

Step 1: Introduction and Setup

Introduce the topic of basic image processing in the medical field.

Explain the importance and applications of image processing in medical diagnosis and research.

Work: Set up the development environment by installing necessary libraries like OpenCV and PyQt.

Step 2: Image Loading and Displaying

Load medical images (e.g., MRI scans or X-rays) using OpenCV.

Step 3: Preprocessing

Explain the importance of preprocessing in medical image analysis.

Demonstrate techniques such as noise reduction, contrast enhancement, and resizing using OpenCV.

Step 4: Basic Analysis and Visualization

Implement basic analysis techniques such as histogram equalization, edge detection, and thresholding.

Show how to visualize analysis results using PyQt's plotting capabilities.

Step 5: Interactivity and User Interaction

How to add interactive features such as parameter adjustment sliders and ROI selection tools using PyQt.

Help students incorporate interactive elements into the application interface.

Interact with medical images and adjust parameters in real-time.

Step 6: Submit documents at 4:00 PM