

MedCLIP View Classification on IU-CXR
Pathology-rich sanity subset (Triple preprocessing)

Total samples (Frontal + Lateral): 54

Normalized accuracy: 0.5185 (28 / 54)

CLAHE accuracy: 0.5000 (27 / 54)

Gauss+CLAHE accuracy: 0.5000 (27 / 54)

Misclassified (Normalized): 26

Misclassified (CLAHE): 27

Misclassified (Gauss+CLAHE): 27

Timing (per-image, CPU-only):

- Normalized avg/median/max: 104.37 / 101.41 / 157.71 ms

- CLAHE avg/median/max: 101.62 / 100.39 / 187.88 ms

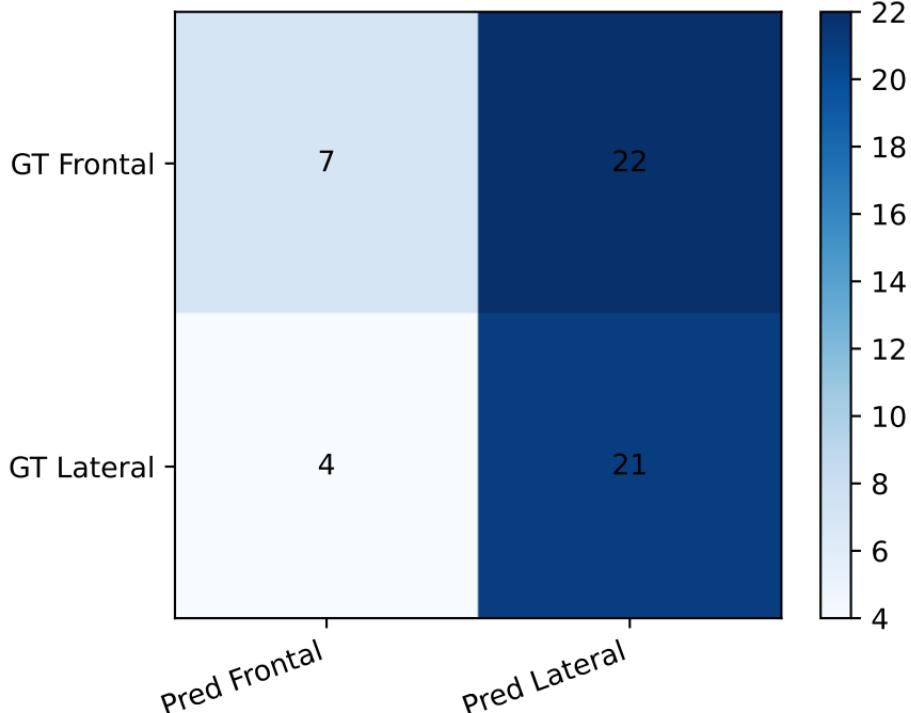
- Gauss+CLAHE avg/median/max: 100.05 / 99.42 / 137.83 ms

High-level interpretation:

- Normalized images give the best view classification accuracy on this subset.

- Compare confusion matrices to inspect whether errors are mainly Frontal→Lateral flips or vice versa.

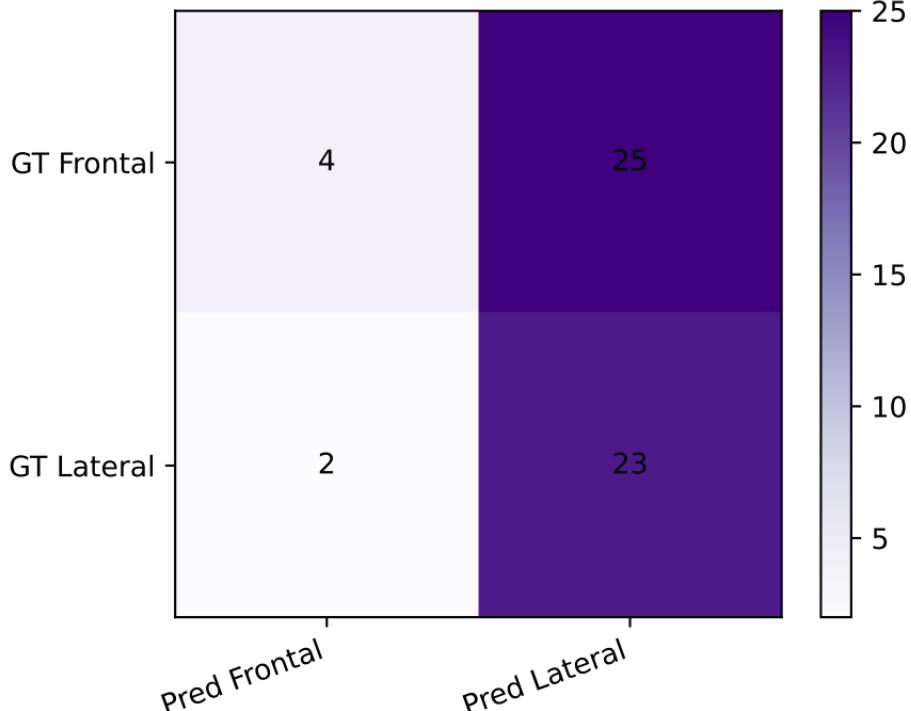
Confusion Matrix - Normalized



Normalized: accuracy = 51.85% on 54 images.

- GT Frontal: 7 correctly predicted as Frontal, 22 misclassified as Lateral.
- GT Lateral: 21 correctly predicted as Lateral, 4 misclassified as Frontal.
- Model tends to flip Frontal views into Lateral more often than vice versa.

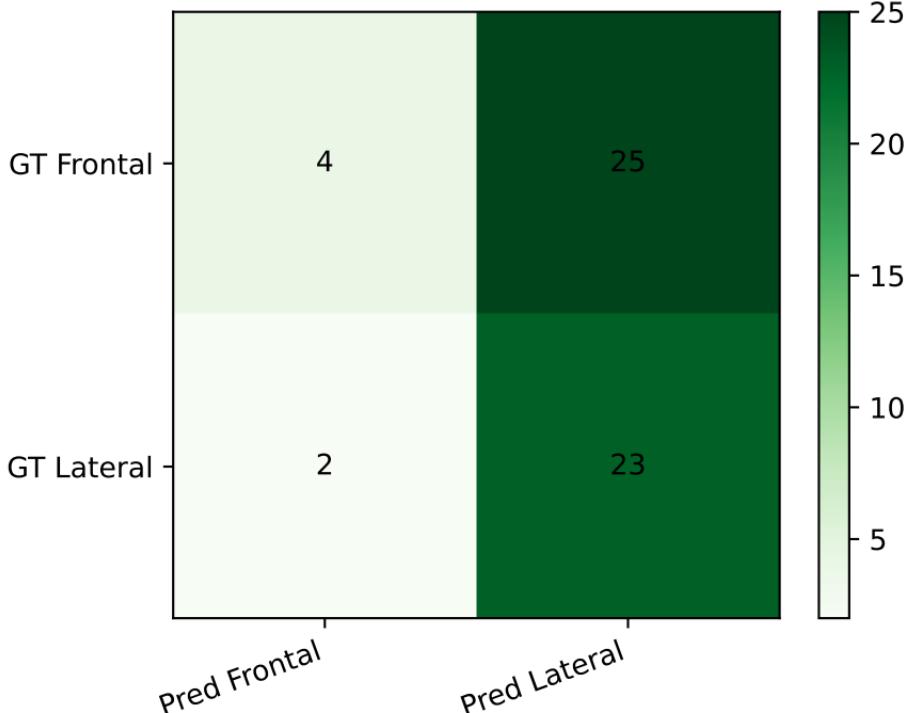
Confusion Matrix - CLAHE



CLAHE: accuracy = 50.00% on 54 images.

- GT Frontal: 4 correctly predicted as Frontal, 25 misclassified as Lateral.
- GT Lateral: 23 correctly predicted as Lateral, 2 misclassified as Frontal.
- Model tends to flip Frontal views into Lateral more often than vice versa.

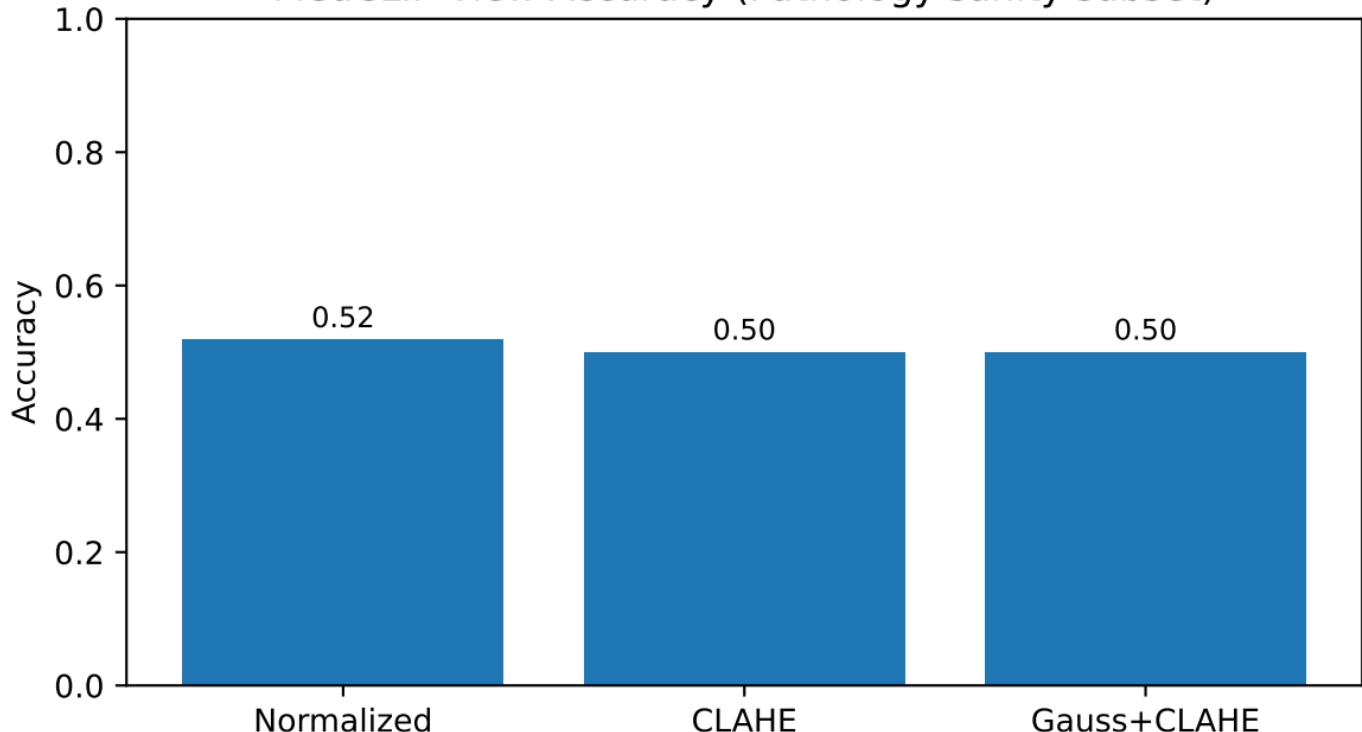
Confusion Matrix - Gauss+CLAHE



Gauss+CLAHE: accuracy = 50.00% on 54 images.

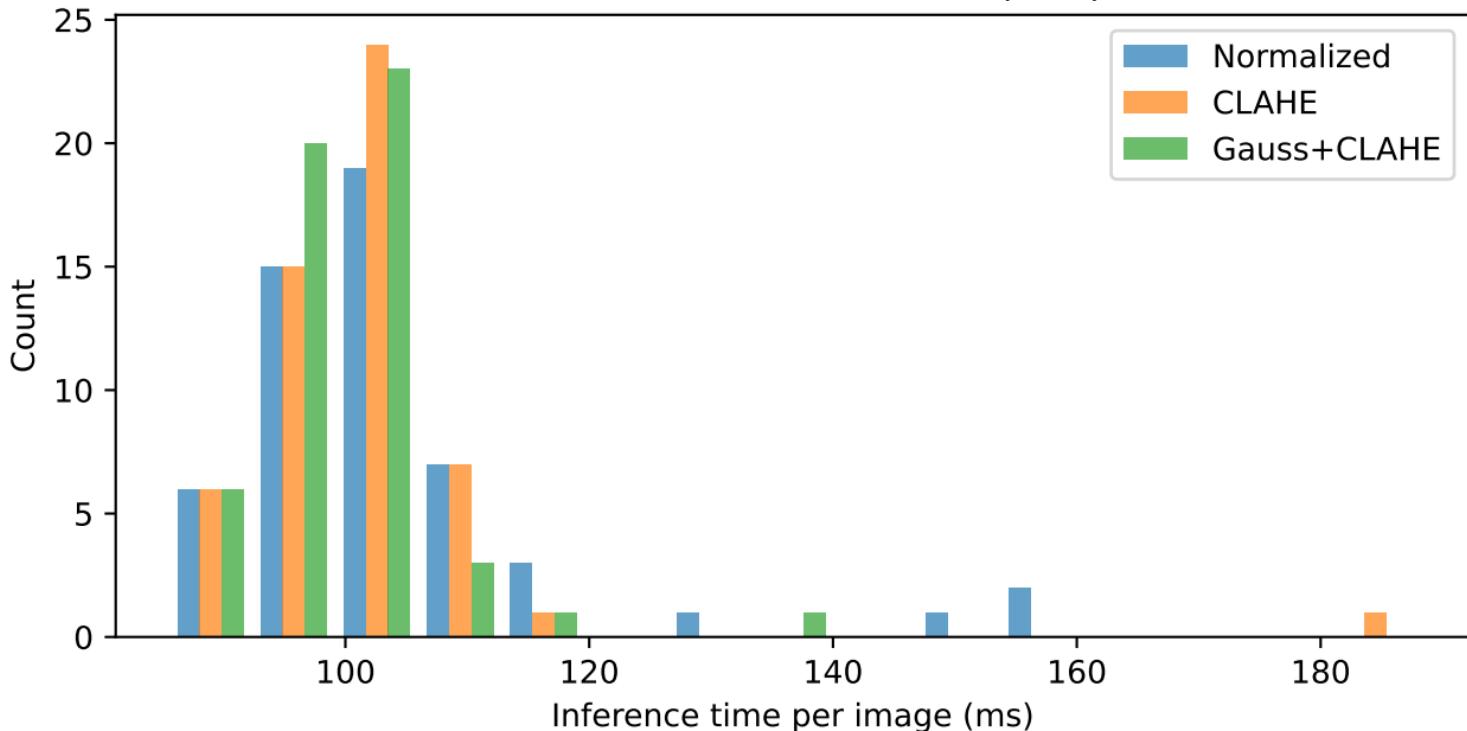
- GT Frontal: 4 correctly predicted as Frontal, 25 misclassified as Lateral.
- GT Lateral: 23 correctly predicted as Lateral, 2 misclassified as Frontal.
- Model tends to flip Frontal views into Lateral more often than vice versa.

MedCLIP View Accuracy (Pathology sanity subset)



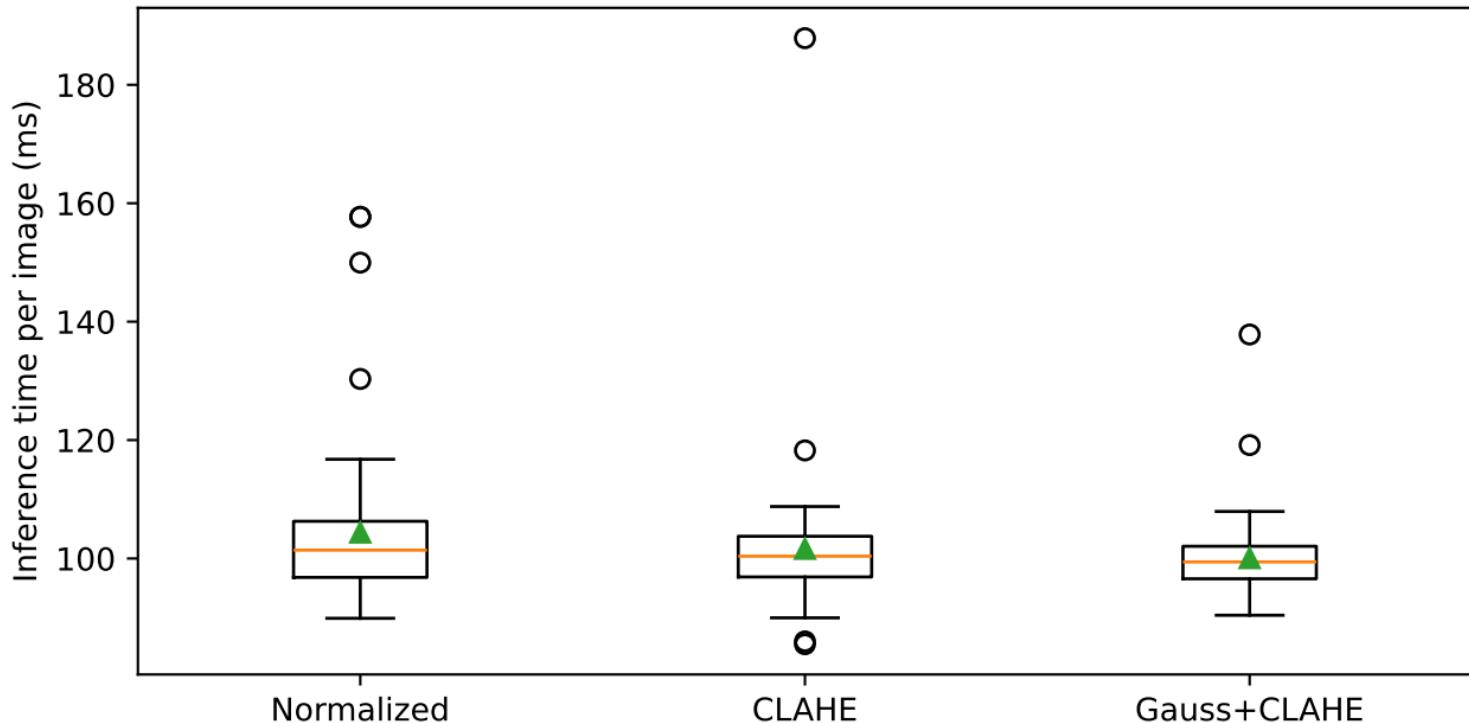
Comparison of overall view-classification accuracy across preprocessing pipelines.
The tallest bar corresponds to the best-performing image preprocessing for this subset.

Inference time distribution (CPU)



Histogram of per-image inference times. Overlapping distributions indicate similar runtime costs for all three preprocessing strategies on CPU.

Inference time boxplot (CPU)



Boxplot summarizing median, IQR, and outliers of inference time. Similar medians and spreads indicate that Gaussian+CLAHE does not introduce a major latency penalty relative to normalized/CLAHE.

Per-image predictions (rows 1-18 of 54)

UID	Image_ID	GT_View	Normal_Pred	CLAHE_Pred	GaussCLAHE_Pred	Normal_Inferenc	CLAHE_Inference	GaussCLAHE_Inf	Pathology_Labels_14
174	174_IM-0488-1001.dcm.png	Frontal	Frontal	Frontal	Frontal	149.98	118.25	119.16	pneumothorax,support_devices
174	174_IM-0488-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	130.33	107.20	101.91	pneumothorax,support_devices
206	206_IM-0697-6001.dcm.png	Frontal	Lateral	Lateral	Lateral	112.96	102.15	100.16	cardiomegaly,lung_lesion
289	289_IM-1292-0001-0001.dcm.png	Frontal	Lateral	Lateral	Lateral	105.77	99.52	97.01	edema,consolidation,pleural_effusion,support_devices
289	289_IM-1292-0001-0002.dcm.png	Lateral	Frontal	Lateral	Lateral	104.47	98.59	97.72	edema,consolidation,pleural_effusion,support_devices
295	295_IM-1348-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	91.75	102.47	104.24	consolidation,pneumothorax,pleural_effusion,fracture
295	295_IM-1348-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	104.49	102.19	97.46	consolidation,pneumothorax,pleural_effusion,fracture
332	332_IM-1588-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	97.47	98.22	107.94	lung_opacity,pneumonia,pleural_effusion
332	332_IM-1588-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	107.02	96.58	99.72	lung_opacity,pneumonia,pleural_effusion
342	342_IM-1655-0001-0001.dcm.png	Frontal	Lateral	Lateral	Lateral	97.88	100.18	95.46	cardiomegaly
342	342_IM-1655-0001-0002.dcm.png	Lateral	Lateral	Lateral	Lateral	101.96	105.84	104.99	cardiomegaly
403	403_IM-2052-2001.dcm.png	Frontal	Lateral	Lateral	Lateral	113.46	102.19	106.15	lung_opacity,fracture
403	403_IM-2052-1001.dcm.png	Lateral	Lateral	Lateral	Lateral	90.60	100.78	90.47	lung_opacity,fracture
552	552_IM-2155-1001.dcm.png	Frontal	Frontal	Lateral	Lateral	97.31	101.27	101.15	consolidation,pleural_effusion
552	552_IM-2155-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	116.76	95.18	99.32	consolidation,pleural_effusion
558	558_IM-2158-0001-0001.dcm.png	Frontal	Frontal	Lateral	Lateral	100.62	102.36	98.70	consolidation,pneumothorax
558	558_IM-2158-0001-0002.dcm.png	Lateral	Lateral	Lateral	Lateral	106.46	105.85	98.85	consolidation,pneumothorax
621	621_IM-2203-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	101.34	100.17	98.99	pneumonia,pneumothorax

Per-image predictions (rows 19–36 of 54)

UID	Image_ID	GT_View	Normal_Pred	CLAHE_Pred	GaussCLAHE_Pred	Normal_Inferenc	CLAHE_Inference	GaussCLAHE_Inf	Pathology_Labels_14
621	621_IM-2203-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	104.62	99.26	100.94	pneumonia,pneumothorax
729	729_IM-2288-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	97.04	99.13	103.25	lung_opacity,lung_lesion,pneumothorax,pleural_effusion
729	729_IM-2288-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	104.54	103.38	102.84	lung_opacity,lung_lesion,pneumothorax,pleural_effusion
1007	1007_IM-0008-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	101.49	96.28	96.43	lung_opacity,pleural_effusion
1007	1007_IM-0008-3001.dcm.png	Frontal	Frontal	Lateral	Lateral	101.69	108.78	101.70	lung_opacity,pleural_effusion
1007	1007_IM-0008-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	109.48	106.80	98.07	lung_opacity,pleural_effusion
1053	1053_IM-0040-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	107.31	89.98	99.89	cardiomegaly,consolidation,atelectasis,pneumothorax
1053	1053_IM-0040-3003.dcm.png	Lateral	Frontal	Lateral	Lateral	96.73	99.74	97.09	cardiomegaly,consolidation,atelectasis,pneumothorax
1059	1059_IM-0041-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	101.58	101.67	97.46	lung_opacity,pneumonia,pleural_effusion
1375	1375_IM-0241-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	96.36	106.96	91.42	cardiomegaly,edema,pneumonia
1375	1375_IM-0241-3001.dcm.png	Frontal	Lateral	Lateral	Lateral	98.81	97.80	95.71	cardiomegaly,edema,pneumonia
1375	1375_IM-0241-4001.dcm.png	Lateral	Lateral	Lateral	Lateral	103.99	90.97	99.53	cardiomegaly,edema,pneumonia
1437	1437_IM-0281-3001.dcm.png	Frontal	Lateral	Lateral	Lateral	97.79	93.39	90.98	lung_opacity,pneumothorax,pleural_effusion
1437	1437_IM-0281-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	99.31	103.12	96.86	lung_opacity,pneumothorax,pleural_effusion
1577	1577_IM-0375-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	103.29	93.97	92.41	lung_opacity,pleural_effusion
1577	1577_IM-0375-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	93.03	85.53	97.75	lung_opacity,pleural_effusion
1581	1581_IM-0378-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	91.25	104.79	103.86	lung_lesion,consolidation,pneumothorax,pleural_effusion
1581	1581_IM-0378-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	157.70	103.88	94.39	lung_lesion,consolidation,pneumothorax,pleural_effusion

Per-image predictions (rows 37–54 of 54)

UID	Image_ID	GT_View	Normal_Pred	CLAHE_Pred	GaussCLAHE_Pred	Normal_Inferenc	CLAHE_Inference	GaussCLAHE_Inf	Pathology_Labels_14
1678	1678_IM-0447-0001-0001.dcm.png	Frontal	Frontal	Frontal	Frontal	100.96	106.70	91.47	lung_opacity, lung_lesion, consolidation, pleural_effusion, support_devices
1678	1678_IM-0447-0001-0002.dcm.png	Lateral	Frontal	Frontal	Frontal	103.30	98.15	90.42	lung_opacity, lung_lesion, consolidation, pleural_effusion, support_devices
1815	1815_IM-0527-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	95.80	91.96	96.48	pleural_effusion
1815	1815_IM-0527-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	94.80	98.55	100.83	pleural_effusion
1867	1867_IM-0560-4004.dcm.png	Frontal	Lateral	Lateral	Lateral	107.04	107.32	105.17	cardiomegaly, lung_opacity, edema, atelectasis, pleural_effusion, fracture
1867	1867_IM-0560-1001.dcm.png	Lateral	Lateral	Lateral	Lateral	109.51	90.00	92.32	cardiomegaly, lung_opacity, edema, atelectasis, pleural_effusion, fracture
2077	2077_IM-0710-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	90.85	101.19	107.83	consolidation, atelectasis, pneumothorax, pleural_effusion, support_devices
2077	2077_IM-0710-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	96.13	86.00	101.11	consolidation, atelectasis, pneumothorax, pleural_effusion, support_devices
2095	2095_IM-0725-4001.dcm.png	Frontal	Lateral	Lateral	Lateral	96.72	94.60	102.08	atelectasis, pneumothorax, pleural_effusion, fracture
2095	2095_IM-0725-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	110.32	99.26	95.38	atelectasis, pneumothorax, pleural_effusion, fracture
2396	2396_IM-0945-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	92.72	93.47	102.03	lung_opacity, consolidation, pneumothorax, pleural_effusion
2396	2396_IM-0945-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	89.90	100.60	103.38	lung_opacity, consolidation, pneumothorax, pleural_effusion
2752	2752_IM-1202-0001-0001.dcm.png	Frontal	Frontal	Frontal	Frontal	97.85	98.81	97.59	cardiomegaly, lung_opacity, edema, atelectasis, pleural_effusion
2752	2752_IM-1202-0001-0002.dcm.png	Lateral	Frontal	Frontal	Frontal	103.08	94.24	101.53	cardiomegaly, lung_opacity, edema, atelectasis, pleural_effusion
3074	3074_IM-1435-1001.dcm.png	Frontal	Lateral	Lateral	Lateral	99.54	104.82	137.83	lung_opacity, pneumonia
3074	3074_IM-1435-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	157.71	187.88	92.57	lung_opacity, pneumonia
3636	3636_IM-1803-1001.dcm.png	Frontal	Frontal	Frontal	Frontal	101.27	102.69	101.52	lung_opacity, pneumothorax, pleural_effusion
3636	3636_IM-1803-2001.dcm.png	Lateral	Lateral	Lateral	Lateral	92.02	106.75	103.04	lung_opacity, pneumothorax, pleural_effusion