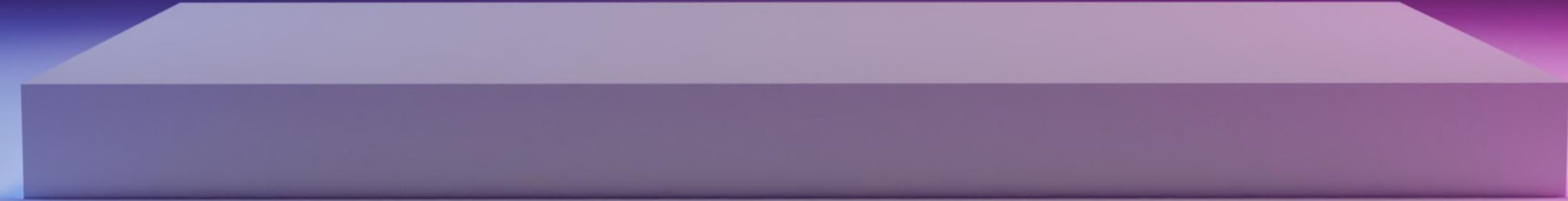
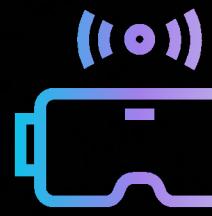




MedVision AI

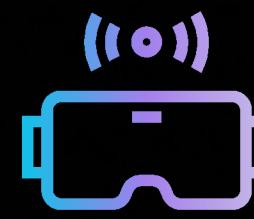
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Problem Statement:

Manual medical scan interpretation is ***time-consuming, subjective, and prone to diagnostic errors***. Current solutions lack a unified platform for multi-scan analysis (X-rays, MRIs), creating workflow ***inefficiencies***. Many healthcare facilities, especially in underserved areas, cannot access advanced AI diagnostics due to high costs and technical complexity. This leads to ***delayed diagnoses, inconsistent results, and unequal patient care quality***. The absence of integrated, explainable AI tools in radiology workflows exacerbates these challenges in clinical decision-making.

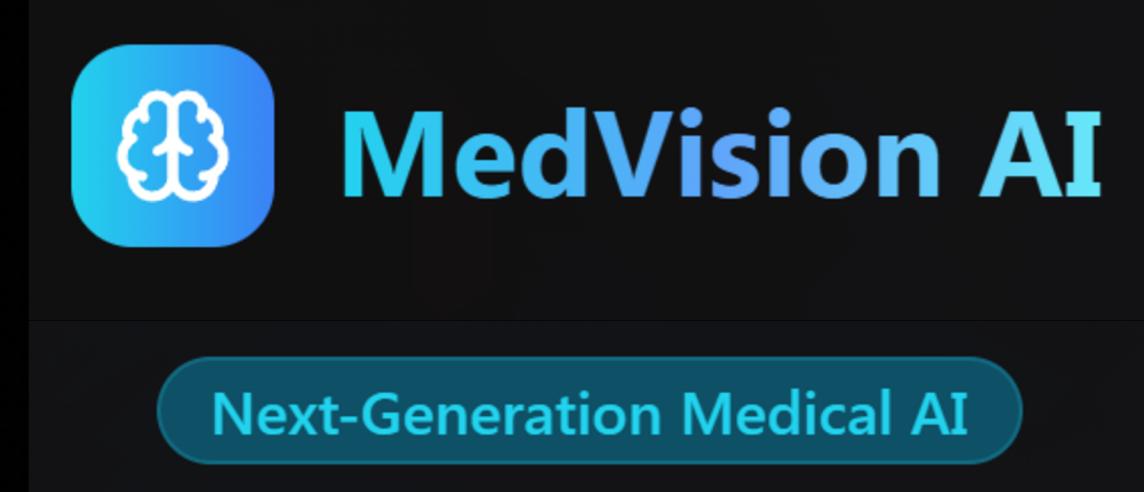


Our Solution:

MedVision AI is a **unified web platform** that automates medical scan analysis using **pre-trained deep learning models** (CheXNet, U-Net, etc.) for X-rays, MRIs, and CT scans. It provides:

- **Instant AI-powered diagnoses** with accuracy comparable to radiologists
- **Interactive visualizations** (Grad-CAM heatmaps, segmentation masks)
- **Structured PDF reports** for clinical use
- **Dark-mode interface** for radiology workflows

It delivers accessible, explainable AI diagnostics without requiring expensive hospital infrastructure.



MEDVISION AI PLATFORM

FRONTEND

HTML

- Scan upload form
- Knowledge base structure

CSS

- Dark theme
- Responsive card layouts

JAVASCRIPT

- File upload handling
- Dynamic results rendering

LIBRARIES

- Filepond(upload)
- Chart.js(metrics)

BACKEND

FLASK

- Rest api endpoints
- Routing system

DATA PROCESSING

- Werkzeug (security)
- Reportlab (pdf gen)

EXTENSIONS

- Flask-cors (cross-origin)
- Flask-reuploaded(file handling)

MEDVISION AI PLATFORM

AI ENGINE

TENSORFLOW 2.10

- Model inference
- Grad-CAM generation

OPENCV 4.7

- Image Processing
- Mask overlays

NUMPY 1.23

- Array operations
- Data formatting

MINIFORGE

- Environment management
- Dependency resolution

DOCKER

- Containerization
- Cloud deployment

Pretrained models

- CheXNet(DenseNet121)
- COVID_Net(custom CNN)
- 2D U_Net(ACDC)

DEPLOYMENT

CLOUD OPTIONS

- Render
- Heroku (PaaS)

MedVision AI

TECHNICAL INNOVATION

First unified platform for 4+ scan type

Real-Time explainability without cloud GPUs

Open-Source model Integration

Clinician-First UI/ux

CRITICAL SHOWSTOPPERS

Legal: Regulatory approval requirements

Clinical: Liability for false negatives

Technical: Model drift over time

MedVision AI

Key and Features

Multi-Scan support

- **chest X-rays**
(cheXNet)
- **Brain MRIs**
(Custom CNN)
- **Cardiac MRIs**
(U-Net)
- **Bone X-rays**
(DenseNet)

Explainable Ai

- Grade-CAM heatmaps
- Segmentation masks
- confidence scores
- interactive toggies

Instant report

- Structured PDFs
- Highlighted regions
- Medical references
- Download/ Share

Web-Based Access

- No installation
- PWA-ready
- Dark mode UI
- Offline caching



System Workflow

MedVision AI Limitations

TECHNICAL

GPU dependency for high-volume use

DICOM support requires preprocessing

Browser memory limits for large scans

CLINICAL

Not FDA-cleared (for triage only)

Validation gaps for rare conditions

Limited to 4 scan types (no CT/ultrasound)

Operational

Scalability challenges with Flask backend

Realtime collaboration unavailable

No EHR integration (manual data entry)

DATA MINERS

{AI-LUMINATI}

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THANK YOU!