IS655 Lab Week#13B Exploring a NN model 00000034000-WillibrordusBayu

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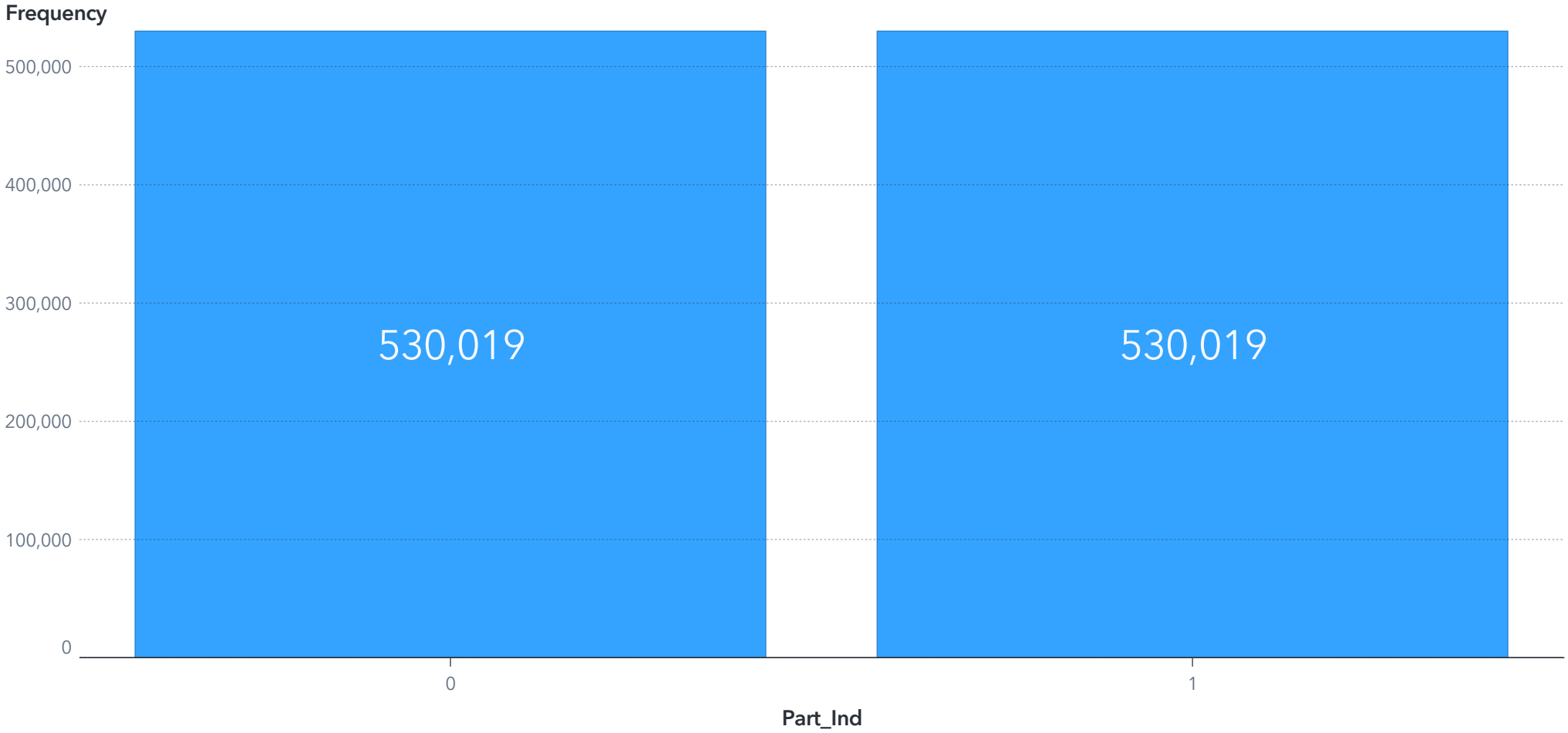
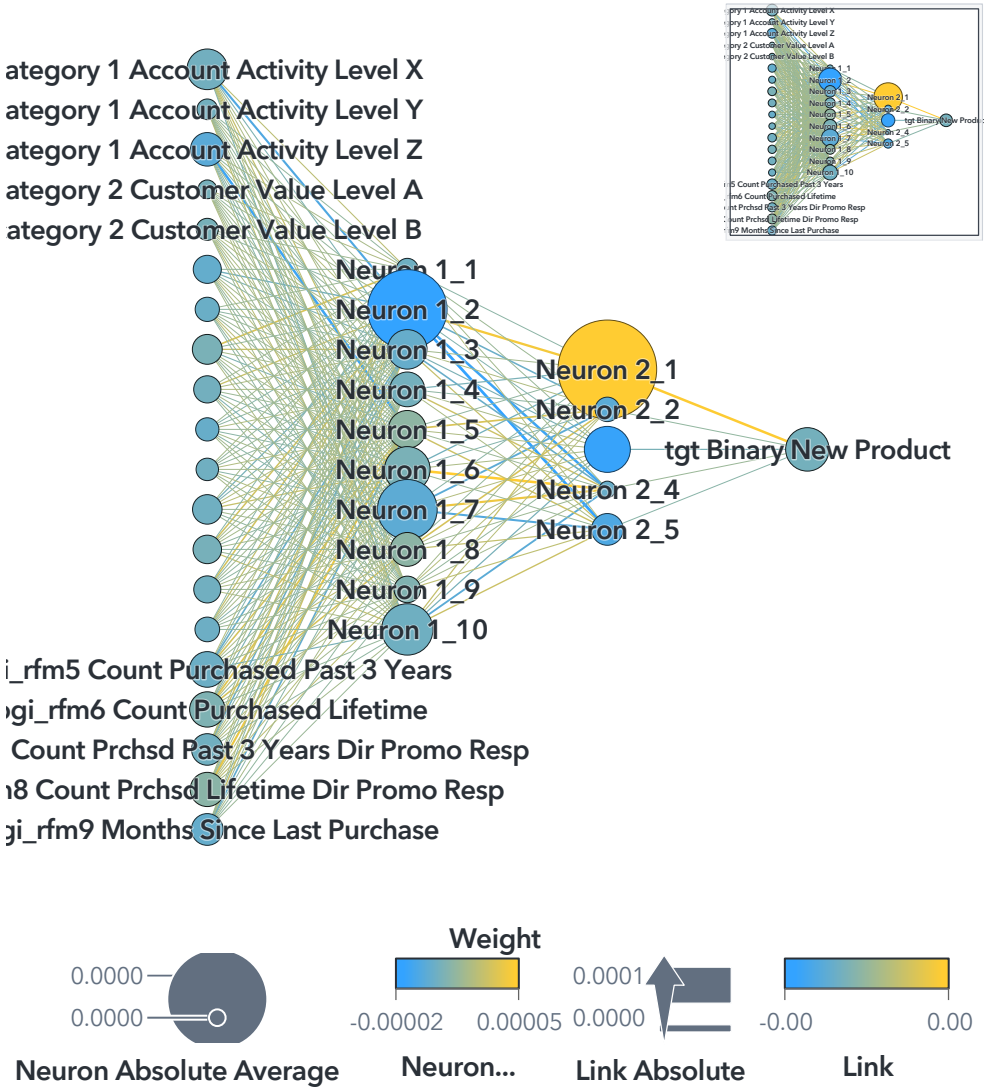
The Number of partitions option indirectly specifier whether a test partion is included. When you select 3 for this option, a training partition, validation partition, and testing partition are created only a training partition and validation partition are created. Ate least 1% of the data must be used of data. Therefore, the sum of the training partition and testing partition must be strictly less than 1



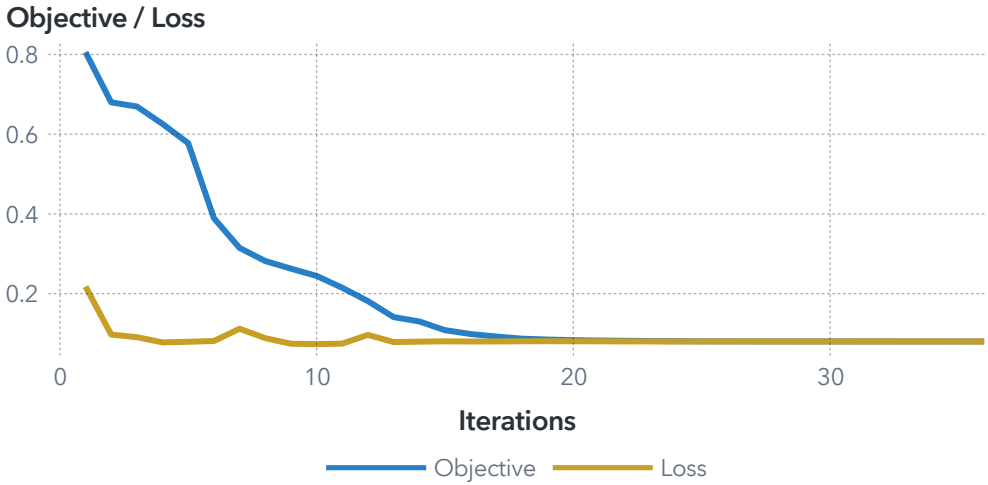
Neural Network Model

Neural Network **tgt Binary New Product** Observed Average **0.0244** Observations Used **1,060,038**

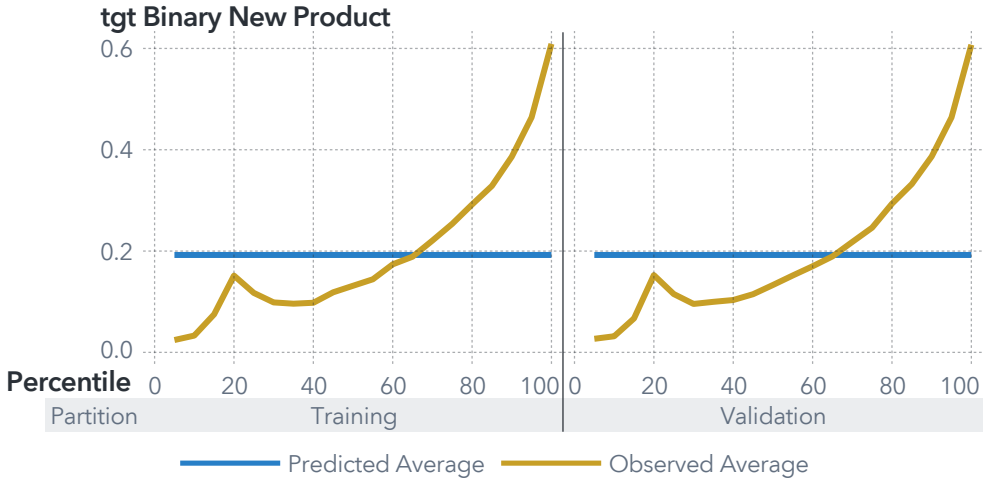
Network



Iteration Plot



Assessment



Bar - Part_Ind 1 Supplement 1

Part_Ind ▲	Frequency
0	530,019
1	530,019

Description	Value
Model	Neural Net
Number of Observations Used for Training	530,020
Number of Observations Read for Training	530020
Target/Response Variable	tgt Binary New Product
Number of Neurons	36
Number of Input Neurons	20
Number of Output Neurons	1
Number of Hidden Neurons	15
Number of Hidden Layers	2
Number of Weight Parameters	255
Number of Bias Parameters	16
Architecture	MLP
Number of Neural Nets	1
Objective Value	0.079909
Mean Squared Error for Validation	0.1598

Iterations	Objective	Loss	Validation Error
1	0.8057	0.2176	0.4360
2	0.6799	0.0972	0.1943
3	0.6695	0.0907	0.1813
4	0.6258	0.0777	0.1554
5	0.5774	0.0792	0.1584
6	0.3892	0.0811	0.1622
7	0.3146	0.1119	0.2239
8	0.2818	0.0883	0.1766
9	0.2626	0.0743	0.1487
10	0.2444	0.0733	0.1467
11	0.2147	0.0746	0.1492
12	0.1811	0.0964	0.1928
13	0.1411	0.0785	0.1570
14	0.1302	0.0795	0.1590
15	0.1083	0.0803	0.1606
16	0.0986	0.0799	0.1597
17	0.0923	0.0800	0.1599
18	0.0870	0.0805	0.1610
19	0.0847	0.0807	0.1613
20	0.0832	0.0804	0.1609
21	0.0823	0.0803	0.1607
22	0.0817	0.0801	0.1603
23	0.0811	0.0800	0.1601
24	0.0806	0.0800	0.1600
25	0.0804	0.0800	0.1600
26	0.0803	0.0800	0.1600
27	0.0802	0.0800	0.1600
28	0.0801	0.0800	0.1599
29	0.0801	0.0799	0.1599
30	0.0800	0.0799	0.1599
31	0.0800	0.0799	0.1598
32	0.0800	0.0799	0.1598
33	0.0800	0.0799	0.1598
34	0.0799	0.0799	0.1598
35	0.0799	0.0799	0.1598
36	0.0799	0.0799	0.1598

Reason

The optimization achieved the desired objective value.

Neural network - tgt Binary New Product 1 Supplement 4

Percentile	Training Observations	Training Predicted Average	Training Observed Average	Validation Observations	Validation Predicted Average	Validation Observed Average
5	22049	0.192261921	0.024354846	25182	0.192261921	0.0268048606
10	31634	0.192261921	0.0331289119	26022	0.192261921	0.0317808009
15	26687	0.192261921	0.0750927418	28402	0.192261921	0.0670023238
20	26100	0.192261921	0.151532567	26085	0.192261921	0.1524631014
25	23150	0.192261921	0.1173650108	29259	0.192261921	0.1151782358
30	34209	0.192261921	0.0986290158	26806	0.192261921	0.0956129225
35	23013	0.192261921	0.0960761309	22947	0.192261921	0.0997516015
40	26301	0.192261921	0.097943044	26035	0.192261921	0.1033608604
45	29816	0.192261921	0.1185605044	29840	0.192261921	0.1148458445
50	15780	0.192261921	0.131495564	31554	0.192261921	0.133010078
55	31846	0.192261921	0.1442567355	16596	0.192261921	0.1517835623
60	32297	0.192261921	0.1737313063	32485	0.192261921	0.169955364
65	16579	0.192261921	0.1888533687	17056	0.192261921	0.189434803
70	31618	0.192261921	0.2206654437	31988	0.192261921	0.2179567338
75	30204	0.192261921	0.2537412263	30079	0.192261921	0.2462182918
80	28331	0.192261921	0.2919063923	28671	0.192261921	0.2934672666
85	24838	0.192261921	0.3286093888	24980	0.192261921	0.3322658127
90	20441	0.192261921	0.3861846289	20617	0.192261921	0.38662269
95	28653	0.192261921	0.4640002792	28948	0.192261921	0.4638316982
100	26474	0.192261921	0.609088162	26466	0.192261921	0.6073452732

Neural network - tgt Binary New Product 1 Supplement 5

Partition	ASE	Observed Average	SSE	Observations Used	Unused
Training	0.1598	0.0244	84,681.6829	530,020	0
Validation	0.1598	0.0268	84,680.9935	530,018	0