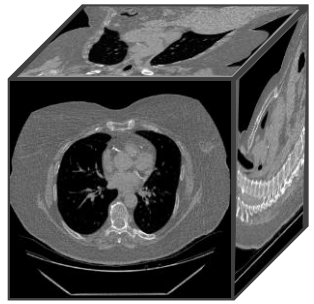
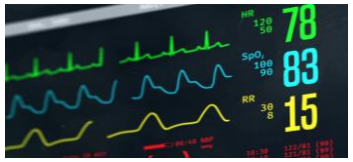
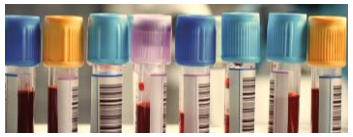


Chest CT Volume



Vital Signals

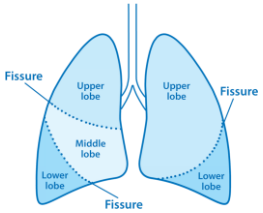


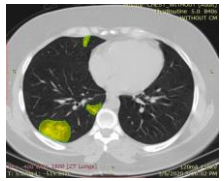
Blood Test

Demographic Data

Lobe Segmentation

Pulmonary Opacities Segmentation



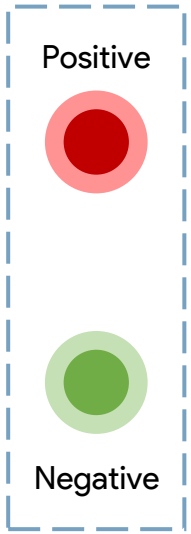


Whole Lung Radiomics

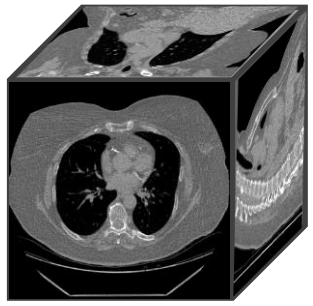
Hierarchical Lobe-wise Quantification Features

Random Forest

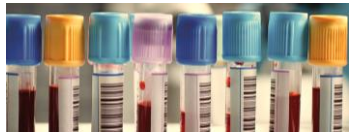
ICU admission prediction



Inputs



Chest CT Volume

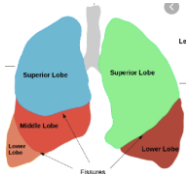


Laboratory Test Data

Demographic Data

Feature Extractors

Lobe Segmentation



Lesion Segmentation

Lesion Texture Extractor

CVD Radiomics Extractor

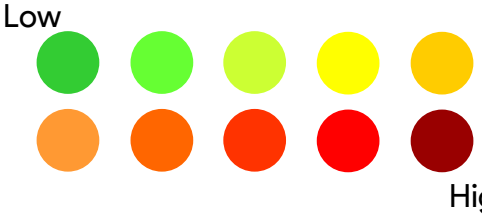
Feature Mixer

Predictions (Outputs)

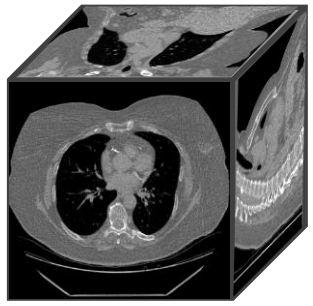
Binary Classification:
Lesion Volume Score > 15?

Binary Classification:
Mortality Prediction

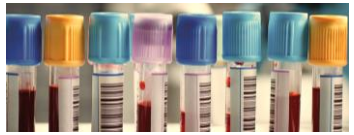
Ordinal Classification:
Severity/Risk Level,
Based on the admit duration
and end events



Inputs



Chest CT Volume

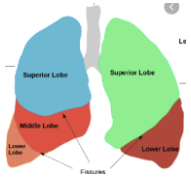


Laboratory Test Data

Demographic Data

Feature Extractors

Lobe Segmentation



Lesion Segmentation

Lesion Texture Extractor

CVD Radiomics Extractor

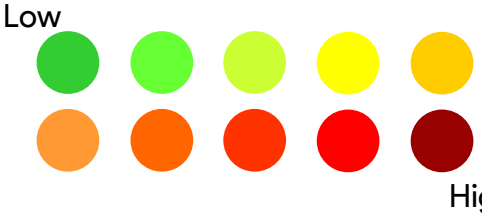
Feature Mixer

Predictions (Outputs)

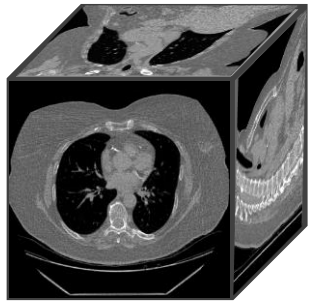
Binary Classification:
Lesion Volume Score > 15?

Binary Classification:
Mortality Prediction

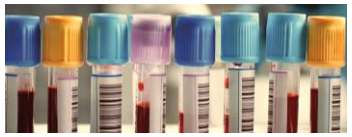
Ordinal Classification:
Severity/Risk Level,
Based on the admit duration
and end events



Inputs



Chest CT Volume



Demographic Data

Multi Quantification

Lung Infection

Visceral Fat

Skeletal Muscle Mass

CVD Radiomics

Feature Mixer

Predictions (Outputs)

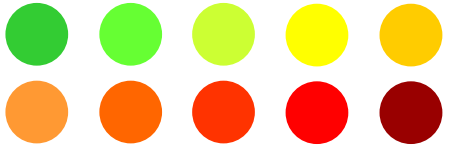
Binary Classification:
Mortality Prediction

Survive Decease

Ordinal Classification:
Severity/Risk Level,

Based on the admit duration and end events

Low



High