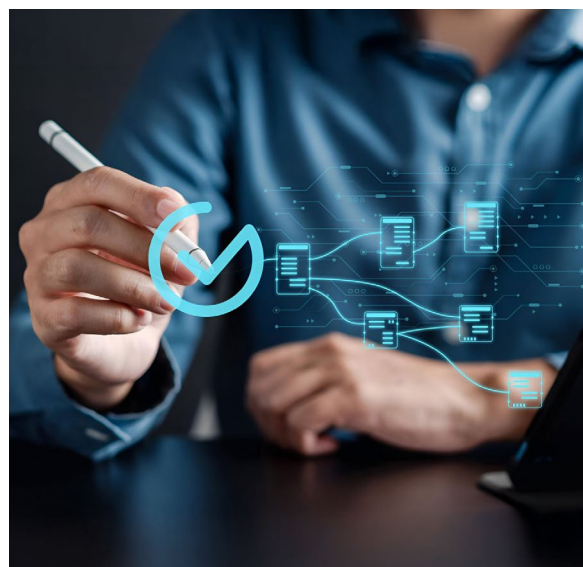


Case Study: **AI-Driven Invoice Fraud Detection for a Pharma Finance Department**

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

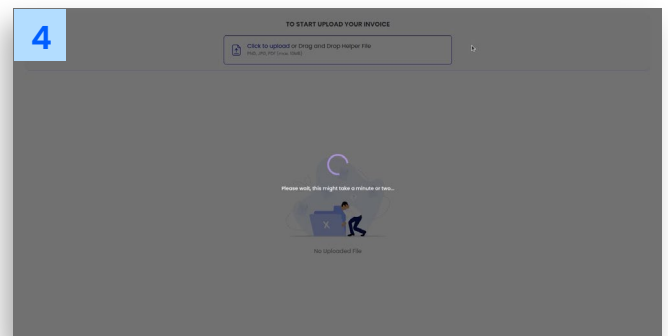
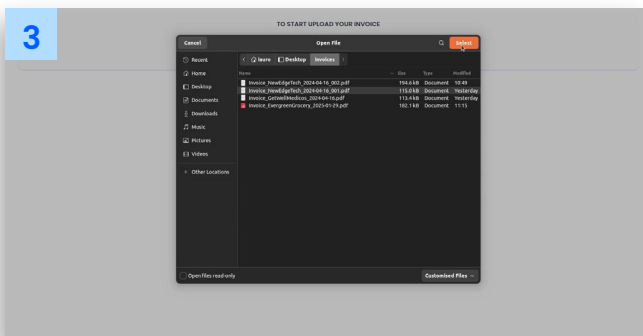
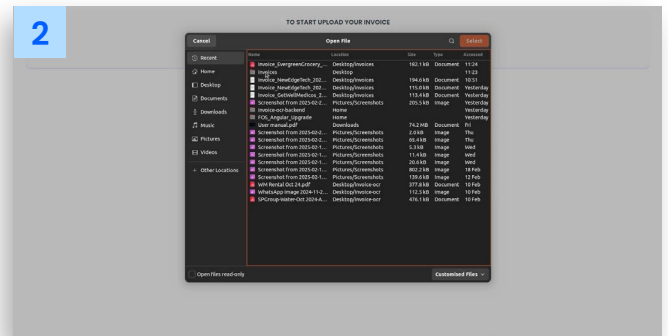
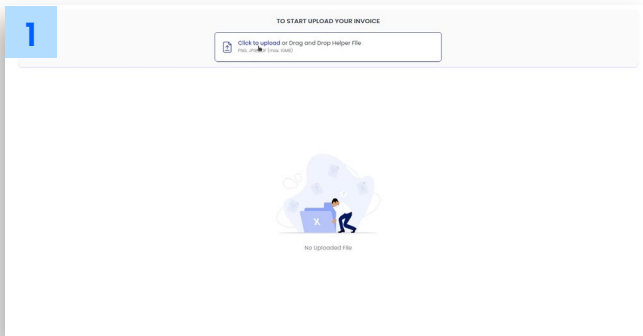


Validator agents to cross-check invoice data with trusted internal and external systems



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

Invoice

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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/UN: 07AALCM6130F2ZV

Shipped To: Manish, Mega Police, Hinjewadi Phase-3, Pune 411057

Grand Total: ₹273759

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: UTYG0562359

Items

Description	Quantity	Unit	CGST	CGST	Total
Asus ProArt P16 (H7606)	1		88000	15840	103840
Apple iPad (10th Gen)	1		28999	5220	34219
Apple Watch Series 10	1		50000	9000	59000
Eteckcity HR Smart Fitness Scale	1		9000	1620	10620
Viture Pro XR Glasses	1		56000	10080	66080

Fraud Detection

- Account number validated
- Address validated
- Signature validated



Items					
Description	Quantity	Unit Price	CGST Rate	CGST Amount	Total Amount
Asus ProArt P16 (H7606)	1	88000	18%	15840	103840
Apple iPad (10th Gen)	1	28999	18%	5220	34219
Apple Watch Series 10	1	50000	18%	9000	59000
Eteckcity HR Smart Fitness Scale	1	9000	18%	1620	10620
Viture Pro XR Glasses	1	56000	18%	10080	66080

3) Validator AI agents check authenticity:

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



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

Uploaded File

Invoice_NewEdgeTech_2024-04-16_002.pdf
193.04 KB

Invoice

sample_invoic... 1 / 1 - 67% +

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/UN: 07AALCM8130F2ZV
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: XYZ050589959

Items

Description	Quantity	Unit	CGST	CGST	Total

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 (XYZ050589959), indicating potential fraud or incorrect details.

Uploaded File

Invoice_GetWellMedicos_2024-04-16.pdf
10.71 KB

Invoice

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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: ₹740
Amount in Words: Seven Hundred Forty Rupees Only
Bank Name: Get Well Medicos
Bank Account: 14100005342
IFSC Code: CBN44561

Items

Description	Quantity	Unit	Price	CGST	CGST	Amount

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.





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