NEURO AI CANCER DETECTOR

PRACTICAL REHEARSAL OF PROJECT

PRESENTED BY HAFIZ MUHAMMAD ASNAN AMAR

PRESENTER OVERVIEW

HAFIZ MUHAMMAD ASNAN AMAR

Dedicated innovator bridging the gap between Deep Learning and Medical Science. My goal is to transform cancer diagnosis through accessible, high-speed AI detection assistants.

AI Research

Web Dev

THE HACKATHON PHILOSOPHY

"Show that your idea works. It's not about hospital-level perfection; it's about proving the core concept through confidence and clarity."

THE CRITICAL PROBLEM

- **Late Detection:** Millions of lives are lost because cancer is often diagnosed in advanced stages.
- **Specialist Dependency:** High-quality diagnosis currently requires expensive specialists available in limited areas.
- **Diagnostic Delay:** Manual analysis of MRIs and Biopsies takes hours or even days.
- **Rural Barrier:** Remote areas lack medical experts to interpret complex imaging data.

THE SOLUTION: NEURO AI

An AI-powered assistant that analyzes medical images and predicts malignancy within seconds.

Impact: Reduces diagnosis time from hours to seconds. Supporting doctors anywhere, anytime.

THE THREE BRAINS OF THE SYSTEM

1. DATA

Teaching material: Thousands of labeled MRI and Histopathology images defining 'Cancer' vs 'Healthy'.

2. AI MODEL

The core 'Brain' using CNNs to recognize shapes, edges, and abnormal densities in images.

3. WEB INTERFACE

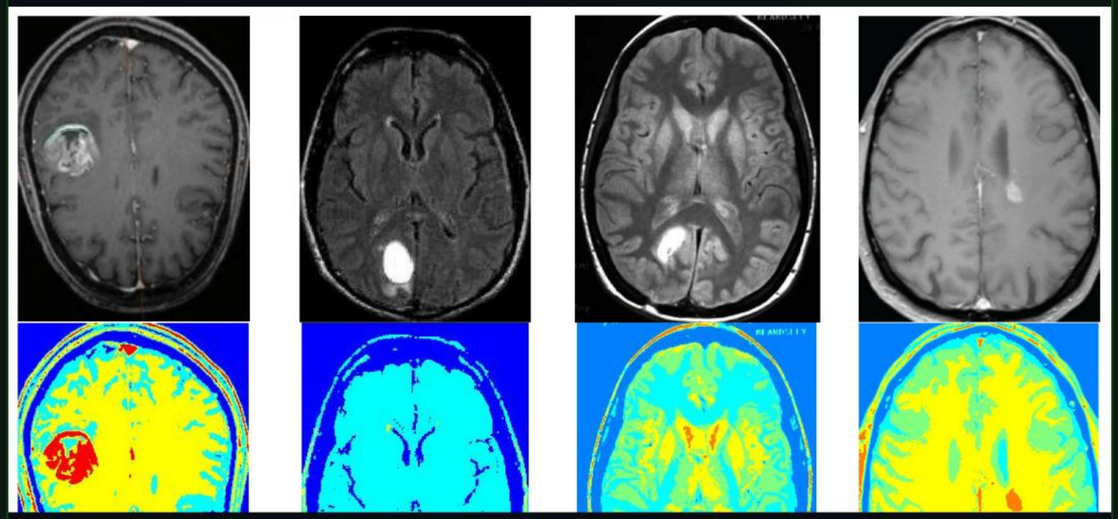
The visible system where doctors upload images and see immediate predictions with confidence scores.

HOW THE AI BRAIN THINKS

CONVOLUTIONAL NEURAL NETWORKS (CNN)

Just like a human brain, the CNN scans for specific patterns:

- **Edges & Shapes:** Identifying irregular boundaries of a mass.
- **Texture:** Distinguishing between normal tissue and malignant clusters.
- **Density:** Detecting abnormal pixel intensity in scans.



THE DETECTION PIPELINE

1. **Upload**
   MRI Image
2. **Resize**
   Pixel Normalization
3. **Analyze**
   CNN Feature Extraction
4. **Predict**
   Probability Calculation
5. **Result**
   Confidence Score

OPERATIONAL EXCELLENCE

<2s

Inference Time per Image

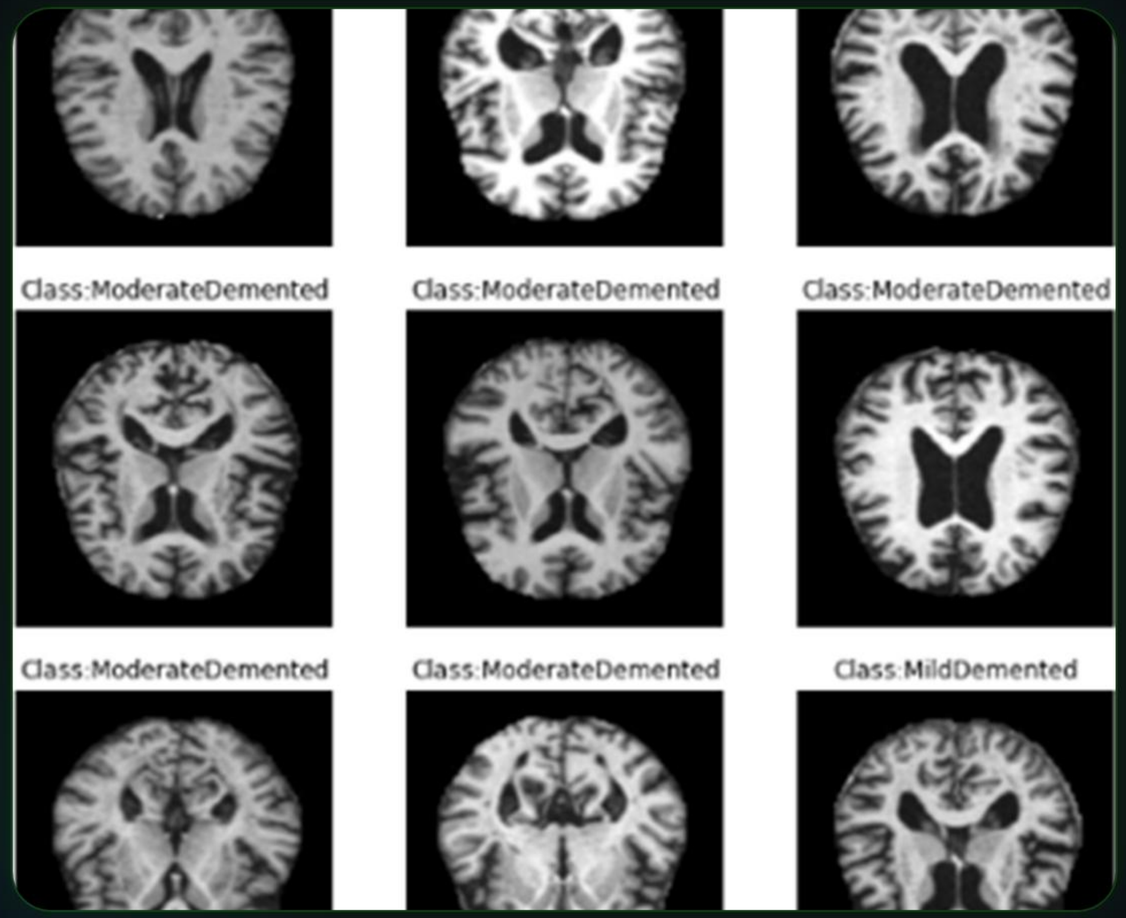
EFFICIENCY METRICS

The system is optimized for real-time deployment in high-pressure medical environments.

$$P_{malignant} = S(z) = \frac{1}{1 + e^{-z}}$$

Sigmoid activation for final classification

DIVERSE TRAINING DATA



- **Brain Tumors:** MRI scans labeled by grade.
- **Breast Cancer:** Histopathology slides at various magnifications.
- **Normalization:** Standardizing pixel values for uniform model learning.
- **Augmentation:** Rotation and flipping to ensure the model isn't biased by orientation.

HACKATHON PITCH STRATEGY

- **Preparation:** Have the trained model and Streamlit app open before judges arrive.
- **Confidence:** Speak clearly—you are presenting a solution that saves lives.
- **Live Demo:** Upload an image in real-time. Seeing is believing.
- **The Close:** Future vision—scaling to multi-cancer detection and mobile integration.

THE 3-MINUTE HOOK

"We reduce diagnostic delay from hours to seconds, supporting doctors in remote areas to save more lives."

Neuro AI: Early Detection, Better Life.

QUESTIONS & DISCUSSION

Thank you for your attention.

Hafiz Muhammad Asnan Amar

Innovator | AI Developer | Visionary

IMAGE SOURCES

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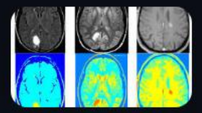

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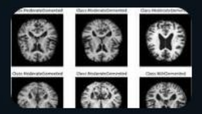

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