



## Title: Lung Cancer Screening Using Low Dose Computed Tomography

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### Abstract

Low-radiation-dose Computed Tomography (LDCT) to screen lung cancer has been validated effectively in reducing mortality. Two main problems are: thin-slice CT burdens clinicians with significant increasing number of CT images, and the images showing low-tissue contrast with high noise ratio. Computer-aided detection and diagnosis (CAD) may provide solution in this aspect. Our study proposed a pleural detection to distinguish pleural surfaces from thoracic cavity. The algorithm not only eliminated interference, the ground glass opacity (GGO) characteristic in the CT slices, but also enabled the detection of juxta-pleural nodules in the thoracic cavity. Additionally, in our prior study using density features of LDCT are effectively to differentiate malignancy from benign nodules. However, vessel effect may play a potential limitation when the nodule was attached or penetrated. Vessel detection algorithm, therefore, is required in this field that may better improve the efficacy of computer-aided detection and diagnosis for screened lung nodule.

### Biography

Dr. Yang-Hao, Yu (Ph.D.-medicine), is now an Associate Professor of School of Medicine, China Medical University (CMU), Taiwan, Director of Pulmonary Division of Tainan Municipal An-Nan Hospital-China Medical University, Consultant of Center of Disease Control in Taiwan. Member and Instructor of Taiwan Lung Cancer Society and Taiwan Society of Pulmonary and Critical Care Medicine. He got his M.D. at School of Medicine, and Ph.D. at Graduate Institute of Clinical Medical Science, CMU, Taiwan. He focused the research field on lung cancer from bench to clinic. The Ph.D. degree was achieved in 2012 by studying herb medicine, both *Ganoderma tsugae* and *Resveratrol*, on lung cancer. Clinically, he has interesting in studying thoracic image including Low dose CT. To cooperate with Dr. Shen, a computer engineer, we focused on developing computerized method to assist in lung cancer diagnosis.