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Detection of Lung Cancer using Computed Tomography CT-Scan Images

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Abstract: *Cancer is one of the most serious and widespread disease that is responsible for large number of deaths every year. Among all different types of cancers, lung cancer is the most prevalent cancer having the highest mortality rate. Computed tomography scans are used for identification of lung cancer as it provides detailed picture of tumor in the body and tracks its growth. Computed Tomography is preferred over other imaging modalities, visual interpretation of these CT scan images may be an error prone task and can cause delay in lung cancer detection. The algorithm for lung cancer detection is proposed using methods such as median filtering for image preprocessing followed by segmentation of lung region of interest using mathematical morphological operations.*

Keywords: Computed Tomography, mortality, median filter

REFERENCES

[1]. P. Rao, N. A. Pereira and R. Srinivasan, "Convolutional neural networks for lung cancer screening in computed tomography (CT) scans," 2016 2nd International Conference on Contemporary Computing and Informatics (IC3I), Noida, 2016, pp. 489-493.

[2]. Pradhan, A., Sarma, B., & Dey, B. K. (2020).” Lung Cancer Detection using 3D Convolutional Neural Networks”. 2020 International Conference on Computational Performance Evaluation (ComPE). sci-hub.ru/10.1109/compe49325.2020.9200176

[3]. He K, Zhang X, Ren S, et al. Deep Residual Learning for Image Recognition[J]. 2015:770-778.

[4]. Diba A, Pazandeh A M, Gool L V. Efficient Two-Stream Motion and Appearance 3D CNNs for Video Classification[J]. 2016.

[5]. Xingjian Yan et al., “Classification of lung nodule malignancy risk on computed tomography images using convolutional neural network: A comparison between 2D and 3D strategies,” 03 2017, pp. 91–101

[6]. Wiem Safta and Hichem Frigui, “Multiple instance learning for benign vs. malignant classification of lung nodules in CT scans,” in 2018 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT). IEEE, 2018, pp. 490– 494

[7]. 3D Inception Convolutional Neural Networks For Automatic Lung Nodule Detection.2017 International Conference on Computational Science and Computational Intelligence

[8]. Glorot X, Bordes A, Bengio Y. Deep sparse rectifier neural networks[J]. Jmlr W & Cp, 2011, 15. [21] Wentao Z, Chaochun L,et al DeepLung: 3D Deep Convolutional Nets for Automated Pulmonary Nodule Detection and Classification

[9].

[10]. Murphy, K.; van Ginneken, B.; Schilham, A. M.; De Hoop, B.; Gietema, H.; and Prokop, M. 2009. A large-scale evaluation of automatic pulmonary nodule detection in chest ct using local image features and k-nearest-neighbour classification. Medical image analysis 13(5):757–770. Jacobs et al. 2014.

[11]. Yan, X.; Pang, J.; Qi, H.; Zhu, Y.; Bai, C.; Geng, X.; Liu, M.; Terzopoulos, D.; and Ding, X. 2016. Classification of lung nodule malignancy risk on computed tomography images using convolutional neural network: A comparison between 2d and 3d strategies. In ACCV, 91–101. Springer.