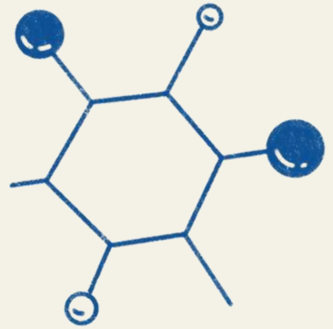
DOCTORY AI

AI-Powered Early Medical Assessment for
a Healthier Tomorrow

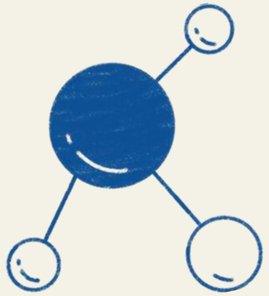
Problem We Address

- Millions of people struggle to access fast medical screening.
- Delays in diagnosis can lead to serious complications.
- Doctory AI offers an instant, AI-powered pre-check that supports patients before reaching a doctor.

Project Overview



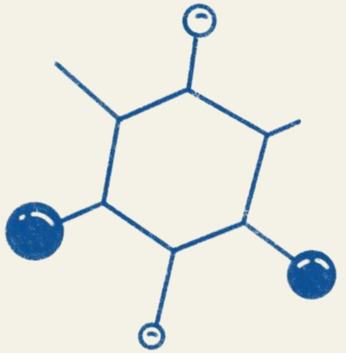
- Doctory AI is an intelligent platform that analyzes medical images and patient data to
- deliver quick, early health assessments.
- The system brings together deep-learning models and natural-language intelligence to
- make medical feedback simple, clear, and accessible.



Vision & Purpose

- Make early health screening available to everyone.
- Use AI to simplify complex medical information.
- Provide supportive, human-like explanations that patients can easily understand.
- Combine multiple medical tests into one unified platform.

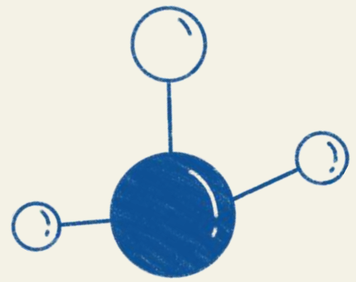
What Our System Can Do



- Analyze chest X-rays for early signs of pneumonia.
- Detect malaria from microscopic images.
- Estimate diabetes & Heart Disease risks using patient records.
- Generate friendly, medical explanations using an LLM.

Everything works together as one seamless diagnostic experience.

How the System Works



- User uploads an image or enters medical data.
- AI models process the input and generate predictions.
- The system sends the results to an LLM.
- The LLM transforms them into clear, supportive feedback.
- The user receives an easy-to-understand medical summary.

We built Doctory AI step-by-step:
Data collection → Model training → System integration → Frontend development →LLM linking → Testing → Deployment.

https://doctory-pouhpcj3cmummjd5bis9m6.streamlit.app

Project Architecture

Tabular Prediction Models

Diabetes

- Uses a Voting Ensemble for prediction

Heart Disease

- Based on a Random Forest Classifier

Provide early insights and trends in user health

Image Analysis Models

Pneumonia Model

- Based on YOLO Classification

Malaria Model

- Based on VGG Architecture

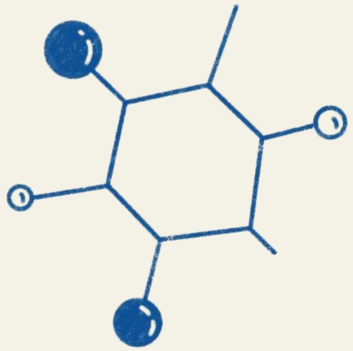
LLM Integration

The LLM module

- Translates numeric predictions into medical explanations
- Adds clarity, empathy, and user-friendly interpretation
- Warns users when results suggest potential risk
- Ensures the system feels human and supportive

Key Features

Multi-modal analysis: images + tabular data.



Conversational explanations (chat-style).

Fast AI predictions powered by deep learning.

Lightweight HTML interface for smooth use.

Fully integrated backend and APIs.

Challenges We Overcame

01

Handling imbalanced medical datasets.

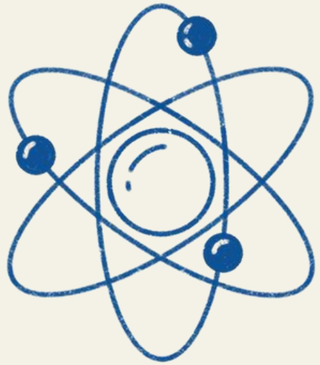
02

Ensuring stable communication between models and APIs.

03

Improving predictions through iterative tuning.

Future Potential



01

Mobile app version for easier access.

02

Expansion to more medical conditions.

03

Collaboration with healthcare professionals.

Doctory AI demonstrates how technology can support early health screening and empower patients with clear , understandable insights
It’s a step toward more accessible, AI-driven healthcare

Thank You