

Environment Settings

Input size : 224*224

Epoch : 10

Optimizer : Adam

Learning Rate : 10^{-4}

Random seed: 60

Non-augmented dataset

Basic Models

1. Recall

	DANet	CBAM	PAN
Center	96.349	96.702	96.584
Donut	91.429	86.667	80.952
Edge-Loc	93.542	91.643	92.403
Edge-Ring	97.768	97.717	98.072
Loc	85.431	85.573	87.129
Random	88.757	91.124	84.615
Scratch	87.054	93.750	91.071
Near-full	80.769	96.154	100

2. F1 score

	DANet	CBAM	PAN
Center	96.235	96.588	96.812
Donut	84.956	83.871	80.952
Edge-Loc	91.841	91.730	91.879
Edge-Ring	98.367	98.391	98.372
Loc	86.595	86.863	86.883
Random	91.463	92.492	89.937
Scratch	87.248	85.540	88.312
Near-full	85.714	90.909	89.655

3. Overall

	DANet	CBAM	PAN
F1-Macro	90.303	90.798	90.350
Accuracy	93.966	93.985	94.044

Modifications

1. Recall

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
Center	97.762	95.878	95.171	95.878
Donut	94.286	89.524	85.714	89.524
Edge-Loc	91.073	94.682	90.788	89.744
Edge-Ring	99.391	97.362	97.971	98.985
Loc	79.774	84.441	87.836	83.734
Random	91.716	90.533	92.899	87.574
Scratch	93.304	89.732	91.071	89.732
Near-full	88.462	100	80.769	92.308

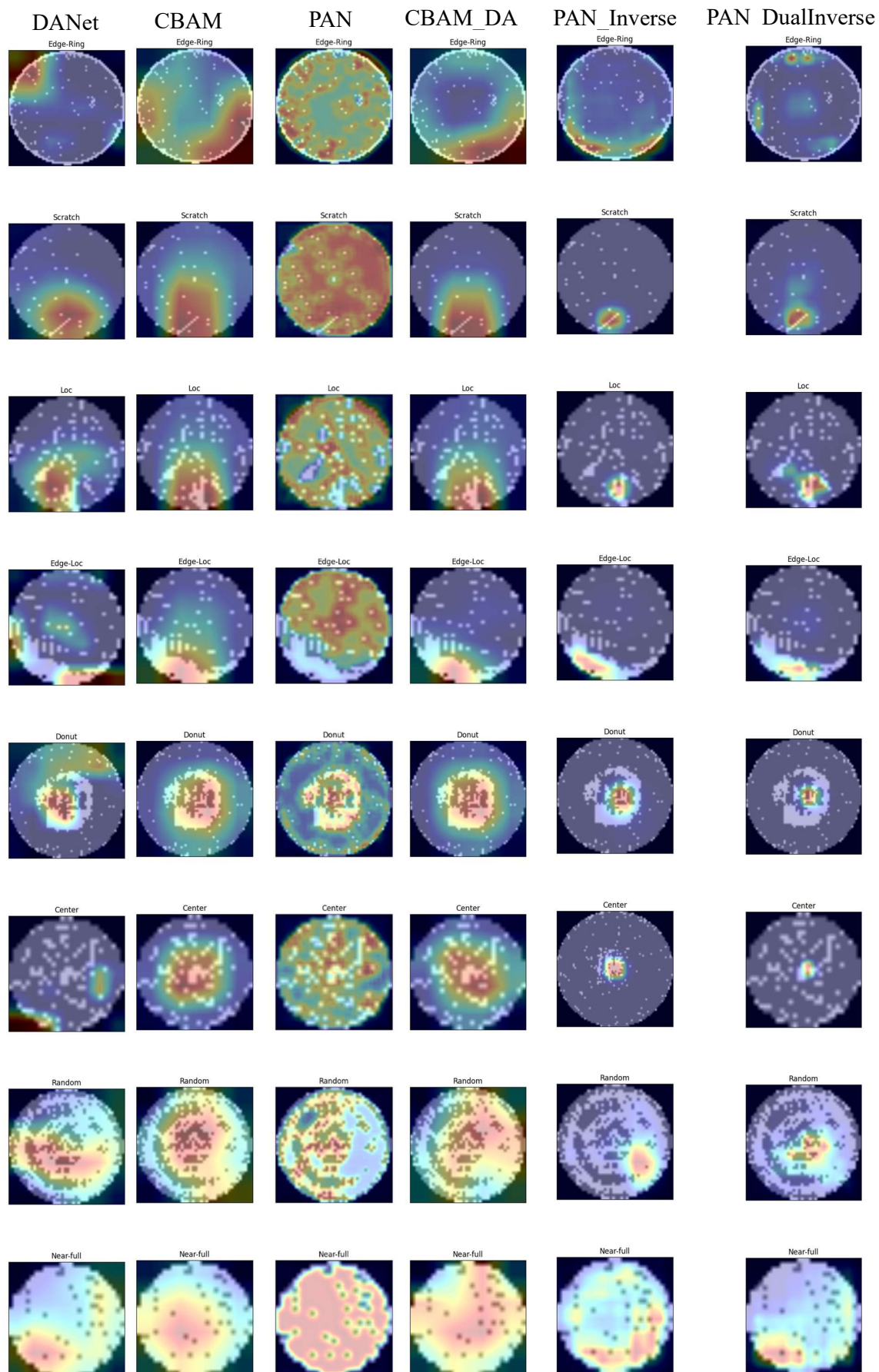
2. F1 score

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
Center	97.133	96.675	96.248	95.652
Donut	86.842	88.263	84.207	82.456
Edge-Loc	91.726	91.594	91.659	91.172
Edge-Ring	98.195	98.385	98.395	98.262
Loc	85.714	86.647	86.190	84.511
Random	91.988	91.617	91.279	91.641
Scratch	86.186	87.965	86.624	87.773
Near-full	88.462	81.250	85.714	92.308

3. Overall

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
F1-Macro	90.781	90.299	90.077	90.472
Accuracy	94.005	94.063	93.809	93.437

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Augmented dataset

Basic Models

1. Recall

	DANet	CBAM	PAN
Center	97.605	98.683	96.527
Donut	100	97.868	99.225
Edge-Loc	91.928	89.174	82.906
Edge-Ring	98.040	97.937	98.556
Loc	83.134	90.438	92.032
Random	96.518	97.485	99.033
Scratch	93.515	88.494	91.423
Near-full	99.782	100	99.782

2. F1 score

	DANet	CBAM	PAN
Center	96.736	96.600	96.701
Donut	95.379	98.058	97.990
Edge-Loc	91.407	90.725	88.093
Edge-Ring	98.472	98.547	98.176
Loc	86.285	87.308	87.115
Random	96.705	97.016	96.060
Scratch	94.204	92.459	93.177
Near-full	99.349	99.136	99.782

3. Overall

	DANet	CBAM	PAN
F1-Macro	94.817	95.176	94.637
Accuracy	95.115	94.981	94.687

Modifications

1. Recall

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
Center	97.006	96.647	97.126	96.407
Donut	97.868	97.868	98.643	96.705
Edge-Loc	94.302	87.844	95.062	92.023
Edge-Ring	98.350	98.865	96.699	98.350
Loc	79.814	90.040	86.853	84.064
Random	96.325	98.259	97.679	98.259
Scratch	92.469	91.213	87.657	93.069
Near-full	100	100	98.911	99.564

2. F1 score

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
Center	96.544	96.705	96.663	96.523
Donut	97.585	97.773	97.979	97.366
Edge-Loc	90.685	90.864	91.416	90.518
Edge-Ring	98.426	98.611	98.116	98.451
Loc	84.233	87.147	86.853	86.005
Random	97.266	96.670	96.836	96.762
Scratch	93.644	92.275	92.393	93.684
Near-full	99.029	99.566	99.235	99.348

3. Overall

	CBAM_DA	PAN_DA	PAN_Inverse	PAN_DualInverse
F1-Macro	94.676	94.951	94.936	94.832
Accuracy	94.885	95.191	95.084	95.008

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