

1 白背景適用前

1.1 Custom Model

表 1: Custom Model

Epoch	Train Accuracy	Validation Accuracy
1	99.48	100.00
2	100.00	99.99
3	100.00	99.99
4	99.97	100.00
5	100.00	100.00
6	100.00	100.00
7	100.00	100.00
8	100.00	100.00
9	100.00	100.00
10	100.00	100.00

1.2 ResNet 18

表 2: ResNet-18

Epoch	Train Accuracy	Validation Accuracy
1	97.92	99.28
2	99.23	99.22
3	99.47	99.53
4	99.61	99.48
5	99.68	99.52
6	99.76	99.38
7	99.83	99.59
8	99.83	99.51
9	99.88	99.45
10	99.88	99.52

表 3: ResNet-34

Epoch	Train Accuracy	Validation Accuracy
1	97.74	99.08
2	99.27	99.34
3	99.40	99.27
4	99.55	99.50
5	99.59	99.40
6	99.65	99.27
7	99.72	99.31
8	99.80	99.49
9	99.79	99.56
10	99.84	99.47

1.3 ResNet 34

1.4 ResNet 50

表 4: ResNet-50

Epoch	Train Accuracy	Validation Accuracy
1	95.26	98.58
2	98.69	98.76
3	99.10	99.20
4	99.32	99.25
5	99.39	99.34
6	99.50	99.37
7	99.54	99.40
8	99.66	99.28
9	99.71	99.36
10	99.75	99.39

2 白背景後の精度

2.1 Custom Model

表 5: Custom Model

Epoch	Train Accuracy	Validation Accuracy
1	99.06	99.35
2	99.52	99.50
3	99.58	99.47
4	99.61	99.53
5	99.63	99.58
6	99.63	99.59
7	99.65	99.57
8	99.66	99.58
9	99.65	99.57
10	99.68	99.58

2.2 resnet18

表 6: Resnet18 Model

Epoch	Train Accuracy	Validation Accuracy
1	97.75	98.45
2	99.24	99.39
3	99.32	99.20
4	99.41	99.12
5	99.50	99.43
6	99.50	99.15
7	99.54	98.93
8	99.53	99.45
9	99.57	99.49
10	99.59	99.39

2.3 resnet34

表 7: Resnet34 Model

Epoch	Train Accuracy	Validation Accuracy
1	97.48	98.90
2	99.13	99.25
3	99.26	99.29
4	99.33	99.04
5	99.41	99.25
6	99.45	99.31
7	99.52	99.39
8	99.54	99.12
9	99.54	99.43
10	99.56	99.45

2.4 ResNet50

表 8: Resnet50 Model

Epoch	Train Accuracy	Validation Accuracy
1	95.88	98.81
2	98.85	97.76
3	99.13	99.31
4	99.27	99.45
5	99.36	99.39
6	99.42	98.50
7	99.39	99.39
8	99.48	99.35
9	99.51	99.38
10	99.54	98.94

2.5 EfficientNetB0 Model

表 9: Efficientnetb0 Model

Epoch	Train Accuracy	Validation Accuracy
1	95.42	98.99
2	98.98	99.13
3	99.33	99.34
4	99.44	99.45
5	99.55	99.45
6	99.52	99.47
7	99.57	99.21
8	99.54	99.52
9	99.59	99.52
10	99.57	99.54

3 比較

表 10: 白背景適用前後でのモデル精度比較 (エポック 1, 2, 10)

モデル名	背景	エポック	訓練精度 (%)	検証精度 (%)
Custom Model	白背景適用前	1	99.48	100.00
		2	100.00	99.99
	
		10	100.00	100.00
Custom Model	白背景適用後	1	99.06	99.35
		2	99.52	99.50
	
		10	99.68	99.58
ResNet 18	白背景適用前	1	97.92	99.28
		2	99.23	99.22
	
		10	99.88	99.52
ResNet 18	白背景適用後	1	97.75	98.45
		2	99.24	99.39
	
		10	99.59	99.39
ResNet 34	白背景適用前	1	97.74	99.08
		2	99.27	99.34
	
		10	99.84	99.47
ResNet 34	白背景適用後	1	97.48	98.90
		2	99.13	99.25
	
		10	99.56	99.45
ResNet 50	白背景適用前	1	95.26	98.58
		2	98.69	98.76
	
		10	99.75	99.39
ResNet 50	白背景適用後	1	95.88	98.81
		2	98.85	97.76
	
		10	99.54	98.94
EfficientNetB0	白背景適用後	1	95.42	98.99
		2	98.98	99.13
	
		10	99.57	99.54