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ARTICLE TYPE

Computer Vision Based Lung Cancer Detection

The Problem

Once a patient is diagnosed with lung cancer, it is common to determine the tumor's location as well as the phase of the disease using a PET-CT scanning of the chest. In this context, two main options are available - low and high-resolution PET-CT. For the latter, 16 scans are usually required to cover the entire lung area while the first requires only one scan. More of often than not, in some countries, insurance policies would cover one low-resolution scan followed by 3/4 high-resolution scans. Under this constraint, we are tasked to use the low-resolution scan to pick three out of the 16 locations in a four-by-four grid to detect the tumor and possible metastasis.

The Solution

To solve this task, we develop a conventional neural network (CNN) based solution and trained it on the client's data which included both the low-resolution and all 16 high-resolution scans together with expert tagging (by clinicians) of the best 3/4 scans to choose from.

The Outcome

The algorithm is used as part of an FDA approval for a new treatment protocol which is since been approved following extensive clinical trials.