Project Description for Infosys Interns

Project Title: AI-Powered-Enhanced EHR Imaging & Documentation System

Project Statement:

This project aims to enhance Electronic Health Records (EHR) by integrating Generative AI capabilities for medical image analysis and administrative automation. GenAI will be used to improve the clarity and interpretability of medical imaging (e.g., X-rays, MRIs, CTs), and to automate clinical documentation and ICD-10 coding. These enhancements will help reduce the time clinicians spend on non-clinical tasks and support faster, more accurate decision-making. Azure OpenAI will power the GenAI-driven components.

Expected Outcomes:

- Improved interpretation of medical images through AI-driven enhancement and reconstruction
- Significant reduction in time spent on documentation through automated clinical note generation
- Streamlined ICD-10 coding integrated into clinical workflows
- Greater focus on patient care by minimizing repetitive administrative efforts

Modules to be Implemented:

Module 1: Data Collection and Preprocessing

Objective: Prepare imaging and clinical data for AI model training and application
Tasks:
- Collect medical imaging datasets (X-ray, MRI, CT, ultrasound, DXA)
- Gather structured and unstructured EHR content including patient notes and coding data
- Clean, label, and standardize data for GenAI model compatibility

Module 2: Medical Imaging Enhancement

Objective: Use GenAI to enhance image quality and support diagnosis
Tasks:
- Apply GenAI for denoising and realistic reconstruction of medical images
- Support better visualization for clinicians by improving image resolution and clarity
- Train image enhancement models using Azure OpenAI tools

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Module 3: Clinical Note Generation & ICD-10 Coding Automation

Objective: Automate routine documentation and coding tasks using GenAI
Tasks:
• Generate clinical notes from structured data and doctor observations
• Automate ICD-10 coding by mapping EHR input to standard classifications
• Decrease documentation workload through seamless integration of GenAI tools

Module 4: Integration and Deployment

Objective: Deploy and integrate the enhanced EHR features into clinical environments
Tasks:
• Deploy trained GenAI models into real-time clinical workflows
• Integrate with hospital EHR systems for image processing and note generation
• Provide onboarding sessions for medical staff to use the new tools effectively