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned and delivered as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination, it is mutually agreed as to each carrier of all or any of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification and the said terms and conditions.

Shipper: *[Signature]* Date: 6-29-24
Carrier: *[Signature]* Date: 6-30-24

Mark with "X" or "RQ" if appropriate to designate Hazardous Material as Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (ii) of Title 49, Code of Federal Regulations. Also when shipping hazardous materials, the shipper's certification statement requirement is provided in the Regulation for a particular material.

It took under an hour to build the system for generating these fake documents, and it would take no time to generate a thousand more. Maybe an eagle-eyed field examiner could tell the difference, but doing so reliably and on a schedule would be impossible. And remember, today is the worst this technology will ever be...

Beyond document manipulation, AI tools can help attackers by being an intelligent "fraud consultant," giving expert-level advice on any scheme. Some models may not help if you directly ask them to help commit fraud, but these safeguards are easily circumvented. In general, any novice fraudster is now an expert.

A Possible Tale from the Near Future - March 2027

Lisa's firm, like many, had been aware of AI-enabled fraud since 2025, but maintained confidence in their old processes. They stuck with their tried-and-true processes while competitors scrambled to change.

Lisa had been closely monitoring Riverside Distribution for months due to their history of delayed payments, disorganized

financials, and their owner's stressed demeanor on calls. Then suddenly, everything seemed to turn around: new contracts materialized, revenue surged, and cash flow stabilized, all coinciding with their application for a significant expansion loan.

This rapid turnaround didn't sit right with Lisa. In her eight years of underwriting and portfolio management, such a swift recovery for a distressed company was rare. She tasked her analyst with fast-tracking reviews of companies with strong financials, specifically to investigate Riverside by verifying the new contracts, calling clients directly, and cross-referencing everything.

Two months later, payments started going missing. The culprit was not Riverside Distribution, however, but Meridian Manufacturing, another company in their loan portfolio. Meridian had been systematically inflating its revenues and fabricating contracts using DocuForge Pro, the same off-the-shelf AI fraud software that had been increasingly identified in investigations across the U.S. and Europe for the past 6 months. The document manipulation had started right after Lisa's team shifted focus to Riverside.

Lisa's analysis confirmed that the Riverside Distribution

Set 2 Documents

Straight Bill of Lading
Original - Not Negotiable

Date: 5/5/2024
Bill of Lading No: 3275723

Ship From:
Superior Casting Co
789 Foundry Avenue
Pittsburgh, PA, 15201

Ship To:
Titan Heavy Industries
890 Industrial Drive
Chicago, IL, 60602

SID#: 32952
Location No: 663

Carrier Name: CPU
Trailer No: 52
Seal Number(s): A321
SCAC: 1442
Pro No: 32589200

CID#: 32753

Freight Charge Terms (Prepaid unless marked otherwise)
☐ 3rd Party

3rd Party Freight Charges - Bill To:
Titan Heavy Industries
789 Foundry Avenue
Pittsburgh, PA, 15201

Special Instructions:
PO# 1921
Contact: billing@superiorcasting.com

☐ Master BOL

Handling Unit	Package	Weight	H.M. (X)	Commodity Description	U.S. Only
QTY	TYPE	QTY	TYPE		
200	Unit	3	Case	1000 Custom Aluminum Castings	
150	Unit	3	Case	1500 Steel Die Castings	
1	Unit	1	Case	300 Mold Design and Fabrication	
75	Unit	4	Case	450 Zinc Die Castings	
100	Unit	4	Case	800 Bronze Bearing Castings	

325 15 4050.00 Totals

When the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property as follows:
The agreed or declared value of the property is specifically stated by the shipper to be not exceeding \$20,000

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. - 14706(c)(1)(A) and (B).

RECEIVED: subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, conditions and tariffs of the carrier and are available to the shipper on request. The property described above, in apparent good order, weight, and condition, is received by the carrier and is being transported under the terms and conditions of the carrier's tariff. Every service to be performed hereunder shall be subject to all bills of lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification on the date of shipment.

Shipper Signature: [Signature] Date: 5/5/24

Carrier Signature: [Signature] Public Date: [Signature]

turnaround was legitimate. While she'd been scrutinizing a genuine recovery story, fraudsters using widely available AI tools had evaded their detection. Losses exceeded \$1.2 million.

New Balance of Power

This scenario, or one like it, will happen to unprepared lenders in the coming years. However, by understanding the new balance of power that AI creates, defenders can maintain the upper hand. Sophisticated AI technology allows even amateur fraudsters to operate with the expertise of today's professionals, doctoring documents, maintaining consistent narratives, and avoiding detection. While all-in-one fraud software may not exist yet, current AI models are highly capable when properly utilized. Off-the-shelf software already facilitates ransomware, identity theft, phishing, and money laundering. Similar tools for document fraud are inevitable.

Unfortunately, attackers will always have the advantage at the individual-document level.

It is becoming increasingly difficult, even for advanced AI detection, to distinguish fake documents from real ones. However, attackers face significant challenges in executing sophisticated, multi-document, multi-transaction, and multi-

Bill of Lading

TRAILER/CAR NUMBER: 43959
BILL DATE: 06/29/2024

TO
Consignee: QA Enterprise LLC
Street: 399 Jefferson Street
City/State/Zip: Annison/OH/50242

FROM
Shipper: TIK Midwest
Street: 921 Top Avenue
City/State/Zip: Northbrook/IL/60062
Special Instructions:

FOR PAYMENT, SEND BILL TO
Name: A/P QA Enterprise LLC
Company: QA Enterprise LLC
Street: 399 Jefferson Street
City/State/Zip: Annison/OH/50242

CARRIER
SCAC: 2200992
PRO #: 849212

NO. SHIPPING UNITS	TIME	DESCRIPTION OF ARTICLES SPECIAL MARKS & EXCEPTIONS	WEIGHT	RATE	CHARGES
5	12:35	Resin Solution	495 LBS		

REMIT C.O.D.
C.O.D. AMOUNT: \$
C.O.D. FEE PREPAID X
COLLECT ☐
TOTAL CHARGES \$

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$18,900 per Shipment

RECEIVED: subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of packages unknown), marked consigned and destined as indicated above which said carrier (the word carrier being understood through this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery as said destination. If on its route, otherwise to deliver to another carrier on the route to said destination, it is mutually agreed as to each carrier of all of said property, over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the Bill of Lading terms and conditions in the governing classification on the date of shipment. Shipper hereby certifies that he is familiar with all the Bill of Lading terms and conditions in the governing classification on the date of shipment.

Shipper Signature: [Signature] Date: 6-29-24
Carrier Signature: [Signature] Date:

Mark with "X" or "RO" if appropriate to designate Hazardous Material or Substances as defined in the Department of Transportation Regulations governing the transportation of hazardous materials. The use of this column is an optional method for identifying hazardous materials on Bills of Lading 172.201(a)(1) (a) of Title 49, Code of Federal Regulations. Also when shipping hazardous materials, the shipper's certification statement requirement is provided in the Regulation for a particular material.

month fraud schemes. A single inconsistency is a thread that, if diligently pulled, can unravel the attacker's entire operation.

Nonetheless, defenders' existing processes are largely insufficient to catch these frauds, requiring technological enhancements to counter these evolving threats. Every day, the first major AI fraud incident draws nearer, and lenders must act swiftly to protect themselves.

What to Do

Don't panic! Although AI can enable fraud at a much greater scale, it does not enable any fundamentally new fraud. Existing procedures enforced with awareness, vigilance, and caution will help in the short term. Attackers can move faster than defenders, so enforce existing procedures at the very least. If something looks suspicious, slow down until you confirm its veracity.

Wherever possible, verify using secondary sources. Third-party verification via phone or online portals cannot be faked, but you must ensure you are using a legitimate source. AI can easily fake voices and create duplicate websites.

Comparing documents and checking for logical

inconsistencies remains vital. For recurring collateral packages, new invoices appearing on the AR aging should align with the sales journal, and dropped invoices should align with the cash journal and bank statement. Teams should be diligent in checking dates and other details across supporting documents.

Ensure your team is familiar with AI's capabilities. This will not only help with spotting fakery, but also help build foundational knowledge, which will be vital as AI plays a greater role in finance at large. AI is a force multiplier: it makes attackers faster and smarter, but it also helps you bolster your defenses.

Soon, these measures alone won't suffice. Teams will have to leverage AI for fraud defense. Since attackers have the advantage at the individual-document level, and defenders have the advantage against larger frauds, the best defenses will enable lenders to analyze a higher volume of documents and in greater depth. Scouring every document for the slightest discrepancy would take too long for even a team of people alone, but AI excels at this detail-oriented, repetitive work.

AI systems will parse large document volumes, flagging risks for human review based on content, borrower trustworthiness, and loan size. This digital first pass ensures team members focus on higher-risk areas while ensuring complete coverage is maintained. AI systems will also track trends and ensure high-level numerical consistency. Furthermore, AI will holistically analyze borrowers beyond the raw numbers and help lenders consider potential risks before they become a problem. There are already AI-powered tools on the market that can do this at a multi-document/transaction level, and they will continue to improve in scope. In the future, such systems will be a key tool for ensuring strong defenses.

Additionally, because semi-annual field exam reports will let fraud go unaddressed for months, lenders should adopt a "continuous monitoring" mindset. Continuous monitoring has been out of reach for over a decade, due to the cost of implementation. Fortunately, AI will make such systems far more manageable by handling routine checks and only involving team members when risks are identified.

While exact future specifications of these systems are unknown, increased AI risk means that such systems are likely inevitable. Lenders do not need to build these systems themselves, as AI document processing/fraud detection is already becoming available as a service, much like email or collateral monitoring systems.

with digging deeper.

Over the next few weeks, the automated system flagged Meridian Manufacturing for suspicious invoice patterns. Several contract payments exhibited identical formatting anomalies and sequential reference numbers that didn't align with normal customer billing cycles. When the field exam team investigated, they discovered that Meridian had been systematically inflating revenues and fabricating contracts using DocuForge Pro. They'd only drawn down \$140,000 so far, but the fabricated contracts totaled over \$1.2 million. At the same time, Lisa confirmed the turnaround of Riverside was legitimate; the system had caught what would have become a massive loss with Meridian before it was too late.

The introduction of cannons inherently favored attackers over defenders, but it is not inevitable that AI follows this pattern. Fraud is inconsistent with the truth, so a sufficiently thorough analysis in principle can uncover discrepancies. Due to this asymmetry, fully deployed AI systems will favor the defender. However, this advantage only applies if AI is actually fully deployed. Those who stagnate will face increasing disadvantages. Lenders do not need to blow up their current processes, but they must plan and act to counter the growing AI threat.

Don't panic! But don't stand still either. 📌

This article was co-authored by Robert Bowles (robertbowles@consultbluewater.com), Alex Dulisse (adulisse@bicameral.io) and Daniel Pravich (dpravich@bicameral.io). Robert is the founder and executive director of Bluewater Transaction Advisors, a national field exam firm. Alex and Daniel are the founders of Bicameral. Bicameral is a software platform that uses AI to assist with auditing financial documents at scale. Bluewater utilizes the Bicameral software, working alongside Alex and Daniel to solve present and future problems in secured finance using emerging technologies.

An Alternative Tale from the Near Future - March 2027

Lisa's firm had taken the AI fraud warnings seriously since 2025, upgrading to AI monitoring systems that continuously analyzed transactions and patterns across their entire portfolio.

Lisa had been keeping a close eye on Riverside Distribution due to their distressed status, and she was suspicious when everything suddenly turned around. She lowered the automated system's risk threshold for Riverside and tasked her analyst