

```
In [13]: runfile('/home/anshul/Machine_Learning_code/Project/
new_main_progr_changed.py', wdir='/home/anshul/Machine_Learning_code/Project')
Fit time elapsed: 0.406404972076416
PCA diamensions for fitting the model: 10
/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:
FutureWarning: The default value of gamma will change from 'auto' to 'scale' in
version 0.22 to account better for unscaled features. Set gamma explicitly to
'auto' or 'scale' to avoid this warning.
  "avoid this warning.", FutureWarning)
/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/metrics/
classification.py:1143: UndefinedMetricWarning: Precision and F-score are ill-
defined and being set to 0.0 in labels with no predicted samples.
  'precision', 'predicted', average, warn_for)
Classification report for classifier SVC(C=1.0, cache_size=200, class_weight=None,
coef0=0.0,
  decision_function_shape='ovr', degree=3, gamma='auto_deprecated',
  kernel='rbf', max_iter=-1, probability=False, random_state=None,
  shrinking=True, tol=0.001, verbose=False):
```

	precision	recall	f1-score	support
Atelectasis	0.00	0.00	0.00	49
Atelectasis Infiltration	0.00	0.00	0.00	9
Cardiomegaly	0.00	0.00	0.00	13
Consolidation	0.00	0.00	0.00	17
Edema	0.00	0.00	0.00	2
Effusion	0.00	0.00	0.00	32
Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
Hernia	0.00	0.00	0.00	4
Infiltration	0.27	0.09	0.13	81
Mass	0.00	0.00	0.00	7
No Finding	0.43	0.98	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	0.00	0.00	0.00	19
micro avg	0.42	0.42	0.42	485
macro avg	0.05	0.07	0.05	485
weighted avg	0.22	0.42	0.27	485

\* Accuracy: 41.9 %

\* Fit time elapsed: 1.3s

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Fit time elapsed: 0.194840669631958
```

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PCA diamensions for fitting the model: 20
```

```
/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:
FutureWarning: The default value of gamma will change from 'auto' to 'scale' in
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```
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Consolidation	0.00	0.00	0.00	17
Edema	0.00	0.00	0.00	2
Effusion	0.00	0.00	0.00	32
Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
Hernia	0.00	0.00	0.00	4
Infiltration	0.25	0.09	0.13	81
Mass	0.00	0.00	0.00	7
No Finding	0.43	0.97	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	1.00	0.05	0.10	19
micro avg	0.42	0.42	0.42	485
macro avg	0.11	0.07	0.05	485
weighted avg	0.26	0.42	0.27	485

\* Accuracy: 41.9 %

\* Fit time elapsed: 0.7s

Fit time elapsed: 0.2257072925567627

PCA diamensions for fitting the model: 50

/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:

FutureWarning: The default value of gamma will change from 'auto' to 'scale' in version 0.22 to account better for unscaled features. Set gamma explicitly to 'auto' or 'scale' to avoid this warning.

"avoid this warning.", FutureWarning)

/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/metrics/

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	precision	recall	f1-score	support
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Atelectasis Infiltration	0.00	0.00	0.00	9
Cardiomegaly	0.00	0.00	0.00	13
Consolidation	0.00	0.00	0.00	17
Edema	0.00	0.00	0.00	2
Effusion	0.00	0.00	0.00	32
Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
Hernia	0.00	0.00	0.00	4
Infiltration	0.23	0.04	0.06	81
Mass	0.00	0.00	0.00	7
No Finding	0.42	0.99	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	1.00	0.05	0.10	19

micro avg	0.42	0.42	0.42	485
macro avg	0.11	0.07	0.05	485
weighted avg	0.25	0.42	0.26	485

\* Accuracy: 41.6 %

\* Fit time elapsed: 1.3s

Fit time elapsed: 0.24432682991027832

PCA diamensions for fitting the model: 100

/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:

FutureWarning: The default value of gamma will change from 'auto' to 'scale' in version 0.22 to account better for unscaled features. Set gamma explicitly to 'auto' or 'scale' to avoid this warning.

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	precision	recall	f1-score	support
Atelectasis	0.00	0.00	0.00	49
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Consolidation	0.00	0.00	0.00	17
Edema	0.00	0.00	0.00	2
Effusion	0.00	0.00	0.00	32
Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
Hernia	0.00	0.00	0.00	4
Infiltration	0.18	0.02	0.04	81
Mass	0.00	0.00	0.00	7
No Finding	0.42	0.99	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	1.00	0.05	0.10	19
micro avg	0.41	0.41	0.41	485
macro avg	0.11	0.07	0.05	485
weighted avg	0.24	0.41	0.26	485

\* Accuracy: 41.4 %

\* Fit time elapsed: 2.2s

Fit time elapsed: 0.6090829372406006

PCA diamensions for fitting the model: 500

/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:

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```

	precision	recall	f1-score	support
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Effusion	0.00	0.00	0.00	32
Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
Hernia	0.00	0.00	0.00	4
Infiltration	0.00	0.00	0.00	81
Mass	0.00	0.00	0.00	7
No Finding	0.42	1.00	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	0.00	0.00	0.00	19
micro avg	0.41	0.41	0.41	485
macro avg	0.03	0.07	0.04	485
weighted avg	0.17	0.41	0.24	485

\* Accuracy: 41.4 %

\* Fit time elapsed: 10.8s

Fit time elapsed: 0.7204105854034424

PCA diamensions for fitting the model: 600

/home/anshul/anaconda3/lib/python3.6/site-packages/sklearn/svm/base.py:196:

FutureWarning: The default value of gamma will change from 'auto' to 'scale' in version 0.22 to account better for unscaled features. Set gamma explicitly to 'auto' or 'scale' to avoid this warning.

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	precision	recall	f1-score	support
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Emphysema	0.00	0.00	0.00	8
Fibrosis	0.00	0.00	0.00	14
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Infiltration	0.00	0.00	0.00	81

Mass	0.00	0.00	0.00	7
No Finding	0.42	1.00	0.59	201
Nodule	0.00	0.00	0.00	25
Pneumonia	0.00	0.00	0.00	4
Pneumothorax	0.00	0.00	0.00	19
micro avg	0.41	0.41	0.41	485
macro avg	0.03	0.07	0.04	485
weighted avg	0.17	0.41	0.24	485

\* Accuracy: 41.4 %  
 \* Fit time elapsed: 15.3s

In [14]: