

TUBERCULOSIS DETECTION USING CNN AND VIRTUALIZATION USING EXTENDED REALITY

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Tuberculosis is a major health threat in many regions of the world. Opportunistic infections in immune compromised HIV/AIDS patients and multi-drug-resistant bacterial strains have exacerbated the problem, while diagnosis in tuberculosis still remains a challenge. When left undiagnosed and thus untreated, mortality rates of patients with tuberculosis are high. Standard diagnostics still rely on methods developed in the last century. They are slow and often unreliable. In an effort to reduce the burden of the disease, this project presents our automated approach for detecting tuberculosis in conventional lung CT images. We first extract the lung region using a graph cut segmentation method. For this lung region, we compute a set of texture and shape features, which enable the CT image to be classified as normal or abnormal using a binary classifier. The proposed computer-aided diagnostic system for TB screening, which is ready for field deployment, achieves a performance that approaches the performance of human experts. In our project we have proposed CNN algorithm which will be compared with K Means Nearest Neighbor (KNN) in terms of accuracy.