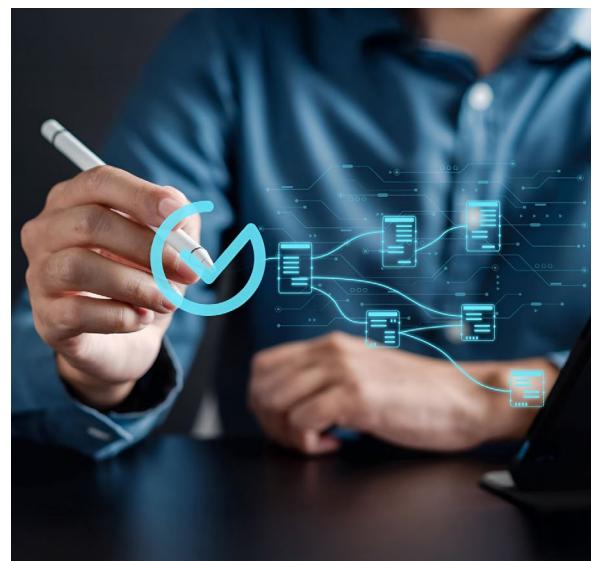




## Case Study: AI-Driven Invoice Fraud Detection for a Pharma Finance Department

### Business Problem

The Accounts & Finance department of a pharmaceutical enterprise processes a large volume of invoices monthly. These invoices require validation across multiple systems—such as Salesforce, ERP (SAP), Esker, Zoho Books, and email platforms—to verify account numbers, addresses, and digital signatures. Manual validation is not only time-consuming but also error-prone, making the process vulnerable to sophisticated fraud tactics.



### Innovation Use Case

To address these challenges, a next-gen Agentic AI solution was implemented to automate and enhance fraud detection in invoice processing.





## Solution Overview

## The proposed system leverages:



AI agents for automated data extraction and validation



# OCR to parse invoice documents

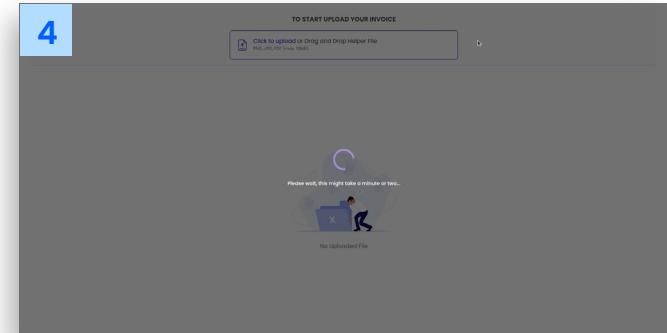
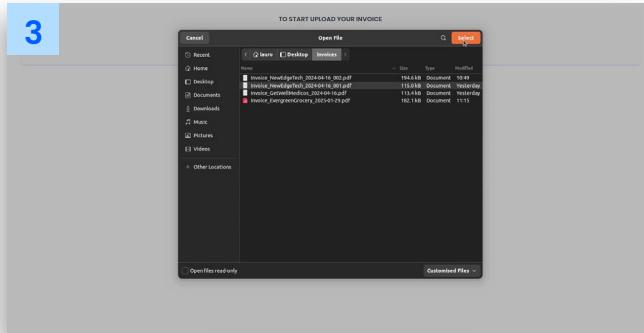
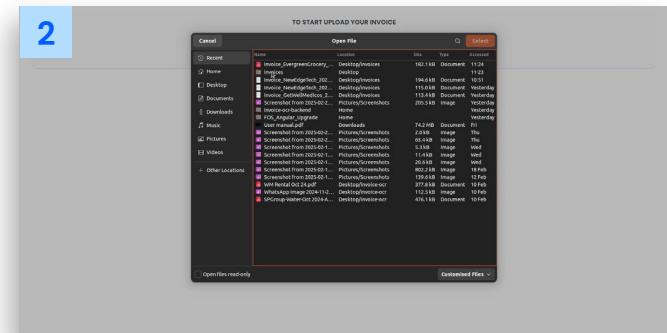
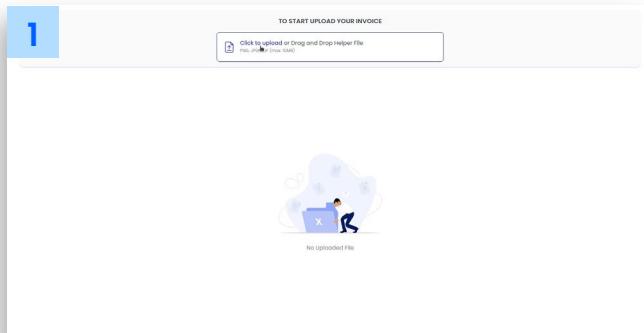


**Validator agents** to cross-check invoice data with trusted internal and external systems



## Workflow Steps:

1) User uploads invoice (PDF or image format).



## 2) OCR extracts invoice elements (bank account, address, total amount, etc.).

Uploaded File

Invoice\_NewEdgeTech\_2024-04-16\_001.pdf
112.33 KB
Delete

Invoice

Data Extracted

Invoice Number	2025020900042
Date of Invoice	16-04-2024
Place of Supply	Pune
Billed To	Manish, Mega Police, Hinjewadi Phase-3, Pune 411057
GSTIN/UIN	07AALCM6130F2ZV
Shipped To	Manish, Mega Police, Hinjewadi Phase-3, Pune 411057
Grand Total	2273759
Amount in Words	Two Hundred Seventy-Eight Thousand Seven Hundred Fifty-Nine Rupees Only
Bank Name	New Edge Tech LLP
Bank Account	344067555796974
IFSC Code	UTY0562359

Fraud Detection

- ✓ Account number validated
- ✓ Address validated
- ✓ Signature validated

Items

Description	Quantity	Unit Price	CGST Rate	CGST Amount	Total Amount
Asus ProArt PI6 (H7606)	1	88000	18%	15840	103840
Apple iPad (10th Gen)	1	28999	18%	5220	34219
Apple Watch Series 10	1	50000	18%	9000	59000
Etekcity HR Smart Fitness Scale	1	9000	18%	1620	10620
Viture Pro XR Glasses	1	56000	18%	10080	66080

## 3) Validator AI agents check authenticity:

- a) Bank account and address validation via third-party APIs
- b) Digital signature verification
- c) Format and tampering detection using Azure Cognitive Services

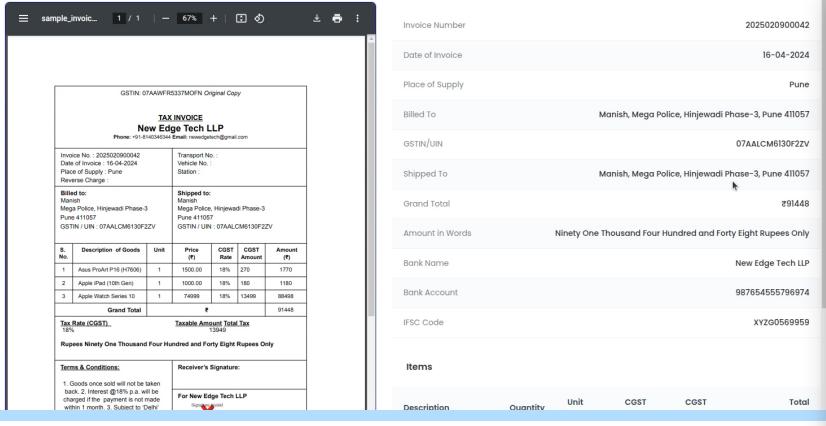


## 4) Fraud detection engine flags anomalies and generates audit reports.

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Invoice\_NewEdgeTech\_2024-04-16\_002.pdf
100.04 KB
Delete

**Invoice**



**Data Extracted**

Invoice Number	2025020900042
Date of Invoice	16-04-2024
Place of Supply	Pune
Billed To	Manish, Mega Police, Hinjewadi Phase-3, Pune 411057
GSTIN/UIN	07AALCM6130F2ZV
Shipped To	Manish, Mega Police, Hinjewadi Phase-3, Pune 411057
Grand Total	₹91448
Amount in Words	Ninety One Thousand Four Hundred and Forty Eight Rupees Only
Bank Name	New Edge Tech LLP
Bank Account	987654555796974
IFSC Code	XYZG0569959

**Fraud Detection**

Critical Invalid Digital Signature

The invoice is missing a valid digital signature or authorized stamp, making it susceptible to tampering or forgery.

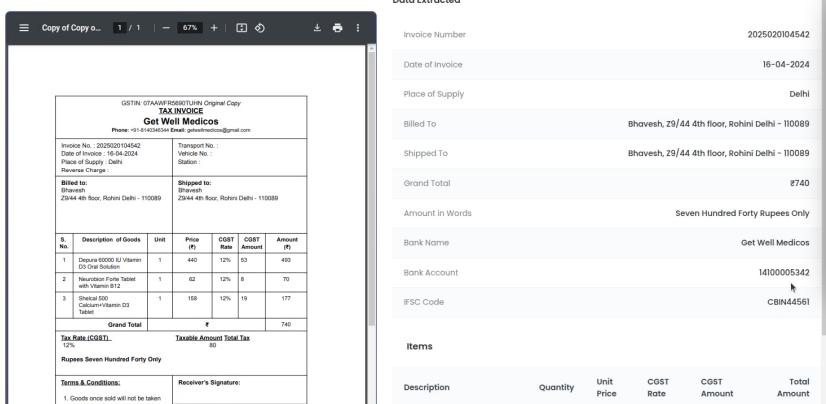
**Critical** Invalid Bank Account Details

The provided bank account number (987654555796974) does not exist for the given IFSC code (XYZG0569959), indicating potential fraud or incorrect details.

Uploaded File

Invoice\_GetWellMedicos\_2024-04-16.pdf
10.71 KB
Delete

**Invoice**



**Data Extracted**

Invoice Number	2025020104542
Date of Invoice	16-04-2024
Place of Supply	Delhi
Billed To	Bhavesh, z9/44 4th floor, Rohini Delhi - 110089
Shipped To	Bhavesh, z9/44 4th floor, Rohini Delhi - 110089
Grand Total	₹8740
Amount in Words	Seven Hundred Forty Rupees Only
Bank Name	Get Well Medicos
Bank Account	14100005342
IFSC Code	CBIN44561

**Fraud Detection**

Critical Invalid Address

The provided billing and shipping address (z9/44 4th floor, Rohini Delhi - 110089) does not match any registered entity, indicating possible fraud or incorrect details.



# Technology Stack



IO

Layer	Technology
<b>Frontend</b>	React (TypeScript)
<b>Backend</b>	FastAPI / NodeJS / SpringBoot
<b>OCR</b>	Azure Document Intelligence
<b>ML/AI</b>	TensorFlow, LSTM, SVM
<b>Agent Orchestration</b>	Anthropic Sonnet, Langchain, Rule Engine
<b>Database</b>	PostgreSQL
<b>Hosting</b>	Azure Cloud
<b>Integrations</b>	SAP, Esker, Basware, Zoho Books



## Potential impact

1

90 % reduction in manual validation effort (freeing 6-8 FTEs).

2

50 % faster invoice-to-payment cycle (better early-payment discounts).

3

60 % drop in confirmed fraud attempts within six months.

4

Automated, traceable checks improve audit readiness and regulatory compliance (SOX, ISO 27001).

5

Higher supplier trust & stronger cash-flow predictability for Finance leadership.

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