

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) / 8(softmax)	(5 epochs) 3mins 38s	1.119	34s 490us/step - loss: 2.0831 - accuracy: 0.1287	2
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x5 / 8(softmax)	(5 epochs) 3mins 53s	2.445	47s 680us/step - loss: 2.0796 - accuracy: 0.1249	3
Basic NN	Copy of row 4	9 / 64(relu) x5 / 8(softmax)	(5 epochs) 3min 53s	0.12	47s 681us/step - loss: 2.1311 - accuracy: 0.1258	4
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 10 / 8(softmax)	(5 epochs) 5 mins 8s	2	61s 884us/step - loss: 1.8690 - accuracy: 0.2677	5
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 50 / 8(softmax)	(5 epochs) 15mins 6s	10.74	3ms/step - loss: 2.0796 - accuracy: 0.1250	6
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 15 / 8(softmax)	(5 epochs) 6mins 24s	1.786	78s 1ms/step - loss: 1.8740 - accuracy: 0.2679	7
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 15 / 8(softmax)	(50 epochs) 1hr 36s	3.2	74s 1ms/step - loss: 1.8711 - accuracy: 0.2658	8

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Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 10 / 8(softmax)	(30 epochs) 33 mins 8s	6.468	58s 831us/step - loss: 1.8545 - accuracy: 0.2758	9
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 128(relu) x 10 / 8(softmax)	(5 epochs) 5 mins 34s	0.86	80s 1ms/step - loss: 2.0796 - accuracy: 0.1244	10
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 32(relu) x 20 / 8(softmax)	(5 epochs) 7mins 40s	2.06	92s 1ms/step - loss: 1.8836 - accuracy: 0.2646	11
Basic NN	SMOTE oversampling (12.5% for all classes)	9 / 16(relu) x 40 / 8(softmax)	(5 epochs) 8mins 14s	20.1	100s 1ms/step - loss: 2.0804 - accuracy: 0.1249	12
Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 4(relu) / 64(relu) x 10/ 8(softmax)	(10 epochs) 11mins 38s	3.7	69s 999us/step - loss: 1.8553 - accuracy: 0.2780	13
Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 4(relu) / 64(relu) x 10/ 8(softmax)	(30 epochs) 34mins 37s	6.963	71s 1ms/step - loss: 1.8611 - accuracy: 0.2738	14
Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 6(relu) / 64(relu) x 10/ 8(softmax)	(10 epochs) 11mins 23s	5.922	73s 1ms/step - loss: 1.8598 - accuracy: 0.2746	15

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Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 6(relu) / 64(relu) x 10/ 8(softmax)	(20 epochs) 22mins 51s	5.3	77s 1ms/step - loss: 1.8561 - accuracy: 0.2762	16
Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 3(relu) / 64(relu) x 10/ 8(softmax)	(10 epochs) 11mins 29s	14.889	71s 1ms/step - loss: 1.8701 - accuracy: 0.2664	17
Starting with compression layer	SMOTE oversampling (12.5% for all classes)	9 / 3(relu) / 64(relu) x 10/ 8(softmax)	(20 epochs) 23mins 1s	1.88	72s 1ms/step - loss: 1.8666 - accuracy: 0.2692	18
Compress, expand, Compress, expand	SMOTE oversampling (12.5% for all classes)	9 / 5(relu)/ 32(relu)/ 5(relu)/ 64(relu) x 10/ 8(softmax)	(10 epochs) 14mins 19s	0.86	76s 1ms/step - loss: 2.0796 - accuracy: 0.1246	19
Compress, expand, examined more	SMOTE oversampling (12.5% for all classes)	9/ 5(relu)/ 16(relu)/ 32(relu)/ 64(relu) x 8/ 8(softmax)	(10 epochs) 11mins 12s	1.841	61s 885us/step - loss: 1.8590 - accuracy: 0.2753	20
Compress, expand, examined more	SMOTE oversampling (12.5% for all classes)	9/ 5(relu)/ 16(relu)/ 32(relu)/ 64(relu) x 8/ 8(softmax)	(20 epochs) 21 mins 47s	2.65	62s 889us/step - loss: 1.8530 - accuracy: 0.2774	21

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Compress, expand, examined more	SMOTE oversampling (12.5% for all classes)	9/ 4(relu)/ 16(relu)/ 64(relu) x 10/ 8(softmax)	(10 epochs) 11 mins 22s	6.8	66s 952us/step - loss: 1.8592 - accuracy: 0.2743	22
Compress, expand, examined more	SMOTE oversampling (12.5% for all classes)	9/ 4(relu)/ 16(relu)/ 64(relu) x 20/ 8(softmax) adadelata	(10 epochs) 11min 2s	2.28	68s 986us/step - loss: 2.0345 - accuracy: 0.2057	23
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9/ 4(relu)/ 64(relu) x20/ 8(softmax)	(10 epochs) 16min 2s	12.991	92s 1ms/step - loss: 1.8897 - accuracy: 0.2589	24
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9/ 4(relu)/ 64(relu) x25/ 8(softmax)	(5 epochs - ES) 9mins 10s	0.86	110s 2ms/step - loss: 2.0791 - accuracy: 0.1245	25
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9 / 64(relu) x 10 / 8(softmax)	(100 epochs) 1h 41mins	4.43	60s 863us/step - loss: 1.7961 - accuracy: 0.2958	26
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9 / 3(relu) / 64(relu) x 10/ 8(softmax)	(40 Epochs) 43mins 2s	2.064	62s 887us/step - loss: 1.8078 - accuracy: 0.2919	27
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9 / 32(relu) x 20 / 8(softmax)	(20 epochs)			

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
With Learning Rate Reducer	SMOTE oversampling (12.5% for all classes)	9/ 4(relu)/ 64(relu) x10/ 8(softmax)	(20 epochs)			
Very Deep	SMOTE oversampling (12.5% for all classes)	9/ 9x100(relu)/ 8(softmax)	20mins 21s	Accuracy is 6.395822643445716 Precision is 50.21750229916524	19s 888us/step - loss: 1.7902	30
Very Wide	SMOTE oversampling (12.5% for all classes)	9/ 200x5(relu)/ 8(softmax)	39mins 28s	Accuracy is 4.43995049953216 Precision is 51.50045855573031	24s 1ms/step - loss: 1.8757	31
Dropout	SMOTE oversampling (12.5% for all classes)	9/ 100/ Dropout(0.04)/ 100x5(relu)/ 8(softmax)	44mins 36s	Accuracy is 4.461078748000362 Precision is 49.58407493617302	33s 2ms/step - loss: 1.7695	32
Dropout	SMOTE oversampling (12.5% for all classes)	9/ 60/ Dropout(0.04) / 60 x 9/ 8(softmax)	14mins 58s	Accuracy is 5.360538468503819 Precision is 48.61861674700927	21s 953us/step - loss: 1.8233	33

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Dropout	SMOTE oversampling (12.5% for all classes)	9/ 4/ Dropout(0.04) / 64 x 10 / 8(softmax)	21mins 56s	Accuracy is 5.200567444387431  Precision is 51.00153885181572	19s 888us/step - loss: 1.8004	34
Dropout	SMOTE oversampling (12.5% for all classes)	9/ 60/ Dropout(0.04)/ 60 x 10/ 8(softmax)	22mins 35s	Accuracy is 5.553711025927379  Precision is 50.05524685131765	22s 1ms/step - loss: 1.8142	35
Dropout	SMOTE oversampling (12.5% for all classes)	9/ 60/ Dropout(0.04)/ 60 x 10/ 8 (softmax)	37mins 49s	Accuracy is 4.470133711629591  Precision is 50.18079687029468 5	32s 1ms/step - loss: 1.7723	36
Biased SMOTE	SMOTE oversampling {0:30000, 1:30000, 2: 86784, 3:30000, 4:60 000, 5:50000, 6:7000 0, 7:30000}	9 / 64(relu) x 10 / 8(softmax)	(20 epochs) 21mins 38s	2.532	56s 813us/step - loss: 1.8266 - accuracy: 0.2897	28
Biased SMOTE	SMOTE oversampling {0:30000, 1:30000, 2: 86784, 3:30000, 4:60 000, 5:50000, 6:7000 0, 7:30000}  Batch size: 16 Min Lr: 0.00001	9 / 128(relu) x 10 / 8(softmax)	(10 epochs) 8mins 37s	1.741	52s 1ms/step - loss: 1.8542 - accuracy: 0.2776	29*

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 60/ Dropout(0.04) / 60 x 10 / 8(softmax)	37mins 35s	Accuracy is 14.94974495185777 7  Precision is 51.94294110512410 6	ETA: 0s - loss: 0.9852	37
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 128/ Dropout(0.04) / 128 x 10 / 8(softmax)	33mins 47s	Accuracy is 17.55455615586611  Precision is 52.79518211142295	37s 2ms/step - loss: 0.8830	38
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 128/ Dropout(0.04) / 128 x 50 / 8(softmax)	1h 8mins	Accuracy is 13.70619661344360 2  Precision is 52.44808483609095	66s 3ms/step - loss: 1.0002	39
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 50/ Dropout(0.04) / 50 x 20 / 8(softmax)	22mins 46s	Accuracy is 9.712957652953428  Precision is 49.48283532430035	30s 1ms/step - loss: 1.3629	46
Scaled Data	SMOTE oversampling (12.5% for all classes)	60/ Dropout(0.04)/ 60 x 7/ 8	31mins 20s	Accuracy is 14.96483655790649  Precision is 51.67591597247632	18s 830us/step - loss: 0.9785	47

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 9/ 8	9mins 27s	Accuracy is 9.405088889559627  Precision is 54.48842413841822 5	10s 447us/step - loss: 1.5892	48
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 60/ Dropout(0.04)/ 60 x 3/ 8	16mins 43s	Accuracy is 15.52624430291871 6  Precision is 53.77688440113668 4	13s 621us/step - loss: 1.0320	49
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 128/ Dropout(0.04)/ 128 x 5/ 8	33mins 47s	Accuracy is 21.78624249192599 3  Precision is 53.18843742945430 4	21s 972us/step - loss: 0.8364	50
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 256/ Dropout(0.04)/ 256 x 5/ 8	28mins 28s	Accuracy is 24.93736983489783  Precision is 52.92779936545246	29s 1ms/step - loss: 0.7685	51
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 350/ Dropout(0.04)/ 350 x 5/ 8	35mins 50s	Accuracy is 24.58724457456762 7  Precision is 52.7447630826335	38s 2ms/step - loss: 0.7860	52



Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/ 4/ Dropout(0.04)/ 200/ 256 x 3/ 8	(95 epochs) 34min 13s	Accuracy is 17.89260813135734 2  Precision is 51.42419630915802	21s 963us/step - loss: 0.9748	53
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/9/ Dropout(0.04)/ 60/256x7/8	52mins 16s	Accuracy is 22.02  Precision is 52.5  MCC is 0.0605	35s 2ms/step - loss: 0.8285	54
Scaled Data	SMOTE oversampling (12.5% for all classes)	9/60/ Dropout(0.04)/ 60/256x7/8	1h 1min 50s	Accuracy is 20.09  Precision is 52.63  MCC is 0.0683	35s 2ms/step - loss: 0.8647	55
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 64/ Dropout(0.04)/ 64 x 10/ 8(softmax)	34mins 51s	Accuracy is 15.68017868461561 7  Precision is 53.30163680335030 6	23s 1ms/step - loss: 0.9961	40
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 4/Dropout(0.04)/ 128x10/ 8(softmax)	45mins 21s	Accuracy is 13.39530952884006  Precision is 51.58812593108502 4	29s 1ms/step - loss: 0.9834	41

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 9/ Dropout(0.04)/ 18/ 64x8/ 8(softmax)	26mins 49s	Accuracy is 14.01406537683740 4  Precision is 53.51670142904107	22s 993us/step - loss: 1.0452	42
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 4/Dropout(0.04)/ 64x5/ 128x5/ 8(softmax)	39mins 51s	Accuracy is 14.57849144305937 2  Precision is 51.33739095739263 5	1ms/step - loss: 1.0533	43
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 64/Dropout(0.04)/ 128x20/ 8(softmax)	25mins 46s	Accuracy is 17.3161087802964  Precision is 53.25413836969604	741us/step - loss: 0.9596	44
MinMax Scaled	SMOTE oversampling (12.5% for all classes)	9/ 100/ Dropout(0.04)/ 100x15/ 8	1h 6mins	Accuracy is 13.56433551658567 4  Precision is 54.82148347040859 4	50s 2ms/step - loss: 1.0600	45
Adding L1 Regularizer	SMOTE oversampling (12.5% for all classes)	9/9(L1 0.01)/ Dropout(0.04)/ 60/256x7/8	45mins 13s	Accuracy 20.358 Precision 52.55 MCC test 0.0647 MCC train 0.145	42s 2ms/step - loss: 0.9038	56

Description	Pre-Processing	Layers	Time	Score %	Final Verbose	Matrix Id
Adding L1 Regularizer	SMOTE oversampling (12.5% for all classes)	9/ 256(L1 0.01)/ Dropout(0.04)/ 256 x 5/ 8	46mins 22s	Accuracy is 23.41 Precision is 52.63  MCC test: 0.0657 MCC train: 0.205	31s 1ms/step - loss: 0.8154	57
Adding L1 Regularizer	SMOTE oversampling (12.5% for all classes)	9/9(L1 0.01)/ Dropout(0.04)/ 60(L1 0.01)/256x7/8	48min 7s	Accuracy is 18.436  Precision is 53.362  MCC test: 0.063  MCC train: 0.125		
Adding L2 Regularizer	SMOTE oversampling (12.5% for all classes)	9/ 256(L2 0.01)/ Dropout(0.04)/ 256 x 5/ 8	52min 41s	Accuracy is 23.44  Precision is 52.64  MCC test: 0.0691 MCC train: 0.2102	29s 1ms/step - loss: 0.8222	58
Adding L2 Regularizer	SMOTE oversampling (12.5% for all classes)	9/9(L2 0.01)/ Dropout(0.04)/ 60(L2 0.01)/256x7/8	52min 6s	Accuracy is 20.0386  Precision is 52.680  MCC test: 0.0609  MCC train: 0.145	50s 2ms/step - loss: 0.8929	60
Adding L2 Regularizer	SMOTE oversampling (12.5% for all classes)	9/ 350(L2 0.03)/ Dropout(0.04)/ 350 x 3/ 8	1h 15 min 26s	Accuracy is 25.843  Precision is 53.283  MCC test: 0.0730 MCC train: 0.243	29s 1ms/step - loss: 0.7934	61

