

ABSTRACT

Tuberculosis (TB) remains a significant global health concern, necessitating prompt and accurate diagnostic tools for effective disease management. This project presents a novel approach for the early detection of tuberculosis using Chest X-ray (CXR) images, complemented by a Computer-Aided Diagnosis (CAD) system. The integration of advanced image processing techniques and machine learning algorithms aims to enhance the efficiency and reliability of tuberculosis diagnosis, facilitating timely intervention and reducing the spread of the disease. This project amalgamates cutting-edge technology with medical diagnostics, providing a robust solution for the early detection of tuberculosis using Chest X-ray images. The CAD system serves as a valuable tool in the hands of healthcare professionals, contributing to the global efforts to combat and control the prevalence of tuberculosis. A Computer-aided Diagnosis (CADx) system based on image processing is proposed to assist doctors and radiologists in interpreting Chest X-rays (CXR) for early detection of lung Tuberculosis (TB). CXR can indicate lung abnormalities including TB. However, the interpretations of CXR might vary from one individual to another. It is important to accurately and quickly detect TB because early treatment will prevent more infections and fatal effects from happening. The steps that were performed by the proposed system consisted of preprocessing, segmentation, feature extraction, and classification.

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