JianpeiCAD for False Positive Reduction

Hangzhou Jianpei Technology Co., Ltd.
Big Data R&D Center
http://www.jianpeicn.com

Jianpei Technology Co., Ltd. is a company based on Hangzhou, China, dedicated to developing next generation hospital IT. Currently our team is working on a Computer Aided Diagnosis system for common pulmonary diseases, with a special focus on lung nodule detection. The system is currently in prototype stage. Hence we participate in this challenge to further verify the usefulness of our approaches for patients outside China.

Our method follows the common two stage work-flow of nodule detection: candidate detection and false positive reduction.

In this False Positive Reduction (extended) part, we trained 3D CNN model to illustrate its capability to eliminate false positives, which was trained with the use of commonly-applied data augmentation methods in alleviating bias learning problem, such as zoom, rotation and translation. Besides, a weighted loss function was used to keep the balance between the positive and negative candidates. The final score was calculated based on 10-fold cross validation on given subsets.

Since we are heading for production and in the process of patent submission, further details cannot be released now.