

GE Medical - AI System Integration Report

1. Introduction

This report summarizes the architecture and performance of the GE Medical AI System. The project aims to enhance diagnostic accuracy across 12 hospitals using advanced deep learning models.

2. Dataset Overview

Dataset Type	Number of Records	Size (GB)
MRI Scans	25,340	62.4
CT Scans	18,900	48.1
X-ray Images	40,120	73.6
EHR Data	125,000	12.8

The combined dataset contains approximately 209,360 samples totaling 196.9 GB.

3. Model Performance Metrics

Three AI models were evaluated on the validation dataset (20% split):

Model Name	Accuracy (%)	Precision (%)	Recall (%)
ResNet50	94.3	92.8	91.5
EfficientNet-B3	96.1	94.7	94.2
ViT-Base	97.5	96.9	95.8

Among all models, ViT-Base achieved the highest overall accuracy of 97.5%.

4. System Throughput

Average inference time per image: 0.34 seconds

Peak throughput: 220 images/minute

GPU Utilization: 86%

Server Specs: 4x NVIDIA A100 GPUs, 256 GB RAM, 48-Core CPU

5. Deployment & Usage

- Deployed in 12 hospitals across 3 countries
- Daily active users (avg): 142 doctors
- API request volume: 4,500 requests/day
- Uptime: 99.97% in the last 90 days

6. Conclusion

The GE Medical AI System demonstrates high performance and scalability in real-world healthcare environments. Future work involves expanding model training to include multimodal data from wearable sensors and genomics datasets.