

The background features various light blue hand-drawn style elements. At the top, there are several overlapping circles and loops. To the right, a starburst or sun-like shape is partially visible. Below the main text, there are more circles, a wavy line, and several small checkmarks. Two four-pointed star shapes are positioned above and to the right of the text.

# Blockchain-Powered AI Healthcare Insights



# Background

*This solution creates AI tools that extract actionable insights from Electronic Health Records (EHR) stored in blockchain, helping doctors make informed decisions faster. It includes systems to analyze patient histories, predict adverse drug reactions, provide personalized treatment recommendations.*





# Objectives

- 1) Secure Storage – Store prescriptions on IPFS with metadata on blockchain for tamper-proof records.**
  - 2) AI-Powered Drug Analysis – Use OCR & LLM (RAG) to extract drug names and check for adverse interactions.**
  - 3) Transparent & Immutable Records – Blockchain ensures prescription authenticity and prevents forgery.**
  - 4) Access Control – Only authorized doctors & patients can retrieve prescriptions and reports.**
  - 5) Fast & Secure Retrieval – Blockchain + IPFS enable efficient and secure access to medical records.**
  - 6) User-Friendly Dashboard – Streamlit UI for easy prescription uploads, risk assessments, and access logs.**
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# Methodology

- 1) System Setup – Configure IPFS (storage), Hyperledger/Multichain (blockchain), and Flask API (backend).
- 2) Prescription Upload – Doctor uploads PDF/image, stored on IPFS, with CID & metadata logged on blockchain.
- 3) AI Analysis – OCR extracts drug names, and LLM (Ollama + RAG) checks for drug interactions & risks.
- 4) Secure Storage – AI-generated risk report stored on IPFS, with CID recorded on blockchain for integrity.
- 5) Access & Retrieval – Doctors & patients retrieve reports via Streamlit UI, ensuring data security & transparency.
- 6) Testing & Deployment – Validate blockchain integrity, AI accuracy, and UI usability before final deployment.

# Conclusion

- *Our project integrates blockchain and AI, to create a secure and intelligent prescription management system. By leveraging IPFS for storage, Multichain for tamper-proof records, and AI (OCR & LLM) for drug analysis, the system ensures data integrity, security, and accessibility.*
- *The solution can also enhance patient safety by detecting drug interactions and improving transparency between doctors and patients. With the help of user-friendly Streamlit UI, real-time prescription retrieval and risk assessment are seamless.*





## Navigation

Go to


- ☒ Login
- ☐ Upload Prescription
- ☐ View Reports
- ☐ Dashboard

Logout

# Doctor Login

Username

Password



Login

Navigation

- Go to
- ☐ Login
  - ☒ Upload Prescription
  - ☐ View Reports
  - ☐ Dashboard

Logout

# Upload Prescription

Upload a prescription




Drag and drop file here  
Limit 200MB per file • PDF, PNG, JPG, JPEG

Browse files

Patient ID

Timestamp



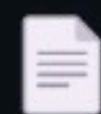
Deploy 

## Navigation

Go to

- ☐ Login
- ☐ Upload Prescription
- ☒ View Reports
- ☐ Dashboard

Logout



# View Reports

Enter Patient ID to view reports:

Get Reports

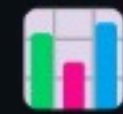


## Navigation

Go to


- ☐ Login
- ☐ Upload Prescription
- ☐ View Reports
- ☒ Dashboard


Logout





# Doctor's Dashboard


## Uploaded Prescriptions


 Patient ID: pag12


 File: [View on IPFS](#)

 Uploaded on: 29-03-2025


 Patient ID: patient24

 File: [View on IPFS](#)

 Uploaded on: 29-03-2025

 Patient ID: patient24

 File: [View on IPFS](#)

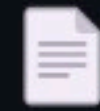
 Uploaded on: 29-03-2025

## Navigation

Go to

- ☐ Login
- ☐ Upload Prescription
- ☒ View Reports
- ☐ Dashboard

Logout



# View Reports

Enter Patient ID to view reports:

pag12

Get Reports

## Reports:

Timestamp: 29-03-2025

IPFS Link: [View on IPFS](#)

Extracted Text: DD foam 1289 1 NOV 71 DOD PRESCRIPTION FOR (Full name, address, & phone number) (if under 12, give age) John R Doe, HM3, VSN

VS.S. Neverforgotten (0D 178)

MEDICAL FACILITY DATE P US.S. Neverforgotten (00 178) 23 Jan 79

BR (Superscription) gm or ml.

Inscription) ta (llidey ra 15 \ml Amphege gone 120 \me (Subscription) me LT Soba Lior/ (Signe)

Se Sm2 tid ac

tack R. Frost LCDR. MD, USWR SIGNATURE RANK AND DEGREE

LOT NO: 39/06

The background is a light gray color, decorated with various hand-drawn blue doodles. These include several loops and swirls at the top, a series of vertical lines on the right side, a wavy line at the bottom center, and several checkmarks at the bottom right. There are also some abstract scribbles and loops scattered throughout.

**Thank you  
very much!**