

ms-nodules on LIDC-IDRI

I. OVERALL STATISTICS

The confusion matrix for each type is shown in Table I. The overall classification rate is 84.1%. Results for all cases are shown. Scores are presented on the most right of the image. It should be noted that cases not correctly classified are labeled out using red rectangles.

TABLE I
CONFUSION MATRIX FOR *ms-nodules* ON LIDC-IDRI

	G	W	N	P	V	J
G	0.47	0.09	0.35	0.01	0.08	0.00
W	0.00	1.00	0.00	0.00	0.00	0.00
N	0.02	0.05	0.87	0.02	0.02	0.02
P	0.01	0.01	0.08	0.89	0.00	0.00
V	0.01	0.03	0.05	0.00	0.89	0.01
J	0.01	0.00	0.10	0.00	0.00	0.89

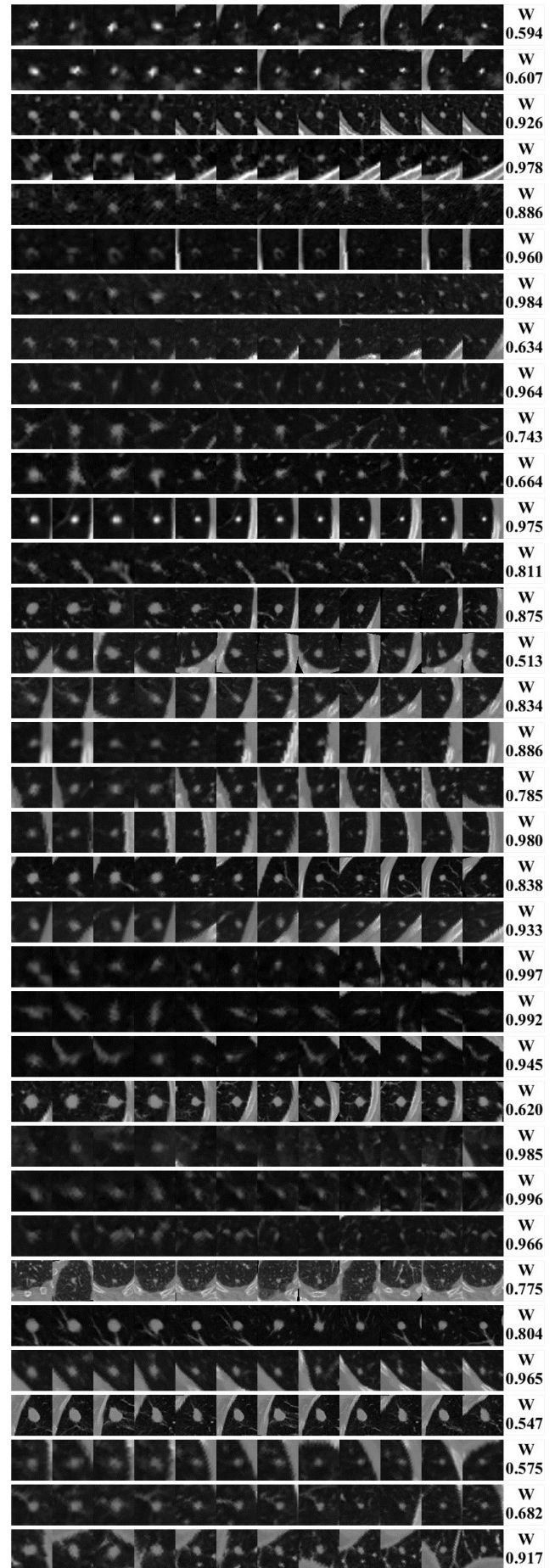
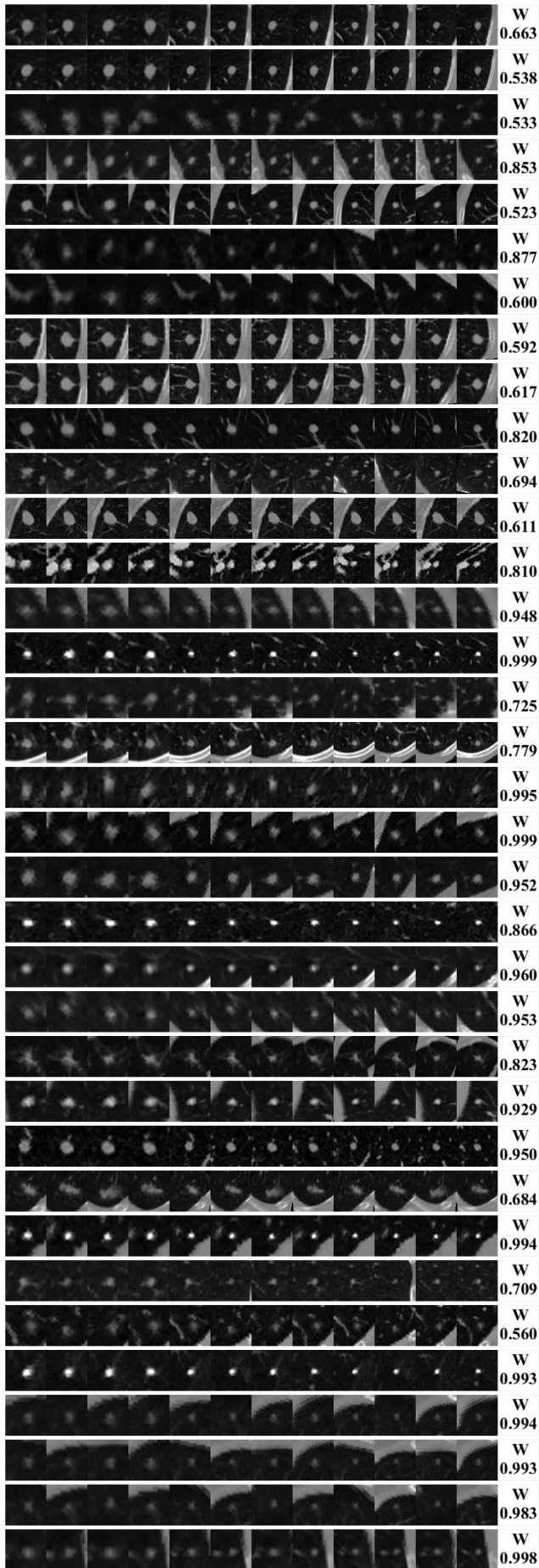
G = Ground glass optic W = Well-circumscribed N = Non-nodule
P = Pleural-tail V = Vascularized J = Juxta-pleural

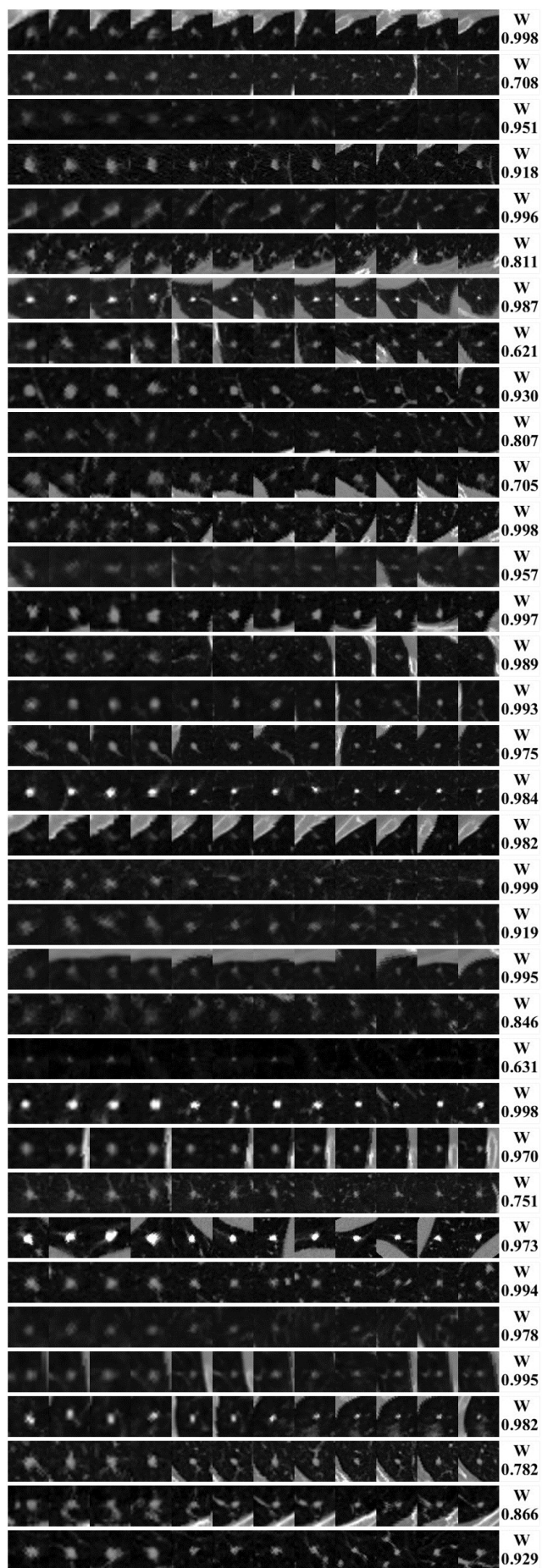
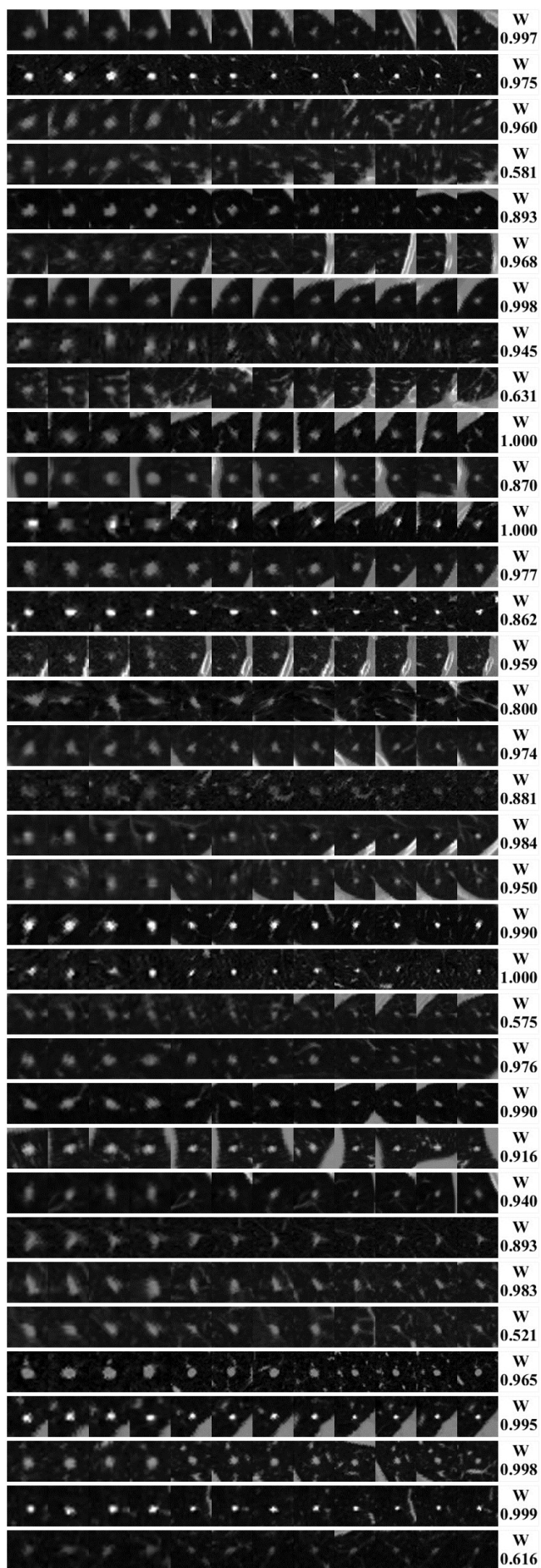
II. RESULTS

Click highlighted link to jump to corresponding section.

- [II-A](#) Well-circumscribed
- [II-B](#) GGO
- [II-C](#) Juxta-pleural
- [II-D](#) Pleural-tail
- [II-E](#) Vascularized
- [II-F](#) Non-nodule

A. *Well-circumscribed for msnodules*



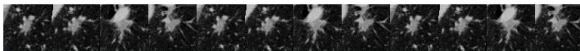
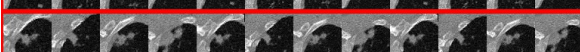
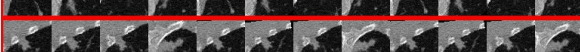
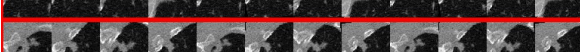
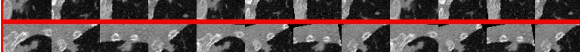
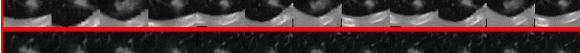
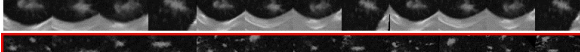
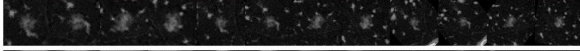
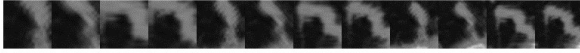
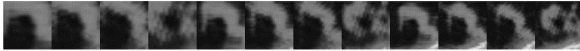
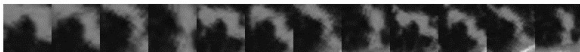
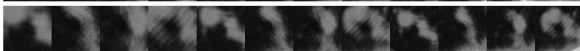
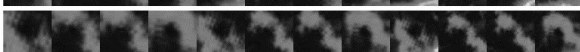
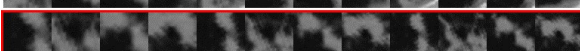
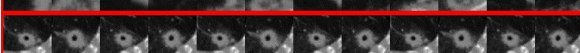
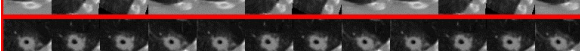
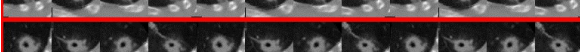
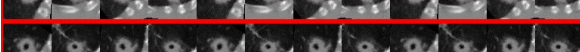


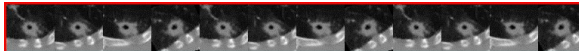
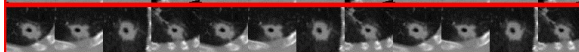
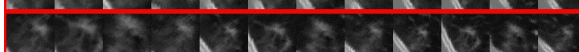
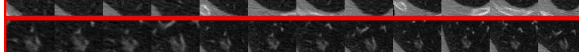
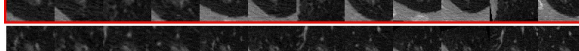
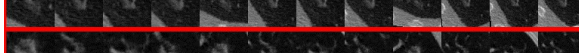
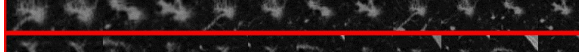
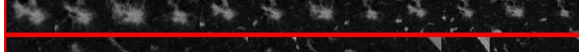
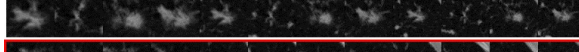
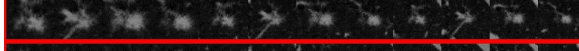
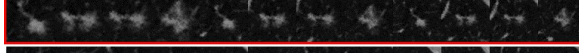
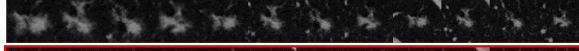
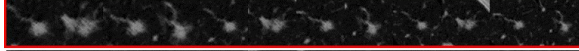
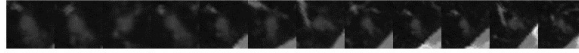
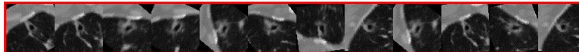
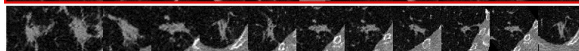
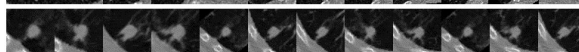
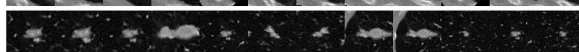
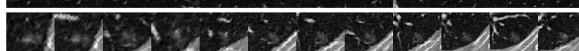
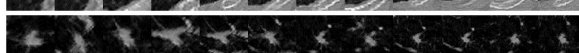
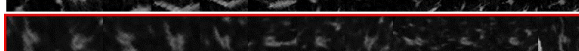
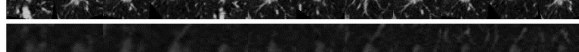
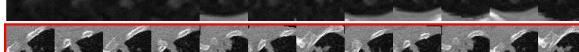
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	W 0.712
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	W 0.894
	W 0.924
	W 0.975
	W 0.977
	W 0.975
	W 0.989
	W 0.999
	W 0.998
	W 0.928
	W 0.987
	W 0.986
	W 0.985
	W 0.865
	W 0.965
	W 0.967
	W 0.995
	W 0.997
	W 0.992
	W 0.609
	W 1.000
	W 0.525
	W 0.990
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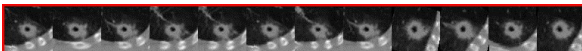
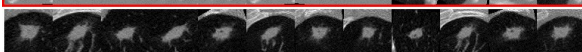
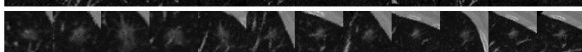
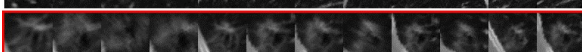
B. GGO for msnodules

	G	0.529
	G	0.652
	G	0.561
	G	0.999
	G	0.691
	V	0.858
	G	0.998
	N	1.000
	N	0.999
	N	1.000
	N	0.999
	N	0.999
	N	1.000
	N	1.000
	N	1.000
	N	0.963
	N	0.817
	G	0.991
	G	0.970
	G	0.917
	G	0.998
	G	0.763
	G	0.998
	G	0.875
	G	0.958
	G	0.444
	G	0.918
	N	0.671
	N	0.938
	G	0.625
	V	0.852
	N	0.971
	W	0.811
	W	0.519

	G	0.837
	N	0.590
	G	0.567
	G	0.955
	V	0.582
	N	0.694
	G	0.734
	G	0.979
	G	0.934
	G	0.989
	G	0.997
	N	0.826
	V	0.470
	V	0.462
	W	0.694
	W	0.951
	V	0.897
	W	0.480
	G	0.599
	G	0.961
	G	0.998
	G	0.992
	G	0.854
	G	0.986
	G	0.999
	G	0.998
	G	0.974
	G	0.953
	G	0.992
	G	1.000
	G	0.956
	G	0.999
	G	0.762
	G	0.994
	G	0.996

	G	0.987
	N	1.000
	N	1.000
	P	0.730
	N	1.000
	N	0.999
	N	1.000
	N	0.977
	N	0.909
	N	0.999
	P	0.948
	W	0.576
	W	0.823
	G	0.603
	W	0.675
	W	0.514
	V	0.861
	G	0.945
	W	0.774
	W	0.639
	G	0.886
	G	1.000
	G	0.883
	G	0.985
	G	0.741
	G	0.882
	G	0.574
	N	0.972
	N	0.998
	N	0.985
	N	0.948
	N	0.997
	N	0.997
	N	0.991
	N	0.999

	N	0.992
	N	0.993
	N	0.993
	N	0.969
	N	0.883
	N	0.963
	V	0.931
	W	0.376
	V	0.926
	W	0.552
	G	0.641
	V	0.986
	N	0.991
	N	0.934
	N	0.816
	N	0.978
	G	0.778
	N	0.584
	N	0.879
	G	0.540
	N	0.991
	G	0.873
	G	0.956
	N	1.000
	G	0.823
	G	0.962
	G	0.861
	G	0.921
	G	0.458
	V	0.674
	G	0.448
	G	0.991
	G	0.502
	N	0.998
	G	0.489

	N 0.996
	G 0.606
	G 1.000
	N 0.971
	V 0.774
	N 0.994

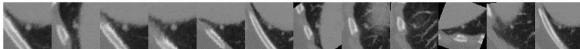
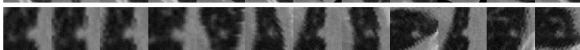
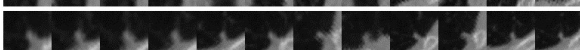
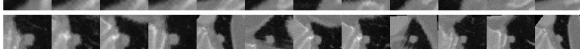
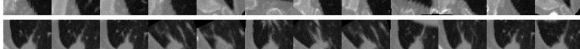
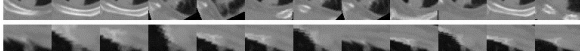
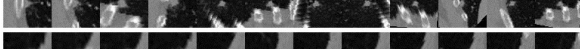
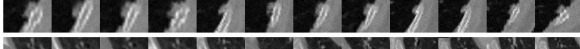
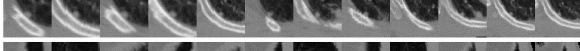
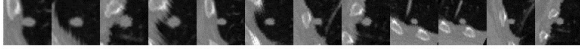
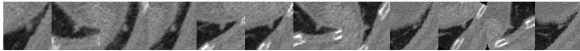
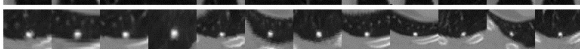
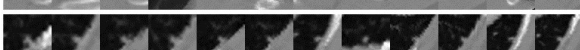
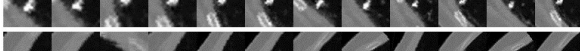
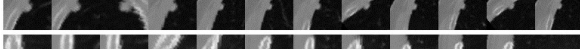
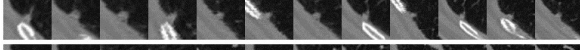
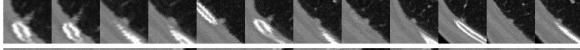
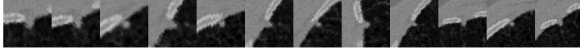
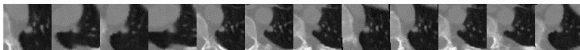
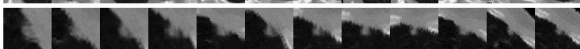
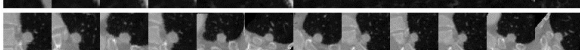
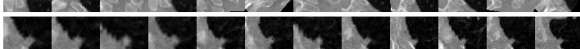
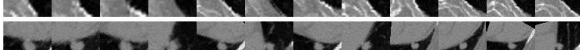
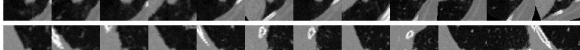
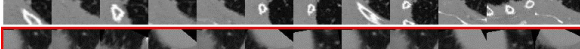
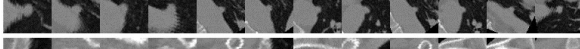
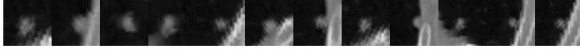
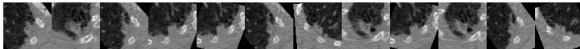
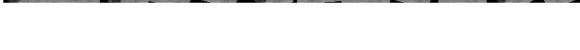
C. Juxta-pleural for msnodules

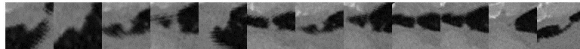
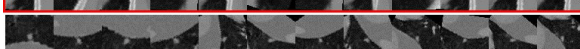
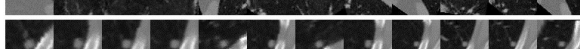
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	N	0.964
	J	0.408
	N	0.806
	J	0.371
	J	0.994
	J	0.911
	J	0.972
	J	0.821
	J	1.000
	J	0.980
	J	0.933
	J	1.000
	J	0.987
	J	0.983
	J	0.370
	J	1.000
	J	0.934
	J	0.997
	J	0.611
	J	0.990
	J	0.996
	G	0.989
	J	0.997
	J	0.983
	J	0.813
	J	0.974
	J	0.997
	J	0.962
	J	0.999
	J	0.991
	J	0.945
	J	0.893
	J	0.999

	J	0.872
	J	0.982
	J	0.954
	J	0.980
	J	0.998
	J	0.972
	J	0.620
	N	0.892
	N	1.000
	J	0.479
	J	0.865
	J	0.651
	J	0.982
	J	0.999
	J	0.997
	N	0.563
	J	0.992
	J	0.993
	J	1.000
	J	0.995
	J	0.997
	J	0.933
	J	0.999
	J	0.560
	J	0.682
	J	0.474
	J	0.837
	J	0.979
	J	0.888
	J	0.868
	J	1.000
	J	1.000
	J	1.000
	J	1.000
	J	0.995

	N
	0.879
	J
	0.992
	J
	0.989
	J
	0.924
	J
	1.000
	J
	0.999
	J
	1.000
	J
	0.999
	J
	0.964
	J
	1.000
	J
	1.000
	J
	0.988
	J
	0.902
	J
	0.924
	J
	0.928
	J
	0.910
	J
	1.000
	J
	1.000
	J
	0.984
	J
	0.995
	J
	0.550
	J
	0.938
	J
	0.823
	J
	0.985
	N
	0.514
	N
	0.912
	J
	0.999
	J
	0.979
	J
	0.752
	J
	0.754
	N
	0.890
	J
	0.976
	J
	0.657
	J
	0.535
	N
	0.970

	J
	0.919
	J
	0.908
	N
	0.987
	J
	0.538
	J
	0.868
	J
	0.925
	J
	0.956
	J
	0.963
	J
	0.845
	J
	0.753
	J
	0.999
	J
	0.984
	J
	1.000
	J
	0.971
	J
	0.514
	J
	1.000
	N
	1.000
	J
	0.988
	J
	0.827
	J
	0.988
	N
	0.890
	J
	0.998
	G
	0.645
	J
	0.697
	J
	0.904
	J
	0.999
	J
	0.987
	J
	0.991
	J
	0.968
	J
	0.967
	J
	0.998
	J
	0.598
	J
	0.998
	N
	0.978
	N
	1.000

	J
	0.889
	J
	0.984
	J
	0.972
	J
	1.000
	J
	0.588
	J
	0.994
	J
	1.000
	J
	0.999
	J
	0.957
	J
	0.997
	J
	0.886
	J
	0.973
	J
	0.999
	J
	0.997
	J
	1.000
	J
	0.993
	N
	0.933
	J
	0.978
	J
	1.000
	J
	0.999
	J
	0.933
	J
	0.992
	J
	1.000
	J
	0.999
	J
	0.784
	J
	1.000
	J
	0.981
	J
	0.963
	J
	0.999
	N
	0.947
	J
	0.998
	J
	0.999
	J
	0.655
	J
	0.880
	J
	0.997

	J
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	J
	0.765
	N
	0.968
	J
	0.996
	J
	0.541

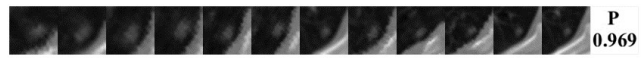
D. *Pleural-tail for msnodules*

	P
	0.990
	P
	0.986
	P
	0.706
	P
	0.503
	P
	0.975
	P
	0.957
	P
	0.845
	N
	0.653
	P
	0.874
	G
	0.732
	P
	0.522
	P
	0.795
	P
	0.997
	N
	0.639
	N
	0.931
	P
	1.000
	P
	0.952
	P
	0.644
	P
	0.975
	P
	0.999
	P
	0.996
	P
	0.989
	P
	0.529
	P
	0.949
	P
	0.983
	P
	0.984
	P
	0.805
	P
	0.891
	P
	0.531
	P
	1.000
	P
	0.999
	P
	1.000
	P
	0.988
	P
	0.989
	P
	0.994

	P
	0.799
	P
	0.907
	P
	0.626
	P
	0.987
	P
	0.996
	P
	0.836
	P
	0.995
	P
	0.996
	P
	0.982
	P
	0.993
	P
	0.886
	P
	0.755
	P
	0.511
	P
	0.936
	P
	0.551
	P
	0.861
	P
	0.999
	P
	1.000
	P
	0.577
	P
	0.893
	P
	0.997
	P
	0.739
	P
	0.872
	P
	0.876
	N
	0.844
	N
	0.710
	P
	0.875
	P
	0.998
	P
	0.966
	P
	0.958
	P
	0.993
	P
	0.998
	P
	0.815
	P
	0.702
	P
	0.489

	P
	0.766
	P
	0.846
	N
	0.875
	N
	0.949
	N
	0.998
	P
	0.847
	P
	0.998
	P
	1.000
	N
	0.976
	W
	0.392
	P
	0.393
	P
	0.965
	P
	0.504
	P
	1.000
	P
	1.000
	P
	0.996
	P
	0.721
	P
	0.828
	P
	0.841
	P
	0.593
	P
	0.589
	P
	0.999
	P
	0.509
	G
	0.785
	P
	0.454
	P
	0.916
	P
	0.931
	P
	0.989
	P
	0.988
	P
	0.848
	P
	0.986
	P
	0.970
	P
	0.982
	P
	0.446
	P
	0.999

	P
	0.999
	P
	0.987
	P
	0.743
	P
	0.989
	P
	0.989
	P
	0.635
	P
	0.901
	P
	0.989
	P
	0.811
	P
	0.582
	P
	0.999
	P
	0.923
	P
	0.996
	P
	0.985
	P
	0.908
	N
	0.882
	P
	0.994
	P
	0.631
	P
	0.803
	P
	1.000
	P
	0.995
	P
	0.991
	P
	0.608
	P
	1.000
	P
	0.753
	N
	0.957
	P
	0.759
	P
	1.000
	W
	0.469
	P
	0.927
	P
	0.978
	P
	0.897
	P
	0.981
	P
	0.739
	P
	0.994



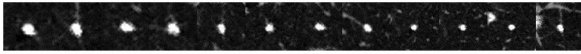
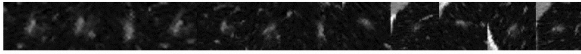
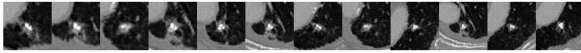
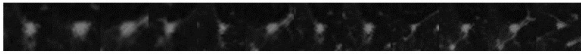
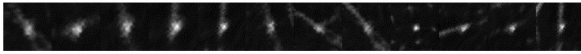
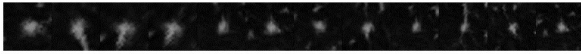
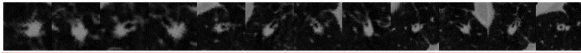
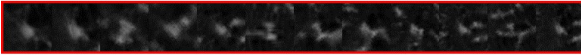
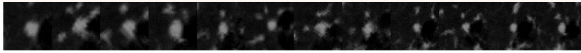
E. Vascularized for msnodules

	V
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	V
	0.826
	V
	1.000
	V
	0.505
	N
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	V
	0.944
	V
	1.000
	V
	0.851
	V
	0.976
	V
	0.992
	V
	1.000
	V
	1.000
	V
	0.960
	V
	0.995
	W
	0.700
	V
	1.000
	J
	0.454
	V
	0.718
	V
	0.613
	V
	0.980
	V
	0.540
	V
	0.961
	V
	0.998
	V
	0.998
	V
	0.805
	V
	0.997
	V
	0.845
	V
	0.985
	V
	0.926
	V
	0.711
	V
	0.758
	V
	0.573
	V
	0.957
	V
	0.995
	V
	0.994

	V
	0.906
	N
	0.361
	N
	0.942
	V
	0.964
	V
	0.800
	V
	0.781
	V
	1.000
	N
	0.499
	N
	0.791
	V
	0.641
	W
	0.987
	V
	0.414
	V
	0.708
	V
	0.897
	V
	0.980
	V
	0.815
	V
	0.846
	V
	0.577
	V
	0.974
	J
	0.717
	V
	0.774
	V
	0.850
	V
	0.860
	V
	1.000
	V
	0.999
	V
	0.984
	V
	0.999
	V
	0.587
	V
	0.990
	V
	0.786
	V
	0.903
	V
	0.609
	V
	0.848
	V
	0.987
	W
	0.948

	V
	0.994
	V
	0.697
	V
	0.959
	V
	0.916
	G
	0.829
	V
	0.992
	V
	0.984
	V
	0.834
	V
	0.963
	V
	1.000
	G
	0.657
	V
	0.983
	V
	0.571
	V
	0.999
	V
	0.989
	V
	0.953
	V
	0.728
	V
	0.921
	V
	1.000
	V
	0.779
	V
	0.962
	V
	0.686
	V
	0.999
	W
	0.970
	V
	0.979
	V
	0.469
	V
	1.000
	V
	0.935
	V
	0.992
	V
	0.914
	V
	0.931
	V
	1.000
	V
	0.991
	V
	0.950
	V
	1.000

	V
	0.954
	V
	0.493
	V
	0.993
	V
	0.891
	V
	0.997
	V
	0.707
	V
	0.999
	V
	0.547
	N
	0.780
	V
	0.743
	V
	0.956
	V
	1.000
	N
	0.477
	V
	0.978
	V
	0.992
	N
	0.989
	V
	0.942
	V
	0.868
	V
	0.992
	V
	0.775
	V
	0.951
	V
	0.683
	V
	0.999
	V
	0.877
	V
	0.929
	V
	0.623
	V
	0.911
	V
	0.976
	V
	0.939
	V
	0.997
	V
	0.848
	V
	0.975
	V
	0.685
	V
	0.736
	V
	0.719

	V 0.989
	V 0.669
	V 0.994
	V 0.643
	V 0.773
	V 0.508
	V 0.610
	V 0.858
	W 0.647
	V 0.805

F. Non-nodule for msnodules

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	0.663
	N
	0.963
	N
	0.991
	N
	0.970
	N
	0.665
	N
	0.739
	N
	1.000
	N
	0.831
	N
	0.978
	N
	0.897
	N
	0.601
	N
	0.997
	N
	0.949
	N
	0.993
	N
	0.999
	N
	0.770
	N
	0.986
	N
	0.995
	N
	0.992
	N
	0.998
	N
	0.946
	N
	1.000
	N
	1.000
	N
	0.692
	N
	0.999
	N
	1.000
	W
	0.985
	N
	1.000
	V
	0.793
	N
	1.000
	N
	0.997
	W
	0.780
	J
	0.997
	N
	0.887
	N
	1.000

	N
	0.990
	N
	1.000
	N
	0.998
	N
	0.967
	N
	1.000
	N
	1.000
	N
	0.999
	P
	0.764
	N
	1.000
	N
	0.955
	N
	1.000
	N
	0.918
	N
	0.583
	N
	1.000
	N
	0.998
	N
	1.000
	N
	0.979
	N
	0.982
	G
	0.943
	N
	0.713
	N
	1.000
	N
	0.802
	N
	0.972
	W
	0.515
	W
	0.755
	N
	0.951
	N
	1.000
	N
	1.000
	N
	0.901
	W
	0.979
	N
	0.802
	N
	0.993
	N
	0.565
	N
	0.998
	N
	1.000

	N
	1.000
	N
	1.000
	N
	1.000
	N
	0.999
	P
	0.570
	N
	1.000
	N
	1.000
	G
	0.998
	N
	1.000
	N
	1.000
	N
	1.000
	N
	0.777
	N
	1.000
	N
	0.999
	N
	1.000
	N
	0.985
	N
	1.000
	N
	0.903
	N
	0.995
	N
	0.972
	P
	0.974
	N
	1.000
	N
	1.000
	N
	0.985
	N
	0.999
	N
	0.345
	N
	1.000
	N
	0.998
	N
	0.984
	N
	0.998
	N
	1.000
	N
	0.997
	N
	0.552
	N
	1.000
	N
	1.000

	N
	0.946
	N
	0.537
	N
	0.989
	N
	0.973
	N
	1.000
	N
	1.000
	N
	0.626
	N
	1.000
	N
	1.000
	N
	0.965
	N
	1.000
	W
	0.748
	N
	1.000
	J
	0.555
	N
	0.986
	N
	0.509
	W
	0.692
	N
	0.955
	N
	0.998
	N
	0.966
	V
	0.994
	N
	0.994
	N
	1.000
	N
	1.000
	N
	0.978
	N
	0.932
	J
	0.925
	N
	0.983
	N
	0.855
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	N
	1.000
	N
	1.000
	N
	0.974
	W
	0.819
	N
	0.466

	N 0.987
	N 0.993
	N 1.000
	N 1.000
	G 0.757
	N 0.976
	N 1.000
	N 0.996
	N 0.994
	N 1.000
	W 0.771
	N 0.999
	N 0.958
	N 1.000
	N 0.995
	N 0.782
	N 0.999
	N 0.518
	N 1.000
	N 1.000
	N 1.000
	N 0.788
	V 0.509
	N 1.000
	V 0.959
	N 1.000
	N 0.998
	N 1.000
	N 1.000
	N 1.000