

# RET Project: CT Lung Segmentation of Patients with COVID-19

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## Motivation:

Hospitals and radiologists overwhelmed with COVID-19 cases for assessment the severity of lung damage due to COVID-19

## Previous Literature and Conclusions:

Classified CT scans using Chaotic-Bat-Algorithm and Kapur's Entropy for CT enhancement [1]

Choice of feature vectors had larger impact on accuracy levels than choice of ML used

## Our contributions:

Use simple segmentations of lung CT to compare dependence of classification accuracy on number of feature vectors and ML method

## Implications:

Project serves as a Teaching Design for Undergraduate Lesson Plan and Future Research projects

### References:

- [1] Kadry, Seifedine, et al. "Development of a machine-learning system to classify lung CT scan images into normal/COVID-19 class." arXiv preprint arXiv:2004.13122 (2020).
- [2] <https://www.kaggle.com/datasets/andrewmvd/covid19-ct-scans>

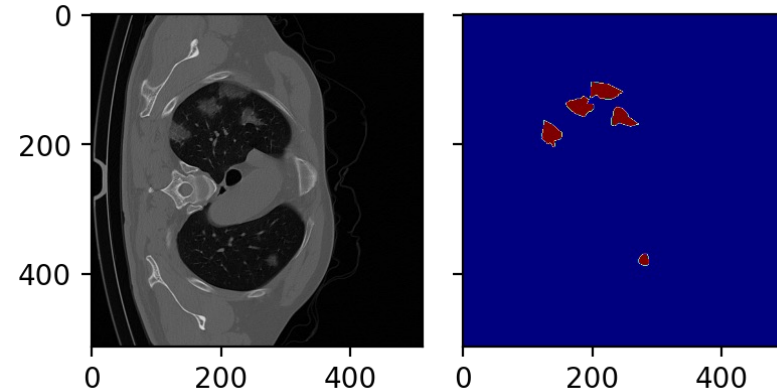


Fig 1: Training image and segmentation of COVID infection [2]

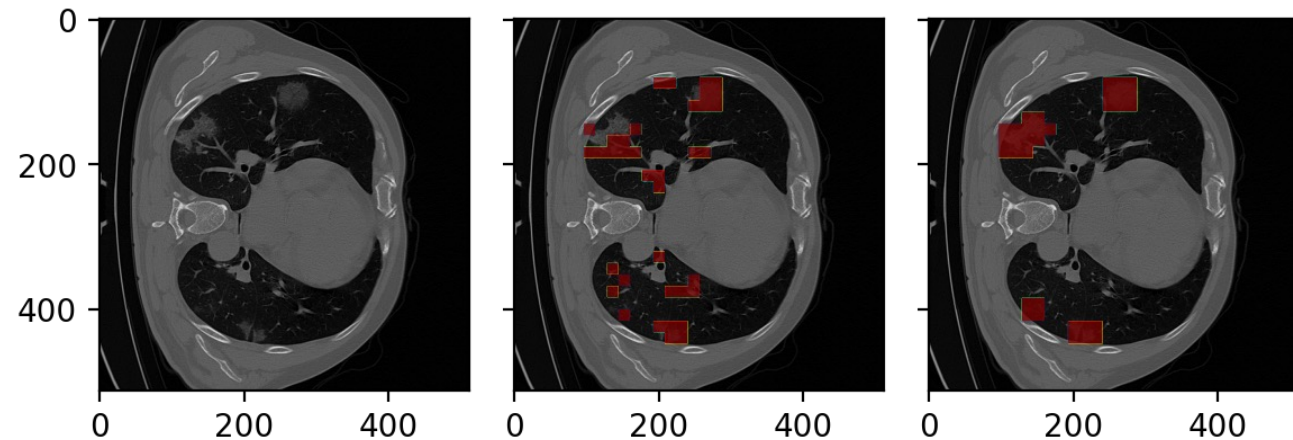


Fig 2: From left to right: Original CT, Predicted Classification with Simple KNN, True Label



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<https://sensip.engineering.asu.edu/ret/>

