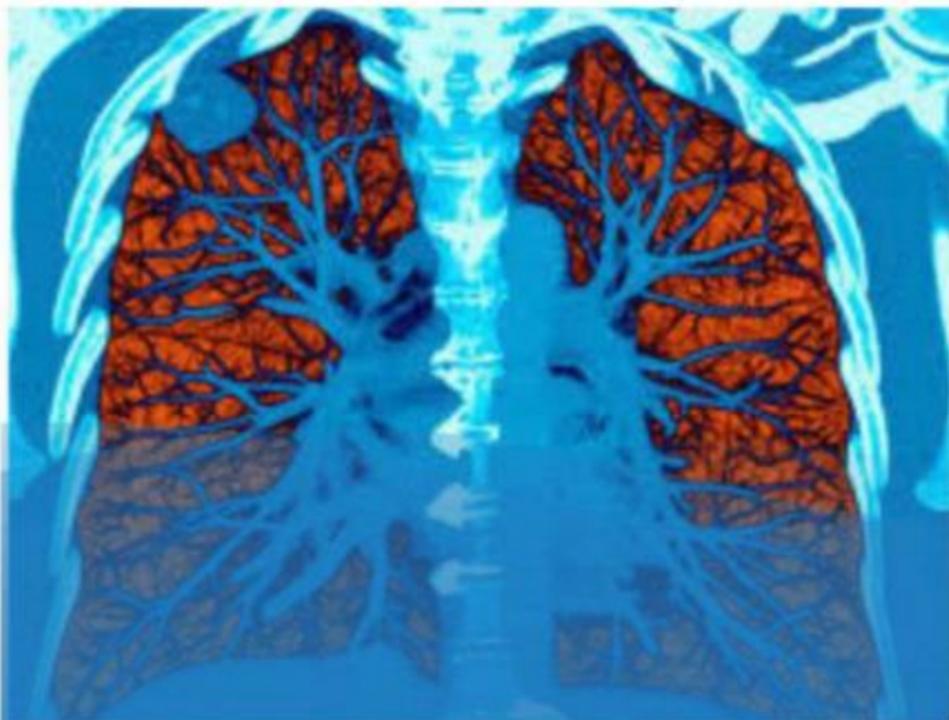




# DETECTION AND CLASSIFICATION OF MALIGNANCY IN LUNG CT IMAGES USING DEEP LEARNING AND HYBRID NEURAL NETWORK TECHNIQUE



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**Dr. Nuthanakanti Bhaskar**

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## About Author

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## About this Book

This book presents a complete computer-aided diagnosis (CAD) pipeline designed to assist radiologists by improving efficiency and reducing the chance of missed nodules. It focuses on four connected components: (i) CT image enhancement and preprocessing to suppress noise and standardize scans, (ii) pulmonary nodule detection and segmentation using labeled datasets, (iii) nodule classification into cancer/non-cancer and reduction of false positives using deep learning, and (iv) malignant nodule segmentation for cancer stage identification using TNM staging—specifically T-staging (T1–T4) based on tumor size. The work integrates classical image processing and modern deep learning architectures (U-Net, UNet++, 3D CNNs), and leverages benchmark datasets such as LIDC, LUNA16, and KDSB17 to build and evaluate the pipeline.



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