

Cascaded CNNs for lung nodule classification

Track name: False positive reduction (Initially provided list)

Our lung nodule classification framework is based on 2.5D convolutional neural networks. Lung nodule classification is a class imbalanced problem because nodules are found in much lower frequency than non-nodules. In the class imbalanced problem, conventional classifiers tend to be overwhelmed by the majority class and ignore the minority class. We therefore propose cascaded convolutional neural networks to cope with the class imbalanced problem. In the proposed approach, multi-stage convolutional neural networks perform as single-sided classifiers to filter out obvious non-nodules. Successively, a convolutional neural network trained with a balanced data set calculates nodule probabilities.

We are preparing a peer-review paper describing our work. For more details, please contact sakamoto@bicat.net