Supporting Information

An artificial neural network to predict reactivity ratios in radical copolymerization

Kiarash Farajzadehahary, Xabier Telleria-Allika, José M. Asua and Nicholas Ballard*

The neural network architecture and hyperparameters were selected on the basis of the results of a search of the hyperparameter space using k-fold cross validation (k=5). In **Table S1** the results of varying the network architecture are shown. It can be seen that with the exception of relatively small networks (few layers with small number of neurons per layer) and deep networks (networks with 3 or more layers) the performance was relatively similar (**Table S1**). With respect to the other hyperparameters of the model, the optimizer and batch size had virtually no influence on the final result but significant improvement was observed when using ReLU activation functions as compared to sigmoid function (**Table S2**). Variation of the learning rate showed an optimum for value of 0.001 (**Table S3**) and therefore this was the value used for the results in the main paper. A comprehensive grid search with simultaneous variation of multiple parameters (**Table S4**) determined the optimum architecture to be a network with two hidden layers of 80 and 40 neurons, ReLU activation functions, batchsize of 16 with the Adam optimizer.

Table S1 Results of parameter search for different network architectures. The numbers in brackets describe the number of neurons in each layer of the network. Batch size = 16. ReLU activation. Epochs = 40. Optimizer =Adam. Learning rate = 0.001. Note that the error corresponds to the error in the natural logarithm (model output).

Rank	Layers	neg MAE	Rank	Layers	neg MAE
1	[100, 50]	-0.627	22	[32, 16, 32, 16]	-0.659
2	[100, 50, 20]	-0.627	23	[20, 50, 100]	-0.659
3	[100, 100]	-0.628	24	[20, 30]	-0.660
4	[80, 40]	-0.629	25	[16, 32, 64]	-0.663
5	[128]	-0.629	26	[20, 40]	-0.668
6	[64, 32]	-0.630	27	[20, 20, 20]	-0.669
7	[100, 50, 25, 10]	-0.630	28	[20, 20]	-0.672
8	[50, 50]	-0.635	29	[20, 10, 10, 20]	-0.675

Rank	Architecture	neg MAE	Rank	Architecture	neg MAE
9	[64, 64]	-0.636	30	[20, 10]	-0.676
10	[50, 25, 10]	-0.637	31	[16]	-0.677
11	[32, 64]	-0.641	32	[10, 10]	-0.681
12	[40, 20]	-0.642	33	[10, 25, 50]	-0.683
13	[50, 100]	-0.642	34	[10, 20, 30]	-0.685
14	[40, 80]	-0.642	35	[64, 32, 16, 8, 4]	-0.688
15	[64, 32, 16]	-0.642	36	[10, 20]	-0.697
16	[32, 64, 64, 32]	-0.645	37	[10, 10, 10]	-0.704
17	[64]	-0.647	38	[10, 5]	-0.705
18	[30, 20]	-0.648	39	[20, 10, 5]	-0.705
19	[32, 32]	-0.649	40	[5, 10, 20]	-0.711
20	[30, 20, 10]	-0.652	41	[5, 5]	-0.720
21	[32]	-0.653	42	[5, 10]	-0.727

Table S2 Results of parameter search for varying optimizer, batch size and activation function. Model architecture [80, 40]. Epochs = 50. Learning rate = 0.001. Note that the error corresponds to the error in the natural logarithm (model output).

Rank	Optimizer	Activation	Batch size	neg MAE
1	adam	relu	32	-0.634
2	adam	relu	16	-0.637
3	rmsprop	relu	16	-0.643
4	rmsprop	relu	32	-0.646
5	adam	sigmoid	16	-0.676
6	adam	sigmoid	32	-0.717
7	rmsprop	sigmoid	32	-0.721
8	rmsprop	sigmoid	16	-0.721

Table S3 Results of parameter search of learning rate. Model architecture [80, 40]. Epochs = 50. Batch size = 16. ReLU activation. Optimizer =Adam. Note that the error corresponds to the error in the natural logarithm (model output).

| Rank	Learning rate	neg MAE
1	0.001	-0.635
2	0.0005	-0.648
3	0.005	-0.653
4	0.0001	-0.654
5	0.01	-0.660
6	0.05	-0.826
7	0.1	-1.055
8	0.5	-1.067
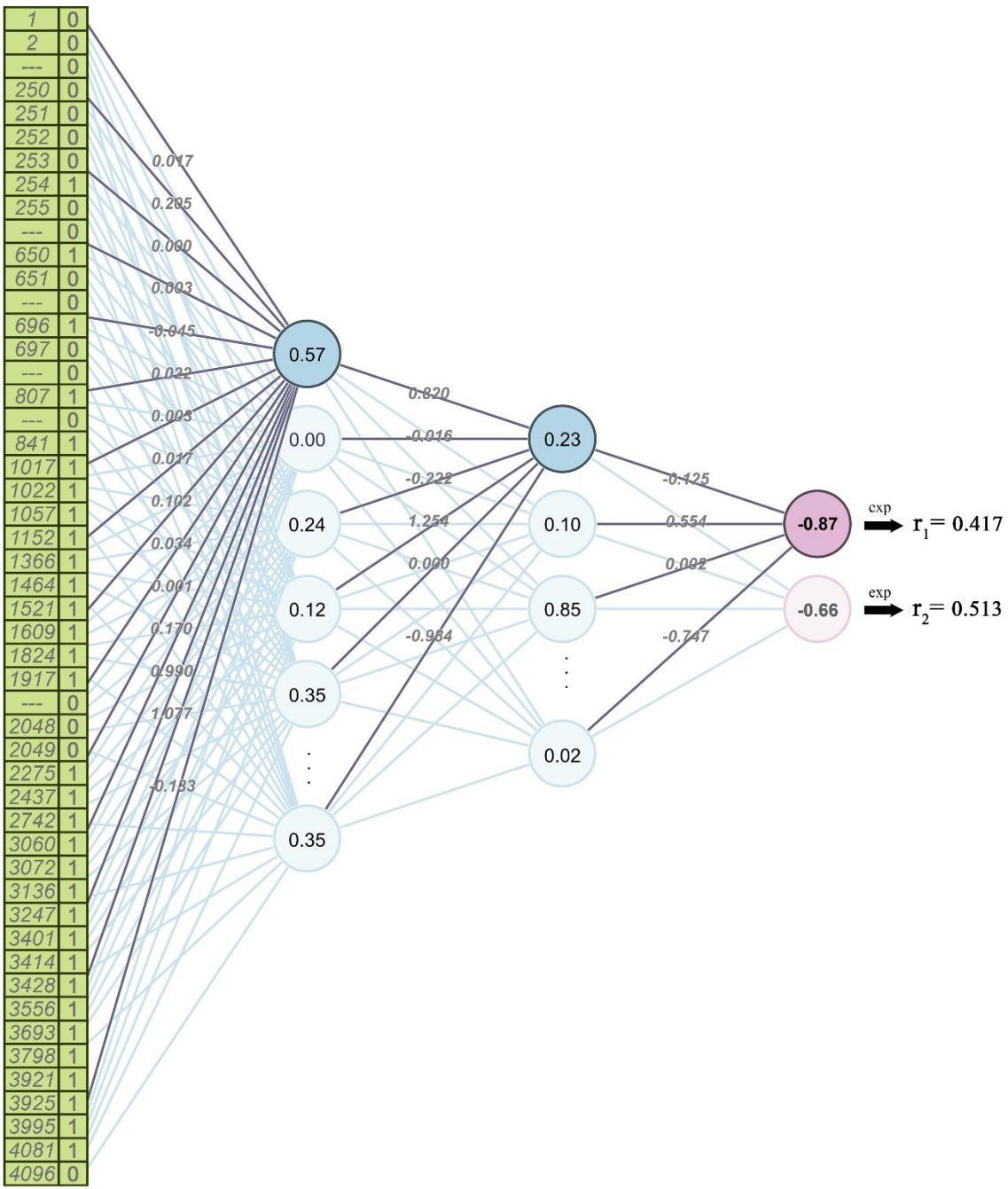
Figure S1. A computed example for the case of determining the reactivity ratios for methyl methacrylate and styrene. The input (values in yellow) corresponds to the Morgan fingerprint of the two monomers (the first 2048 bits correspond to substructures in MMA and the second 2048 correspond to styrene). The Morgan fingerprint of each monomer is a vector of zeros and ones where a value of 1 shows the presence of a certain substructure. **Figure 1** in the main manuscript shows which bits correspond to which substructures. The neural network is computed as shown in **Figure 3** to calculate values in the hidden layers. The final output of the neural network is the natural logarithm of the estimated value of r_1 and r_2.
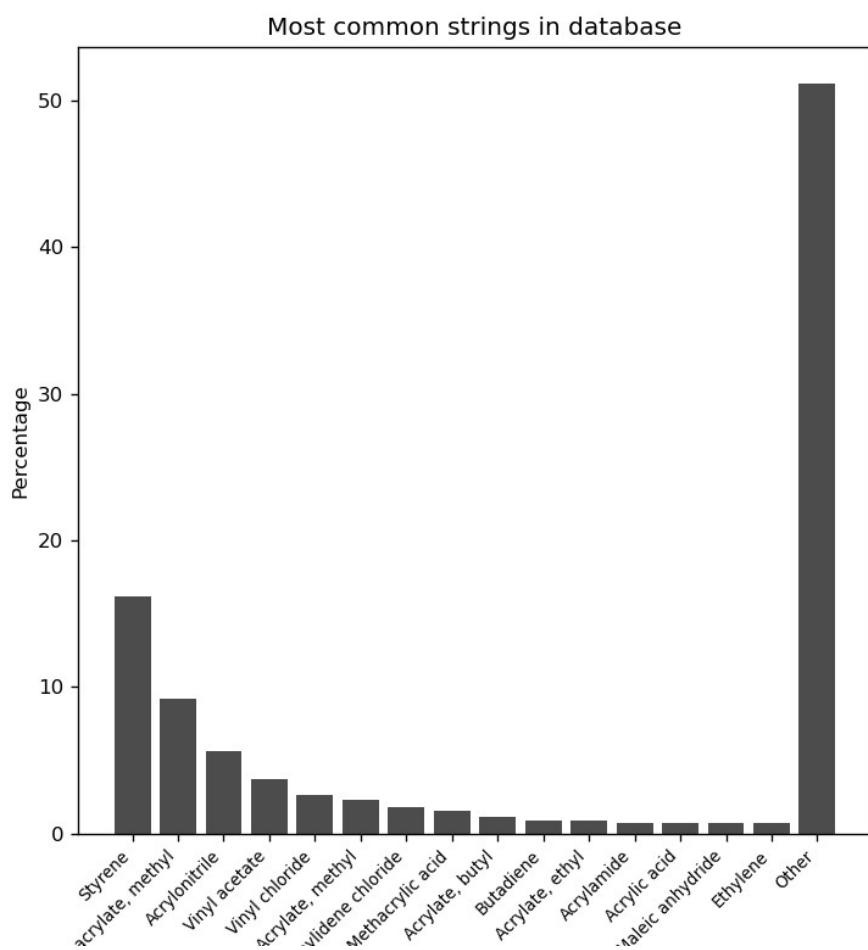
Figure S2. Distribution of most common monomers in *Polymer Handbook*.
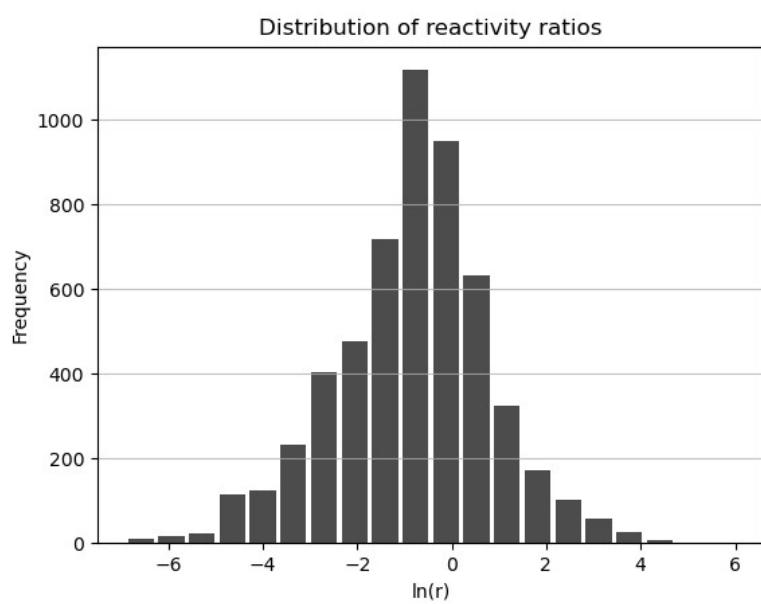
Figure S3. Distribution of reactivity ratios for entries in the *Polymer Handbook*.
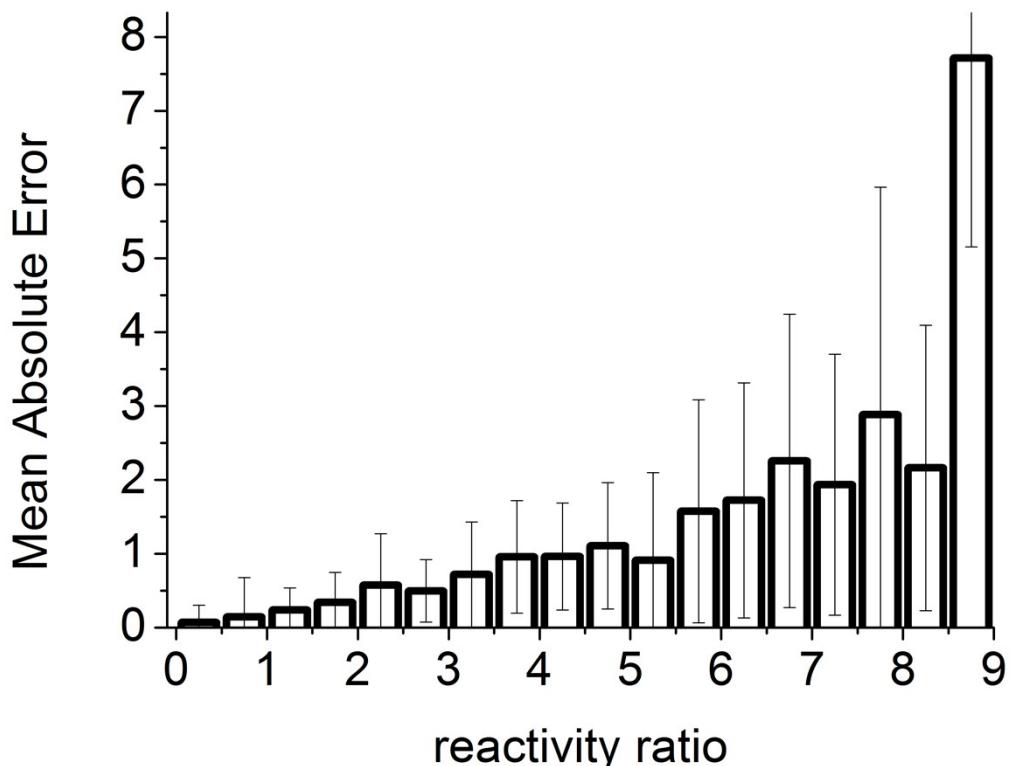
Figure S4. Mean absolute error of predictions of r_1 and r_2 relative to experimental value for different experimental values of the reactivity ratio. The error bars show the standard deviation of the error.
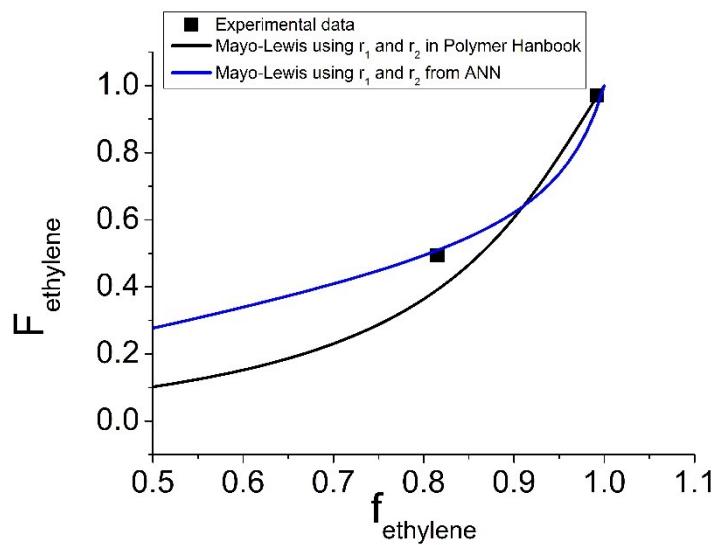
Figure S5. Mayo-Lewis plot showing the experimental data of Brown and Ham (*J Polym Sci A* **1964**, 2, 3623–3632) for the copolymerization of ethylene with diethyl maleate. The lines represent the values from the Mayo-Lewis equation using r_1 and r_2 values from the *Polymer Handbook* (black line) or from the predictions of the artificial neural network (blue line).
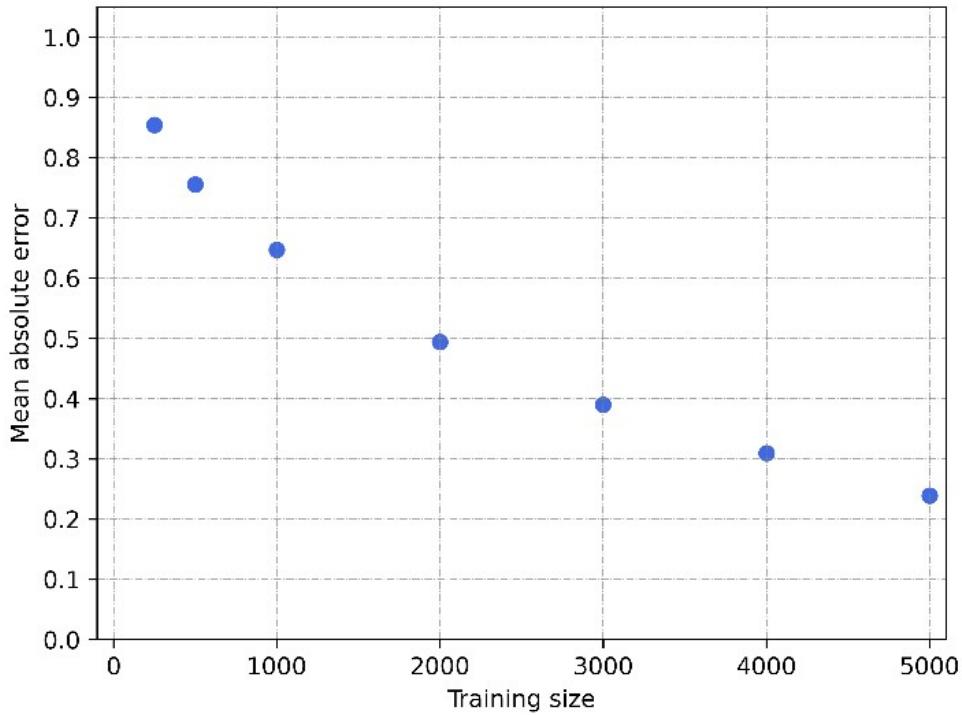
Figure S6. Mean absolute error of the entire dataset as a function of the size of the training dataset.
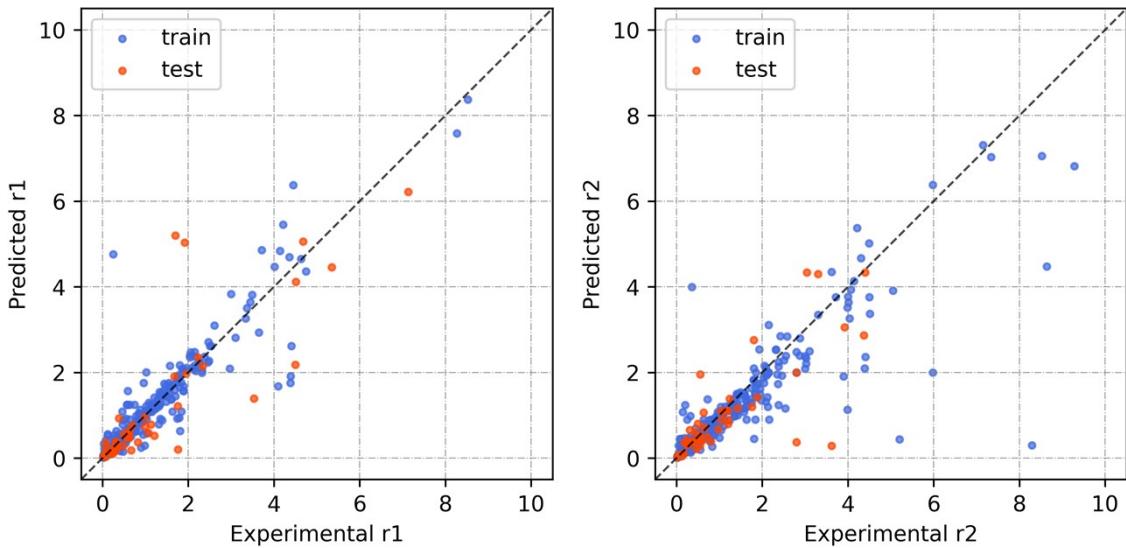
Figure S7. Parity plots showing the predicted and experimentally determined reactivity ratios for 450 entries of the training dataset and 50 entries of the test dataset. The dataset was composed only of those entries for which experimental reactivity ratios were calculated by the Kelen-Tudos method.
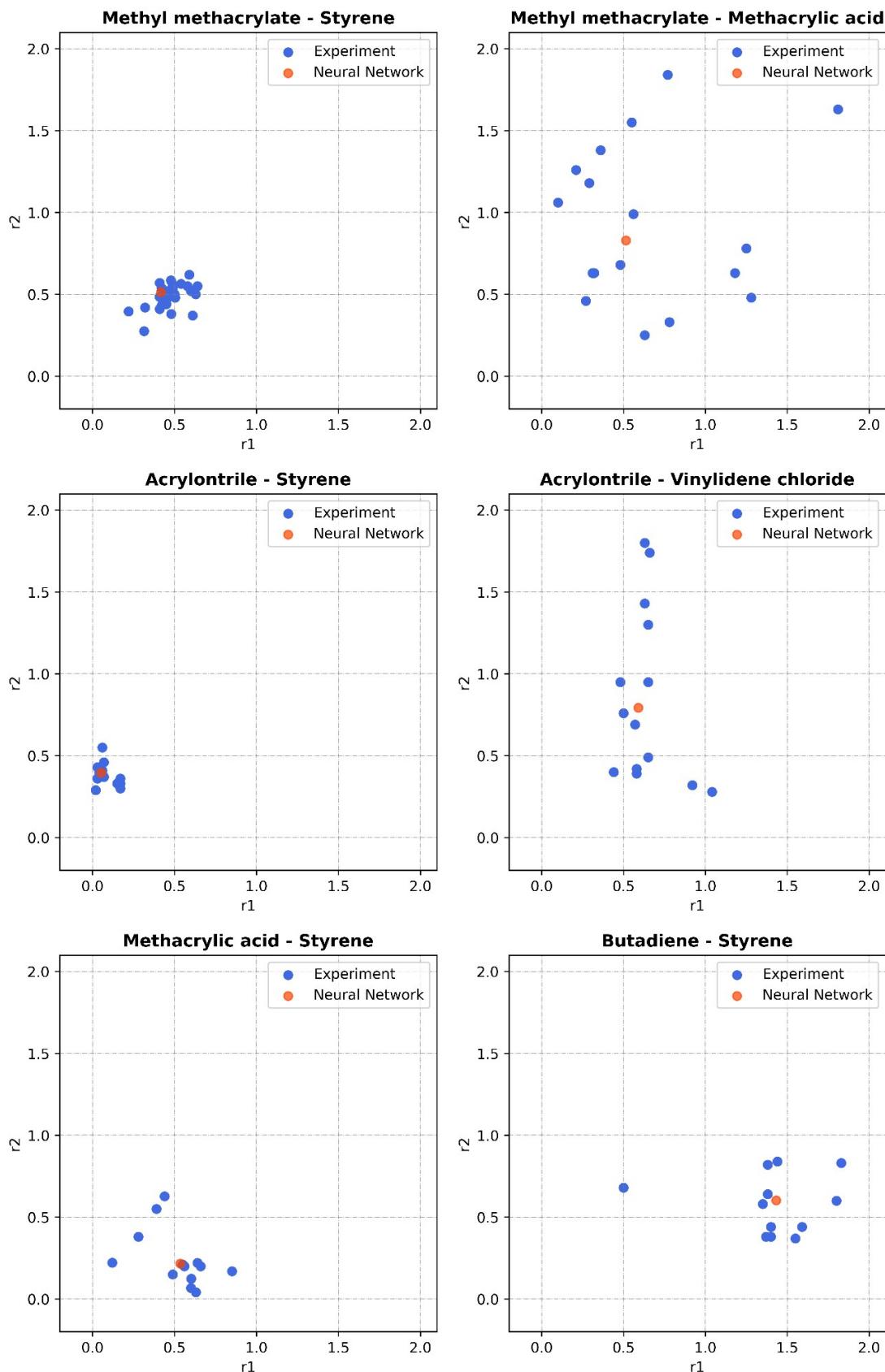
Figure S8. Comparison of results of neural network with experimentally determined reactivity ratios for the most common entries in the *Polymer Handbook*. Note that the value predicted by the neural network is taken from the average of two predictions with the monomer order reversed.

Table S4 Results of grid search of hyperparameters. Note that the error corresponds to the error in the natural logarithm (model output)

| param_layers	Batch size	Optimizer	Activations	Test MAE avg	Test MAE std	MAE rank	Test avg MSE	Test MSE std	MSE rank	Test avg r-sqr	Test r-sq std	r-sq rank	fit time avg	fit time std	ranks avg	overal rank
[80, 40]	16	adam	relu	0.5715	0.01142	4	0.8491	0.02058	2	0.6085	0.02371	2	13.3	0.16	2.67	1
[100, 100]	8	adam	relu	0.5714	0.01171	3	0.8509	0.02847	6	0.6068	0.02972	6	27.5	0.64	5	2
[100, 60, 40]	8	Nadam	relu	0.5697	0.01461	1	0.8513	0.02969	7	0.6063	0.0305	8	31.44	0.37	5.33	3
[100]	16	adam	relu	0.5734	0.01637	14	0.848	0.03321	1	0.6092	0.03223	1	13.94	0.22	5.33	4
[100, 100]	16	Nadam	relu	0.5712	0.01241	2	0.8517	0.02976	9	0.6059	0.03051	10	16.87	0.12	7	5
[100, 100]	8	Nadam	relu	0.5727	0.01209	9	0.8519	0.02633	10	0.6059	0.02768	9	30.93	0.27	9.33	6
[80, 80, 40, 40]	8	Nadam	relu	0.5718	0.01374	5	0.8526	0.03182	12	0.6052	0.02928	12	29.92	0.45	9.67	7
[100, 100]	32	Nadam	relu	0.5734	0.0121	13	0.8525	0.02699	11	0.6055	0.02405	11	10.22	0.41	11.67	8
[100]	8	Nadam	relu	0.5754	0.0116	31	0.8505	0.02878	3	0.6076	0.02545	3	29.08	0.39	12.33	9
[100, 100]	32	adam	relu	0.5726	0.01108	8	0.8544	0.02804	17	0.6036	0.02875	17	8.97	0.17	14	10
[100, 60, 40]	16	adam	relu	0.5738	0.01098	17	0.8529	0.02917	13	0.6049	0.02921	13	14.92	0.13	14.33	11
[80, 80, 80, 80]	16	adam	relu	0.5723	0.01369	6	0.855	0.03019	21	0.6027	0.03119	20	14.21	0.2	15.67	12
[100, 80, 60, 40, 20]	16	Nadam	relu	0.5724	0.01403	7	0.8549	0.03281	20	0.6027	0.03612	21	18.34	0.13	16	13
[80, 40]	8	Nadam	relu	0.5739	0.01551	18	0.8536	0.03151	15	0.6039	0.03192	15	27.89	0.31	16	14
[100]	32	Nadam	relu	0.5756	0.00766	34	0.8515	0.02477	8	0.6063	0.02674	7	9.3	0.32	16.33	15
[100, 100]	16	adam	relu	0.5744	0.01575	20	0.8546	0.02858	18	0.6031	0.03187	19	14.82	0.28	19	16
[100, 60]	32	Nadam	relu	0.5732	0.01634	11	0.856	0.03319	23	0.6019	0.03156	24	9.8	0.17	19.33	17
[100]	16	Nadam	relu	0.578	0.01482	51	0.8506	0.02887	4	0.6073	0.02769	4	15.58	0.22	19.67	18
[80, 80]	16	Nadam	relu	0.5731	0.01307	10	0.8564	0.02891	26	0.6016	0.03014	26	15.35	0.39	20.67	19
[80, 80, 80, 80]	8	Nadam	relu	0.5735	0.01429	15	0.8563	0.03109	24	0.602	0.02714	23	30.51	0.13	20.67	20
[60, 60]	16	adam	relu	0.5757	0.0156	36	0.8536	0.03104	14	0.6043	0.02848	14	12.53	0.2	21.33	21
[100, 60]	16	Nadam	relu	0.5746	0.01174	21	0.8559	0.02615	22	0.602	0.02829	22	16.36	0.28	21.67	22
[80]	8	adam	relu	0.5789	0.01454	62	0.8506	0.03034	5	0.6072	0.02822	5	23.85	0.19	24	23
[80, 80]	32	Nadam	relu	0.5733	0.01059	12	0.8575	0.02366	31	0.6008	0.02639	30	8.57	0.15	24.33	24
[80, 80]	16	adam	relu	0.5748	0.01632	22	0.8563	0.0318	25	0.6012	0.03619	28	13.25	0.11	25	25
[100]	8	adam	relu	0.5782	0.01431	54	0.8538	0.03145	16	0.6038	0.0306	16	26.07	0.24	28.67	26

Architecture	Batch	Optimizer	Activation													
[100, 60, 40]	16	Nadam	relu	0.5754	0.01065	30	0.8572	0.02741	29	0.6009	0.02989	29	17.26	0.26	29.33	27
[80, 40]	32	adam	relu	0.574	0.01304	19	0.8578	0.02799	36	0.6002	0.02971	35	7.61	0.09	30	28
[100, 60]	8	Nadam	relu	0.5757	0.01748	35	0.8567	0.03347	28	0.6013	0.03389	27	30.9	0.67	30	29
[100]	32	adam	relu	0.5788	0.01419	59	0.8546	0.03002	19	0.6032	0.03075	18	8.35	0.15	32	30
[100, 80, 60, 40, 20]	32	Nadam	relu	0.5752	0.01227	27	0.8577	0.02853	34	0.6001	0.03035	36	10.83	0.14	32.33	31
[100, 60, 40]	32	Nadam	relu	0.5753	0.01241	29	0.8577	0.02767	35	0.6003	0.02865	34	10.31	0.16	32.67	32
[100, 60]	32	adam	relu	0.5775	0.01214	47	0.8565	0.02542	27	0.6019	0.02574	25	8.76	0.18	33	33
[100, 60, 40]	8	adam	relu	0.575	0.01365	24	0.8584	0.02692	38	0.5996	0.03038	39	28.06	0.72	33.67	34
[80, 80]	8	Nadam	relu	0.5773	0.01262	43	0.8574	0.02803	30	0.6008	0.02882	31	28.19	0.51	34.67	35
[100, 60, 40]	32	adam	relu	0.5737	0.01478	16	0.8591	0.03188	46	0.5989	0.0336	44	9.05	0.16	35.33	36
[100, 60]	16	adam	relu	0.5774	0.01169	45	0.8577	0.02533	32	0.6007	0.02542	32	14.59	0.2	36.33	37
[80, 40, 60]	32	Nadam	relu	0.575	0.01642	25	0.8587	0.03245	42	0.5991	0.03472	43	8.9	0.06	36.67	38
[80, 40, 60]	8	adam	relu	0.5756	0.01647	33	0.859	0.03308	43	0.5989	0.03079	45	25.63	0.24	40.33	39
[80, 80, 80, 80]	16	Nadam	relu	0.5752	0.0126	28	0.8594	0.02643	49	0.5987	0.02947	48	16.7	0.34	41.67	40
[60, 60]	16	Nadam	relu	0.5769	0.01783	39	0.859	0.03278	44	0.5989	0.03229	46	14.37	0.08	43	41
[80]	16	Nadam	relu	0.5794	0.01208	66	0.8577	0.02606	33	0.6003	0.02789	33	14.32	0.22	44	42
[100, 60]	8	adam	relu	0.5774	0.01074	44	0.8591	0.02221	47	0.5988	0.02991	47	27.08	0.71	46	43
[80, 40]	8	adam	relu	0.5786	0.01224	57	0.8586	0.02691	40	0.5992	0.03173	42	24.83	0.55	46.33	44
[80, 80, 40, 40]	16	Nadam	relu	0.5749	0.01276	23	0.8611	0.0285	59	0.5972	0.02797	59	16.23	0.21	47	45
[80, 80, 80, 80]	8	adam	relu	0.5752	0.01181	26	0.8611	0.02698	58	0.5973	0.02823	58	26.73	0.42	47.33	46
[80, 80]	32	adam	relu	0.5772	0.01494	42	0.8598	0.03097	51	0.5986	0.02925	49	7.59	0.2	47.33	47
[80, 60, 80, 40]	8	Nadam	relu	0.577	0.01353	40	0.86	0.0301	52	0.5981	0.03284	52	30.52	0.68	48	48
[80, 80]	8	adam	relu	0.5775	0.01242	46	0.8595	0.03148	50	0.5985	0.03331	50	24.61	0.27	48.67	49
[80]	16	adam	relu	0.5804	0.01425	74	0.8581	0.02965	37	0.6001	0.02855	37	12.71	0.16	49.33	50
[100, 80, 60, 40, 20]	8	adam	relu	0.5755	0.01156	32	0.8615	0.02612	61	0.5969	0.02805	61	29.3	0.44	51.33	51
[80]	8	Nadam	relu	0.5811	0.00956	80	0.8584	0.02454	39	0.6001	0.02747	38	27.04	0.27	52.33	52
[80, 80, 40, 40]	16	adam	relu	0.578	0.01549	52	0.8601	0.02844	53	0.5981	0.03134	53	13.88	0.11	52.67	53
[80, 60, 80, 40]	16	adam	relu	0.5779	0.01087	50	0.8605	0.02542	56	0.5979	0.026	55	14.11	0.15	53.67	54
[80, 60, 80, 40]	32	Nadam	relu	0.576	0.01142	38	0.8619	0.02706	63	0.5965	0.02897	63	9.47	0.33	54.67	55
[60]	8	Nadam	relu	0.5832	0.01435	91	0.859	0.03027	45	0.5992	0.03194	40	25.51	0.17	58.67	56
[80, 40, 60]	8	Nadam	relu	0.5797	0.01446	68	0.8604	0.03273	55	0.5976	0.03396	56	29.31	0.36	59.67	57

[80, 40]	32	Nadam	relu	0.5801	0.01203	71	0.8602	0.02854	54	0.598	0.03062	54	8.42	0.13	59.67	58
[80, 40]	16	Nadam	relu	0.5788	0.01369	58	0.8614	0.0299	60	0.5969	0.0309	62	15.37	0.35	60	59
[60, 60]	32	Nadam	relu	0.5814	0.01705	81	0.8593	0.02866	48	0.5985	0.0308	51	8.12	0.11	60	60
[60]	8	adam	relu	0.584	0.01579	98	0.8587	0.03246	41	0.5992	0.03544	41	23.07	0.33	60	61
[80, 80, 40, 40]	8	adam	relu	0.5757	0.01953	37	0.863	0.03458	74	0.5951	0.0359	75	26.05	0.16	62	62
[100, 80, 60, 40, 20]	16	adam	relu	0.5783	0.00928	56	0.8621	0.0248	65	0.5963	0.02863	66	15.69	0.11	62.33	63
[80, 60, 80, 40]	8	adam	relu	0.5771	0.01012	41	0.8638	0.02372	79	0.5949	0.02445	78	26.01	0.1	66	64
[40, 80]	8	Nadam	relu	0.5821	0.01425	84	0.861	0.02705	57	0.5974	0.02763	57	23.03	0.43	66	65
[80, 60, 80, 40]	16	Nadam	relu	0.5777	0.01458	48	0.8633	0.03322	76	0.5951	0.03435	76	16.31	0.24	66.67	66
[100, 80, 60, 40, 20]	8	Nadam	relu	0.5781	0.01449	53	0.863	0.03303	73	0.5953	0.03394	74	33.44	0.5	66.67	67
[80, 40, 60]	32	adam	relu	0.579	0.01317	63	0.8624	0.03202	69	0.5958	0.0329	69	7.88	0.22	67	68
[60, 40, 20]	8	adam	relu	0.5789	0.01175	61	0.8627	0.02286	70	0.5956	0.02679	71	24.82	0.14	67.33	69
[80, 80, 40, 40]	32	Nadam	relu	0.5782	0.01479	55	0.8631	0.02693	75	0.5953	0.02744	73	9.29	0.14	67.67	70
[60, 20]	16	Nadam	relu	0.5807	0.01236	76	0.862	0.02456	64	0.5965	0.02609	64	14.16	0.11	68	71
[80, 80, 80, 80]	32	Nadam	relu	0.5778	0.01901	49	0.8636	0.03884	78	0.5946	0.0373	79	9.36	0.15	68.67	72
[60, 20]	16	adam	relu	0.5831	0.01095	89	0.8616	0.02309	62	0.5971	0.02206	60	12.55	0.13	70.33	73
[60, 40, 20]	16	adam	relu	0.5819	0.01885	83	0.8622	0.03624	67	0.5959	0.03733	68	12.98	0.09	72.67	74
[60, 60]	8	Nadam	relu	0.5811	0.01521	78	0.8629	0.02862	71	0.5957	0.02836	70	27.17	0.27	73	75
[80, 40, 60]	16	Nadam	relu	0.5791	0.01203	64	0.8641	0.02979	80	0.5942	0.0317	80	15.83	0.22	74.67	76
[60, 40, 20]	8	Nadam	relu	0.5793	0.01221	65	0.8646	0.02904	81	0.5939	0.02994	81	27.92	0.22	75.67	77
[80, 60, 80, 40]	32	adam	relu	0.5788	0.01452	60	0.8654	0.0283	86	0.5931	0.03062	86	8.05	0.16	77.33	78
[60]	16	adam	relu	0.5851	0.01589	107	0.8622	0.03284	66	0.5964	0.03066	65	11.95	0.2	79.33	79
[60, 40, 20]	16	Nadam	relu	0.5795	0.01256	67	0.8656	0.03108	87	0.5929	0.03441	87	14.84	0.13	80.33	80
[80]	32	Nadam	relu	0.5852	0.01913	108	0.8623	0.03918	68	0.596	0.03684	67	7.95	0.18	81	81
[80, 80, 40, 40]	32	adam	relu	0.5811	0.01678	79	0.8648	0.03002	84	0.5932	0.03626	85	7.97	0.16	82.67	82
[80]	32	adam	relu	0.5835	0.01707	95	0.8635	0.03363	77	0.595	0.03316	77	7.14	0.11	83	83
[60, 60]	8	adam	relu	0.5803	0.01237	72	0.8659	0.02997	88	0.5927	0.03086	90	24.2	0.2	83.33	84
[60, 20]	8	Nadam	relu	0.5828	0.01578	88	0.8647	0.02908	83	0.5935	0.02897	83	26.7	0.34	84.67	85
[100]	8	Nadam	tanh	0.5803	0.01916	73	0.8663	0.0408	92	0.5923	0.03622	91	28.91	0.53	85.33	86
[80, 40, 60]	16	adam	relu	0.5806	0.01129	75	0.866	0.02968	90	0.5922	0.03418	92	13.59	0.15	85.67	87
[40, 40]	16	Nadam	relu	0.5835	0.01176	94	0.8647	0.02795	82	0.5937	0.02902	82	11.87	0.41	86	88

[60, 60]	32	adam	relu	0.5818	0.01164	82	0.8661	0.02995	91	0.5928	0.03079	89	7.18	0.15	87.33	89
[60, 20]	32	Nadam	relu	0.5807	0.01273	77	0.8666	0.03158	93	0.5916	0.03358	93	8.05	0.05	87.67	90
[40, 80]	8	adam	relu	0.5827	0.01401	87	0.8659	0.03333	89	0.5928	0.03351	88	21.13	0.2	88	91
[60]	16	Nadam	relu	0.587	0.01245	129	0.863	0.0298	72	0.5955	0.02903	72	13.33	0.1	91	92
[40, 60, 80]	16	adam	relu	0.5822	0.01358	85	0.8682	0.02944	98	0.5904	0.03166	100	11.48	0.34	94.33	93
[100, 80, 60, 40, 20]	32	adam	relu	0.5797	0.01153	69	0.8697	0.02413	111	0.5893	0.0245	108	9.57	0.43	96	94
[60, 20]	32	adam	relu	0.5844	0.01397	101	0.8671	0.02878	94	0.5914	0.03218	94	7.1	0.17	96.33	95
[60, 40, 20]	32	adam	relu	0.5833	0.0075	92	0.8682	0.02388	99	0.5905	0.02749	99	7.33	0.13	96.67	96
[40, 80]	32	adam	relu	0.5846	0.01162	102	0.8678	0.02681	95	0.5907	0.02974	96	6.1	0.2	97.67	97
[40, 60, 80]	32	adam	relu	0.5844	0.01952	100	0.8683	0.03262	100	0.5906	0.0328	97	6.3	0.27	99	98
[60]	32	adam	relu	0.5869	0.01218	128	0.865	0.02927	85	0.5934	0.03066	84	6.88	0.07	99	99
[80, 80, 80, 80]	32	adam	relu	0.5831	0.01677	90	0.8686	0.03098	102	0.5895	0.03346	106	8.23	0.13	99.33	100
[40, 60, 80]	8	Nadam	relu	0.5852	0.01307	111	0.8679	0.03231	96	0.5908	0.03625	95	24.27	0.65	100.67	101
[40, 80]	16	adam	relu	0.5854	0.01768	112	0.868	0.03797	97	0.5905	0.03616	98	10.61	0.32	102.33	102
[60, 20]	8	adam	relu	0.5854	0.0169	113	0.8683	0.03305	101	0.5902	0.03466	101	23.71	0.23	105	103
[100, 60]	16	Nadam	tanh	0.5824	0.01296	86	0.8715	0.02878	115	0.5873	0.0306	115	16.42	0.14	105.33	104
[80, 40]	8	Nadam	tanh	0.5799	0.00875	70	0.8722	0.02772	126	0.5866	0.02579	127	28.05	0.09	107.67	105
[100]	8	adam	tanh	0.5852	0.01549	110	0.8693	0.03316	106	0.5894	0.03346	107	26.37	0.3	107.67	106
[40, 80, 80, 40]	16	adam	relu	0.5836	0.01443	96	0.8715	0.0276	116	0.587	0.0349	122	11.62	0.38	111.33	107
[80, 80, 40, 40]	8	adam	sigmoid	0.5842	0.01603	99	0.8715	0.03449	121	0.5873	0.03517	116	26.24	0.12	112	108
[60]	16	Nadam	tanh	0.5848	0.01472	103	0.8715	0.02882	119	0.5873	0.02916	117	13.42	0.29	113	109
[80, 40]	16	adam	tanh	0.5852	0.01672	109	0.8712	0.03469	114	0.5872	0.03467	119	13.27	0.11	114	110
[80]	8	adam	tanh	0.5878	0.01096	136	0.8687	0.02694	104	0.5902	0.0264	102	24.25	0.34	114	111
[40, 80, 80, 40]	8	adam	relu	0.585	0.01571	106	0.8715	0.03161	117	0.5871	0.03486	120	22.21	0.66	114.33	112
[40, 80]	16	Nadam	relu	0.5863	0.01435	118	0.8711	0.02978	113	0.5881	0.02881	112	12.13	0.33	114.33	113
[40, 40]	16	adam	relu	0.5871	0.01617	131	0.8694	0.03401	108	0.5892	0.034	109	10.63	0.51	116	114
[100]	16	adam	tanh	0.5871	0.01531	132	0.8711	0.03412	112	0.5876	0.03362	114	14	0.08	119.33	115
[40, 60, 80]	32	Nadam	relu	0.5869	0.01431	126	0.8715	0.02889	120	0.5876	0.02779	113	7.09	0.14	119.67	116
[40, 40]	8	Nadam	relu	0.588	0.01402	141	0.8697	0.03027	110	0.5887	0.03148	111	23.43	0.54	120.67	117
[40, 80, 80, 40]	16	Nadam	relu	0.5866	0.01495	121	0.8716	0.03346	122	0.5871	0.03435	121	13.62	0.29	121.33	118
[60]	32	Nadam	relu	0.5898	0.01605	159	0.8686	0.02991	103	0.5901	0.03141	104	7.54	0.03	122	119

11

[100, 60]	16	adam	tanh	0.5864	0.01733	120	0.8719	0.03416	124	0.5869	0.03202	124	14.72	0.2	122.67	120
[40]	8	adam	relu	0.5898	0.01385	160	0.8688	0.03051	105	0.5901	0.0296	103	19.65	0.34	122.67	121
[80, 80]	8	Nadam	tanh	0.5834	0.00985	93	0.8755	0.02734	139	0.5834	0.03218	139	28.24	0.33	123.67	122
[60]	8	Nadam	tanh	0.5879	0.02213	138	0.8715	0.03689	118	0.5873	0.03398	118	25.3	0.22	124.67	123
[40, 60, 80]	16	Nadam	relu	0.5858	0.01414	115	0.8745	0.03075	133	0.5844	0.03287	133	12.73	0.44	127	124
[40]	8	Nadam	relu	0.5907	0.01367	173	0.8693	0.03082	107	0.5898	0.03026	105	21.53	0.36	128.33	125
[40, 40]	32	Nadam	relu	0.5902	0.01819	167	0.8697	0.035	109	0.589	0.03323	110	6.56	0.18	128.67	126
[40, 60, 80]	8	adam	relu	0.5867	0.01735	123	0.8744	0.03465	132	0.5848	0.03515	132	21.57	0.55	129	127
[100, 60]	8	Nadam	tanh	0.5836	0.01418	97	0.8767	0.03262	145	0.5817	0.03473	146	30.82	0.47	129.33	128
[80]	16	Nadam	tanh	0.5878	0.01477	137	0.8723	0.03564	127	0.5863	0.03527	128	14.22	0.17	130.67	129
[60]	8	adam	tanh	0.5885	0.01569	146	0.8718	0.03359	123	0.587	0.03468	123	23.24	0.52	130.67	130
[40, 40]	8	adam	relu	0.5878	0.01647	135	0.8734	0.03248	129	0.5857	0.03353	129	20.36	0.65	131	131
[80, 80]	16	adam	tanh	0.5863	0.01858	117	0.8754	0.03687	137	0.5829	0.03976	141	13.33	0.19	131.67	132
[80]	16	adam	tanh	0.5881	0.01302	144	0.8723	0.02907	128	0.5868	0.02854	126	12.99	0.15	132.67	133
[80]	8	Nadam	tanh	0.5881	0.01147	143	0.874	0.02856	130	0.5851	0.02836	130	27.23	0.45	134.33	134
[60, 40, 20]	32	Nadam	relu	0.5892	0.01047	154	0.874	0.02973	131	0.5849	0.03348	131	8.48	0.06	138.67	135
[80, 40]	16	Nadam	tanh	0.5889	0.01478	151	0.8752	0.03275	135	0.5839	0.03138	135	15.41	0.43	140.33	136
[60, 20]	8	adam	tanh	0.5869	0.01202	127	0.8777	0.02832	149	0.5815	0.02725	148	24.06	0.31	141.33	137
[100, 100]	16	adam	tanh	0.587	0.0139	130	0.8774	0.02743	147	0.5817	0.03144	147	14.83	0.28	141.33	138
[100, 100]	16	Nadam	tanh	0.5868	0.01013	125	0.8779	0.03076	152	0.5814	0.03048	150	16.74	0.14	142.33	139
[40, 80]	32	Nadam	relu	0.5886	0.01591	147	0.8757	0.03041	141	0.5833	0.03208	140	6.68	0.18	142.67	140
[100, 100]	8	Nadam	tanh	0.5849	0.01278	105	0.8789	0.03105	162	0.5804	0.03114	162	30.6	0.46	143	141
[100, 60, 40]	32	Nadam	tanh	0.5867	0.0118	124	0.878	0.02883	154	0.5811	0.02948	154	10.53	0.53	144	142
[100, 60]	32	Nadam	tanh	0.5896	0.01296	157	0.8762	0.02854	143	0.5827	0.03002	142	9.95	0.43	147.33	143
[100]	16	Nadam	tanh	0.5899	0.01312	164	0.8756	0.02543	140	0.5836	0.02665	138	15.8	0.23	147.33	144
[80, 40]	8	adam	tanh	0.5854	0.01253	114	0.8791	0.02975	164	0.5798	0.03342	165	24.89	0.19	147.67	145
[40, 80, 80, 40]	32	Nadam	relu	0.5895	0.01213	155	0.8766	0.02866	144	0.5825	0.03278	144	7.58	0.39	147.67	146
[60, 60]	8	Nadam	tanh	0.5875	0.01439	133	0.8783	0.03237	155	0.5806	0.03433	158	26.9	0.31	148.67	147
[80, 80]	8	Nadam	sigmoid	0.5879	0.01314	140	0.8779	0.0315	151	0.581	0.0324	155	28.95	0.65	148.67	148
[40, 40]	32	adam	relu	0.5907	0.0125	174	0.8752	0.0234	136	0.5837	0.02928	136	5.78	0.19	148.67	149
[40]	16	adam	relu	0.5931	0.01406	200	0.8721	0.02986	125	0.5868	0.03178	125	10.6	0.16	150	150

12

[100, 100]	32	Nadam	tanh	0.5914	0.01555	182	0.8755	0.02813	138	0.5837	0.03078	137	10.18	0.29	152.33	151
[100, 60]	8	adam	tanh	0.5864	0.01328	119	0.8801	0.02683	171	0.5789	0.03181	171	27.3	0.47	153.67	152
[100, 60]	32	adam	tanh	0.5898	0.01689	162	0.8778	0.03204	150	0.5811	0.03506	153	8.76	0.05	155	153
[100, 60, 40]	16	adam	tanh	0.586	0.0157	116	0.8806	0.03312	176	0.5786	0.03332	177	15.27	0.09	156.33	154
[100, 100]	32	adam	tanh	0.5895	0.00939	156	0.8785	0.02411	158	0.5807	0.02885	156	8.85	0.15	156.67	155
[80, 80]	32	adam	tanh	0.5912	0.01374	179	0.8777	0.02949	148	0.5815	0.03145	149	7.55	0.12	158.67	156
[40]	16	Nadam	relu	0.5944	0.01579	209	0.875	0.03186	134	0.584	0.0328	134	11.09	0.2	159	157
[100, 60, 40]	8	adam	sigmoid	0.5879	0.01079	139	0.88	0.02896	169	0.5792	0.03183	170	28.19	0.6	159.33	158
[100, 60]	8	adam	sigmoid	0.5907	0.01403	175	0.878	0.0299	153	0.5812	0.03105	152	27.06	0.61	160	159
[40, 80, 80, 40]	8	Nadam	relu	0.5926	0.01811	195	0.876	0.03837	142	0.5826	0.04099	143	25.31	0.62	160	160
[60, 20]	16	Nadam	tanh	0.5886	0.01462	148	0.8799	0.03034	167	0.5794	0.02828	168	14.22	0.2	161	161
[60, 20]	16	adam	tanh	0.5904	0.01238	168	0.8784	0.02828	157	0.5806	0.02756	160	12.66	0.08	161.67	162
[80, 80]	16	Nadam	tanh	0.5892	0.01222	153	0.88	0.03012	170	0.5794	0.02947	167	15.16	0.2	163.33	163
[100, 60, 40]	32	adam	tanh	0.5909	0.01477	177	0.8784	0.03121	156	0.5806	0.0345	159	9.04	0.02	164	164
[100, 100]	8	adam	sigmoid	0.5897	0.01272	158	0.8799	0.02465	168	0.5793	0.02809	169	26.95	0.35	165	165
[80, 40]	32	Nadam	tanh	0.5913	0.0102	180	0.8787	0.02202	161	0.5807	0.02529	157	8.57	0.17	166	166
[60, 20]	32	adam	tanh	0.5906	0.01159	170	0.8794	0.02861	166	0.5797	0.02998	166	7.18	0.15	167.33	167
[100, 60, 40]	8	adam	tanh	0.5849	0.01565	104	0.8841	0.03742	199	0.5752	0.03686	200	28.13	0.27	167.67	168
[100, 100]	8	adam	tanh	0.5883	0.01217	145	0.8819	0.03273	182	0.5773	0.0327	183	27.06	0.27	170	169
[40, 80, 80, 40]	32	adam	relu	0.5913	0.01386	181	0.8792	0.03055	165	0.5799	0.03189	164	6.41	0.21	170	170
[40]	8	Nadam	tanh	0.5921	0.01749	189	0.8785	0.03361	160	0.5805	0.03405	161	21.14	0.69	170	171
[100, 100]	8	Nadam	sigmoid	0.5901	0.01255	166	0.8803	0.02963	172	0.5788	0.03274	174	30.3	0.37	170.67	172
[80, 40]	32	adam	tanh	0.5906	0.0159	171	0.8804	0.03141	173	0.5786	0.03491	176	7.43	0.05	173.33	173
[80, 80]	8	adam	tanh	0.5898	0.01019	161	0.8821	0.02724	184	0.5773	0.02978	181	25.38	0.28	175.33	174
[80, 80, 40, 40]	8	Nadam	sigmoid	0.5908	0.01633	176	0.8806	0.03597	175	0.5786	0.03448	175	30.11	0.22	175.33	175
[60]	16	adam	tanh	0.5933	0.01473	201	0.879	0.03246	163	0.5803	0.02982	163	11.85	0.23	175.67	176
[100, 60]	8	Nadam	sigmoid	0.59	0.01551	165	0.8815	0.03065	181	0.5773	0.03592	182	30.3	0.44	176	177
[100, 80, 60, 40, 20]	16	Nadam	tanh	0.588	0.0208	142	0.8835	0.04223	194	0.5755	0.04278	194	18.44	0.17	176.67	178
[80, 60, 80, 40]	8	Nadam	sigmoid	0.5917	0.01383	186	0.8806	0.0296	174	0.5788	0.02872	172	30.28	0.33	177.33	179
[100, 80, 60, 40, 20]	16	adam	tanh	0.5889	0.01471	150	0.8833	0.03817	193	0.5754	0.04161	195	16.1	0.24	179.33	180
[40]	32	adam	relu	0.5974	0.01189	232	0.8785	0.02734	159	0.5813	0.02513	151	5.57	0.15	180.67	181

13

[100, 60, 40]	16	Nadam	tanh	0.589	0.00928	152	0.8841	0.0251	198	0.5753	0.02876	198	17.3	0.16	182.67	182
[80, 40]	8	Nadam	sigmoid	0.5911	0.01781	178	0.8824	0.03199	185	0.5767	0.0357	186	28.25	0.26	183	183
[80, 80]	32	Nadam	tanh	0.5925	0.0147	194	0.8809	0.0309	177	0.5783	0.03179	178	8.78	0.38	183	184
[40]	8	adam	tanh	0.5941	0.01415	202	0.8814	0.0297	180	0.5781	0.02961	179	19.36	0.57	187	185
[60, 60]	16	Nadam	tanh	0.5917	0.01344	187	0.8828	0.02783	188	0.5767	0.02911	187	14.24	0.19	187.33	186
[80]	8	Nadam	sigmoid	0.5921	0.01873	188	0.8827	0.03367	187	0.5765	0.03398	188	26.76	0.45	187.67	187
[80, 40]	8	adam	sigmoid	0.5921	0.01544	190	0.8829	0.03124	191	0.5764	0.03446	191	25.43	0.29	190.67	188
[60, 20]	8	Nadam	tanh	0.5899	0.01206	163	0.8845	0.02686	202	0.5745	0.03067	208	26.61	0.25	191	189
[80, 60, 80, 40]	32	Nadam	tanh	0.595	0.01415	214	0.8813	0.03332	179	0.5778	0.03455	180	9.35	0.12	191	190
[60, 60]	16	adam	tanh	0.5916	0.00985	184	0.884	0.02733	197	0.5753	0.03118	197	12.83	0.15	192.67	191
[100]	32	Nadam	tanh	0.5928	0.01704	198	0.8828	0.03199	190	0.5764	0.03142	190	9.33	0.12	192.67	192
[60, 40, 20]	8	Nadam	tanh	0.5887	0.01122	149	0.886	0.03044	218	0.5736	0.03123	216	27.73	0.3	194.33	193
[80]	32	Nadam	tanh	0.5944	0.02075	206	0.8828	0.03695	189	0.5763	0.03621	192	8.26	0.22	195.67	194
[100, 60, 40]	8	Nadam	tanh	0.5866	0.0094	122	0.8874	0.0276	234	0.5721	0.0314	234	31.23	0.37	196.67	195
[60, 20]	32	Nadam	tanh	0.5944	0.01078	207	0.8836	0.02582	195	0.5761	0.02586	193	8.13	0.08	198.33	196
[40, 40]	8	Nadam	tanh	0.5922	0.0124	191	0.8843	0.03066	200	0.5749	0.03083	205	22.44	0.49	198.67	197
[80, 80]	8	adam	sigmoid	0.5923	0.01521	192	0.8846	0.02755	204	0.5752	0.02971	201	25.12	0.52	199	198
[80, 80, 80, 80]	8	adam	sigmoid	0.5916	0.01257	185	0.885	0.02674	210	0.5744	0.02847	210	26.42	0.23	201.67	199
[100, 60, 40]	8	Nadam	sigmoid	0.5924	0.0158	193	0.8846	0.03164	205	0.5744	0.03417	209	32.06	0.49	202.33	200
[100, 60]	8	sgd	relu	0.6112	0.0236	320	0.8773	0.03185	146	0.5822	0.02916	145	22.07	0.2	203.67	201
[60, 60]	8	adam	tanh	0.5906	0.01488	172	0.8863	0.03495	223	0.5733	0.03281	221	24.5	0.2	205.33	202
[40, 40]	16	adam	tanh	0.5929	0.01244	199	0.885	0.0285	211	0.5743	0.03375	211	10.75	0.33	207	203
[100]	32	adam	tanh	0.5948	0.0126	212	0.8847	0.02913	206	0.575	0.02801	203	8.46	0.18	207	204
[20]	8	Nadam	relu	0.6	0.01432	257	0.8821	0.03307	183	0.5773	0.03257	184	15.78	0.08	208	205
[80, 40, 60]	32	adam	tanh	0.5968	0.01668	231	0.884	0.02946	196	0.5753	0.03517	199	7.75	0.14	208.67	206
[100]	8	Nadam	sigmoid	0.5941	0.01807	203	0.8856	0.03172	214	0.574	0.0304	213	29.04	0.52	210	207
[80, 80, 40, 40]	8	Nadam	tanh	0.5904	0.00941	169	0.8872	0.02517	232	0.5724	0.02415	231	29.98	0.24	210.67	208
[80, 60, 80, 40]	8	adam	sigmoid	0.5949	0.01536	213	0.8849	0.02886	209	0.5743	0.03395	212	26.65	0.33	211.33	209
[80, 40, 60]	16	Nadam	tanh	0.5951	0.01437	215	0.8854	0.03168	212	0.5738	0.03343	214	15.61	0.16	213.67	210
[100, 80, 60, 40, 20]	8	Nadam	tanh	0.5875	0.01111	134	0.8892	0.02881	252	0.5702	0.0327	256	33.94	0.51	214	211
[80, 80]	8	sgd	relu	0.6058	0.0152	291	0.881	0.02403	178	0.5788	0.02558	173	18.94	0.53	214	212

14

[100]	8	adam	sigmoid	0.5943	0.01546	204	0.8861	0.03393	220	0.5733	0.03337	223	26.44	0.62	215.67	213
[80, 40, 60]	32	Nadam	tanh	0.5954	0.01235	219	0.8859	0.02784	217	0.5737	0.03119	215	8.94	0.1	217	214
[20, 100]	8	adam	relu	0.6033	0.01863	277	0.8827	0.03335	186	0.5764	0.03705	189	15.51	0.25	217.33	215
[80, 40, 60]	8	Nadam	tanh	0.5916	0.01789	183	0.8874	0.03864	233	0.5717	0.03786	238	29.48	0.25	218	216
[80, 40, 60]	8	adam	sigmoid	0.5956	0.01969	221	0.8856	0.03519	215	0.5733	0.03995	218	25.76	0.26	218	217
[20, 20]	8	adam	relu	0.5994	0.01909	250	0.8844	0.03483	201	0.575	0.03576	204	15.17	0.17	218.33	218
[20, 100]	16	adam	relu	0.5987	0.01574	246	0.8849	0.03403	208	0.5746	0.03567	207	9.55	0.25	220.33	219
[60, 60]	8	adam	sigmoid	0.5965	0.01504	229	0.8858	0.03215	216	0.5735	0.03421	217	23.98	0.32	220.67	220
[100, 80, 60, 40, 20]	8	adam	sigmoid	0.5952	0.01394	217	0.8861	0.02689	221	0.5732	0.03163	225	29.28	0.12	221	221
[60, 40, 20]	16	Nadam	tanh	0.5944	0.0105	208	0.8869	0.02537	228	0.5727	0.02801	228	14.8	0.14	221.33	222
[80, 40, 60]	8	adam	tanh	0.5928	0.01734	197	0.8876	0.0371	236	0.5718	0.03697	237	25.84	0.3	223.33	223
[80]	8	adam	sigmoid	0.5954	0.01528	218	0.8866	0.02984	226	0.5731	0.02842	226	24.16	0.28	223.33	224
[40, 80, 80, 40]	8	Nadam	tanh	0.5951	0.01114	216	0.8872	0.02932	231	0.5725	0.03146	230	25.78	1.09	225.67	225
[80]	32	adam	tanh	0.5965	0.01075	228	0.8867	0.02907	227	0.5725	0.02916	229	7.12	0.03	228	226
[40]	16	adam	tanh	0.5981	0.0137	241	0.8862	0.02892	222	0.5733	0.03021	222	9.79	0.22	228.33	227
[60, 40, 20]	32	adam	tanh	0.5984	0.01273	244	0.8865	0.02763	225	0.5732	0.02534	224	7.37	0.12	231	228
[40, 80, 80, 40]	8	Nadam	sigmoid	0.5961	0.01046	226	0.8879	0.02711	239	0.5715	0.03034	242	25.35	0.67	235.67	229
[40]	32	Nadam	relu	0.602	0.01831	270	0.886	0.03589	219	0.5733	0.03827	220	5.95	0.16	236.33	230
[100, 80, 60, 40, 20]	8	Nadam	sigmoid	0.5956	0.0099	222	0.8883	0.02876	244	0.5711	0.02999	246	33.81	0.21	237.33	231
[80, 80, 80, 80]	8	sgd	relu	0.6134	0.0181	337	0.8831	0.03356	192	0.5768	0.03239	185	73.86	2.4	238	232
[60, 60]	32	adam	tanh	0.5997	0.01657	253	0.8871	0.03284	230	0.5722	0.03356	233	7.28	0.21	238.67	233
[40, 80]	8	Nadam	tanh	0.5955	0.0167	220	0.8888	0.03375	250	0.5706	0.03498	248	22.54	0.55	239.33	234
[80, 60, 80, 40]	16	Nadam	tanh	0.5977	0.00936	238	0.8879	0.02901	240	0.5715	0.03299	241	16.51	0.32	239.67	235
[20, 100]	16	Nadam	relu	0.6025	0.01744	274	0.8864	0.03559	224	0.5729	0.03826	227	10.53	0.26	241.67	236
[40, 40]	8	sgd	relu	0.6121	0.02	327	0.8845	0.03151	203	0.5754	0.02901	196	16.78	0.03	242	237
[60, 40, 20]	16	adam	tanh	0.5976	0.01853	236	0.8886	0.03562	248	0.5707	0.03725	247	13.25	0.19	243.67	238
[80, 40, 60]	8	Nadam	sigmoid	0.5967	0.01248	230	0.8893	0.02772	254	0.5706	0.02972	250	29.24	0.25	244.67	239
[80, 80, 40, 40]	16	adam	sigmoid	0.5976	0.01743	237	0.8886	0.03034	247	0.5705	0.03495	252	14.31	0.25	245.33	240
[40, 80]	16	adam	tanh	0.5992	0.01729	249	0.8883	0.03028	245	0.5711	0.03293	244	10.47	0.38	246	241
[80, 40, 60]	16	adam	tanh	0.5946	0.00745	211	0.891	0.02209	264	0.5688	0.02387	265	13.91	0.16	246.67	242
[80, 80, 80, 80]	8	Nadam	sigmoid	0.5975	0.01075	235	0.8893	0.02233	256	0.5706	0.0243	249	30.73	0.36	246.67	243

15

[40, 40]	8	adam	tanh	0.596	0.01524	225	0.8897	0.03084	259	0.5698	0.03175	259	20.45	0.45	247.67	244
[80, 60, 80, 40]	8	Nadam	tanh	0.5944	0.0117	205	0.8918	0.03015	271	0.5681	0.03243	269	30.14	0.21	248.33	245
[40, 40]	16	Nadam	tanh	0.5983	0.01144	242	0.8889	0.02381	251	0.5704	0.02775	255	11.97	0.52	249.33	246
[80, 80, 80, 80]	32	Nadam	tanh	0.6008	0.00987	262	0.8883	0.03077	242	0.5711	0.03482	245	9.6	0.13	249.67	247
[20, 100]	8	Nadam	relu	0.6039	0.01162	278	0.8875	0.03244	235	0.5717	0.03716	239	17.4	0.18	250.67	248
[80, 80, 40, 40]	8	adam	tanh	0.5945	0.01136	210	0.8921	0.02774	273	0.5678	0.02875	272	26.42	0.15	251.67	249
[100, 80, 60, 40, 20]	32	Nadam	tanh	0.5974	0.01218	234	0.8901	0.02697	261	0.5696	0.03037	261	11.2	0.32	252	250
[80, 80, 40, 40]	16	Nadam	tanh	0.5959	0.01253	224	0.8914	0.02923	267	0.5682	0.0289	268	16.36	0.28	253	251
[40]	16	Nadam	tanh	0.5986	0.0135	245	0.8896	0.02526	257	0.5701	0.02865	257	10.84	0.14	253	252
[40, 60, 80]	16	Nadam	tanh	0.6028	0.01746	275	0.888	0.03403	241	0.5712	0.03494	243	12.92	0.4	253	253
[100, 80, 60, 40, 20]	32	adam	tanh	0.5974	0.0114	233	0.8912	0.02647	266	0.5688	0.02726	264	9.66	0.12	254.33	254
[80]	8	sgd	relu	0.6144	0.01444	344	0.8855	0.02836	213	0.5749	0.02229	206	18.65	0.12	254.33	255
[60, 40, 20]	8	Nadam	sigmoid	0.6	0.01489	256	0.8892	0.03044	253	0.5701	0.03353	258	27.79	0.26	255.67	256
[60, 40, 20]	32	Nadam	tanh	0.5995	0.01026	251	0.8896	0.02973	258	0.5697	0.03337	260	8.65	0.24	256.33	257
[100]	8	sgd	relu	0.6191	0.01249	370	0.8847	0.02307	207	0.5751	0.02629	202	20.18	0.26	259.67	258
[80, 60, 80, 40]	8	adam	tanh	0.5963	0.0146	227	0.8925	0.03321	276	0.5669	0.03437	278	26.79	0.39	260.33	259
[80, 80, 40, 40]	16	Nadam	sigmoid	0.5997	0.01439	255	0.8907	0.03088	263	0.569	0.03241	263	16.45	0.31	260.33	260
[60, 20]	8	adam	sigmoid	0.5978	0.01876	239	0.892	0.03592	272	0.5677	0.03712	273	23.89	0.16	261.33	261
[60, 60]	8	Nadam	sigmoid	0.5989	0.01532	247	0.8916	0.0343	269	0.5677	0.03692	274	27.17	0.85	263.33	262
[100, 60]	16	adam	sigmoid	0.5984	0.01445	243	0.8921	0.03024	274	0.5672	0.03439	276	14.75	0.19	264.33	263
[60, 60]	32	Nadam	tanh	0.6007	0.01781	258	0.8916	0.03084	268	0.5682	0.03269	267	8.45	0.26	264.33	264
[80, 80, 40, 40]	32	adam	tanh	0.6022	0.01164	273	0.8906	0.02649	262	0.5687	0.03317	266	8.01	0.09	267	265
[20, 100]	32	Nadam	relu	0.6062	0.01338	293	0.8893	0.02907	255	0.5705	0.03092	253	5.97	0.03	267	266
[100, 80, 60, 40, 20]	8	adam	tanh	0.5926	0.00807	196	0.8962	0.02245	305	0.5638	0.02613	304	29.82	0.32	268.33	267
[40, 80]	8	adam	tanh	0.5981	0.0133	240	0.8931	0.03164	283	0.5663	0.03314	284	20.33	0.73	269	268
[100, 100]	16	adam	sigmoid	0.6007	0.01557	259	0.8926	0.032	277	0.5668	0.0345	279	14.89	0.1	271.67	269
[80, 80, 80, 80]	16	Nadam	tanh	0.5991	0.01645	248	0.8938	0.03618	288	0.566	0.03449	286	16.54	0.24	274	270
[100, 100]	8	sgd	relu	0.6206	0.01735	376	0.887	0.02944	229	0.5733	0.02549	219	22.34	1.38	274.67	271
[80, 80, 80, 80]	16	adam	tanh	0.6009	0.01211	265	0.8929	0.02596	279	0.5667	0.02935	281	14.4	0.14	275	272
[80, 60, 80, 40]	16	adam	tanh	0.5997	0.01442	254	0.8938	0.03129	287	0.566	0.02984	287	14.46	0.33	276	273
[100, 100]	16	Nadam	sigmoid	0.6009	0.01532	264	0.8931	0.02832	282	0.5667	0.03117	282	16.6	0.07	276	274

16

[80, 80, 40, 40]	32	Nadam	tanh	0.6008	0.01369	261	0.8933	0.0312	284	0.5661	0.03427	285	9.43	0.25	276.67	275
[100, 60, 40]	8	sgd	relu	0.6155	0.01714	352	0.8879	0.02874	238	0.5717	0.03343	240	23.51	1.2	276.67	276
[60]	8	adam	sigmoid	0.6008	0.01577	263	0.8935	0.03082	285	0.5665	0.0297	283	23.15	0.33	277	277
[60]	8	sgd	relu	0.6151	0.01554	351	0.8884	0.03084	246	0.5721	0.02576	235	17.86	0.5	277.33	278
[80, 40]	8	sgd	relu	0.6181	0.02079	363	0.8877	0.03061	237	0.5724	0.03069	232	20.6	0.18	277.33	279
[60, 40, 20]	8	adam	tanh	0.5957	0.01429	223	0.896	0.02633	304	0.5636	0.03254	306	24.76	0.45	277.67	280
[20, 100]	32	adam	relu	0.6039	0.01525	279	0.893	0.032	281	0.5673	0.03191	275	5.17	0.24	278.33	281
[80, 60, 80, 40]	32	adam	tanh	0.6039	0.01446	280	0.8927	0.03088	278	0.5667	0.0311	280	8.15	0.16	279.33	282
[80, 40, 60]	8	sgd	relu	0.6175	0.01751	360	0.8883	0.03752	243	0.5718	0.03411	236	27.32	11.36	279.67	283
[80, 80, 80, 80]	32	adam	tanh	0.6048	0.00862	287	0.8929	0.02169	280	0.5669	0.02511	277	8.28	0.22	281.33	284
[60, 20]	8	Nadam	sigmoid	0.5996	0.01219	252	0.8954	0.02885	299	0.5646	0.03059	298	26.58	0.34	283	285
[40, 60, 80]	8	adam	tanh	0.6011	0.01354	267	0.894	0.03534	289	0.5653	0.03817	295	21.84	0.33	283.67	286
[80, 60, 80, 40]	16	Nadam	sigmoid	0.6043	0.01874	286	0.8936	0.03056	286	0.5656	0.03577	292	16.37	0.13	288	287
[60]	32	adam	tanh	0.602	0.01428	271	0.8953	0.03363	298	0.5643	0.03348	299	6.82	0.07	289.33	288
[60, 40, 20]	8	adam	sigmoid	0.601	0.01282	266	0.8956	0.02809	302	0.5639	0.03437	302	24.83	0.58	290	289
[40, 80]	16	Nadam	tanh	0.6043	0.01641	285	0.8944	0.031	292	0.5653	0.03381	294	12.11	0.23	290.33	290
[80, 80, 80, 80]	16	adam	sigmoid	0.604	0.01238	282	0.8946	0.03624	295	0.5651	0.03338	296	14.34	0.3	291	291
[40, 60, 80]	8	Nadam	tanh	0.6021	0.01316	272	0.8955	0.03001	301	0.5639	0.0349	301	24.05	0.85	291.33	292
[40, 60, 80]	8	adam	sigmoid	0.6065	0.01985	296	0.894	0.03726	290	0.5654	0.03878	293	21.02	0.28	293	293
[20, 20]	16	adam	relu	0.6073	0.01765	303	0.8942	0.03546	291	0.5658	0.0346	289	8.82	0.12	294.33	294
[60, 40, 20]	8	sgd	relu	0.6223	0.01695	383	0.8886	0.03183	249	0.5705	0.03583	251	20.59	0.23	294.33	295
[60]	32	Nadam	tanh	0.6007	0.01483	260	0.8973	0.03196	313	0.5626	0.03047	313	7.74	0.06	295.33	296
[80, 80, 80, 80]	8	adam	tanh	0.6014	0.01205	268	0.8969	0.02934	310	0.5633	0.02658	308	26.66	0.33	295.33	297
[80, 80]	16	adam	sigmoid	0.6039	0.0159	281	0.8959	0.03125	303	0.5638	0.03421	303	13.6	0.27	295.67	298
[40]	8	sgd	relu	0.6198	0.01637	373	0.89	0.03026	260	0.5705	0.02724	254	15.25	0.36	295.67	299
[20, 20]	16	Nadam	relu	0.6077	0.0081	306	0.8945	0.0237	294	0.5659	0.02206	288	10.01	0.24	296	300
[80, 80, 40, 40]	16	adam	tanh	0.6017	0.0095	269	0.8969	0.02352	309	0.5629	0.02312	312	14.13	0.14	296.67	301
[60]	8	Nadam	sigmoid	0.6029	0.01303	276	0.8965	0.02779	307	0.5633	0.03122	309	25.44	0.23	297.33	302
[100, 80, 60, 40, 20]	16	Nadam	sigmoid	0.6074	0.01226	305	0.8952	0.03361	297	0.5648	0.03568	297	18.66	0.23	299.67	303
[40, 40]	32	Nadam	tanh	0.6055	0.01405	290	0.8964	0.02866	306	0.5634	0.02934	307	6.82	0.25	301	304
[60, 60]	8	sgd	relu	0.6225	0.01921	384	0.8911	0.03401	265	0.569	0.03196	262	19.56	0.37	303.67	305

[20, 20]	16	adam	tanh	0.6095	0.01005	315	0.8954	0.0258	300	0.5643	0.02716	300	8.95	0.14	305	306
[40]	32	adam	tanh	0.6052	0.01621	289	0.8981	0.03251	315	0.5617	0.03217	314	5.68	0.21	306	307
[80, 80, 40, 40]	8	sgd	relu	0.6219	0.02647	380	0.8917	0.032	270	0.568	0.03433	271	73.22	7.86	307	308
[40, 40]	32	adam	tanh	0.6071	0.01588	302	0.8969	0.03239	311	0.5632	0.03157	310	5.94	0.18	307.67	309
[40, 80]	8	Nadam	sigmoid	0.6051	0.01191	288	0.8984	0.02611	318	0.5614	0.03097	319	23.09	0.81	308.33	310
[80, 80, 80, 80]	8	Nadam	tanh	0.6041	0.02044	283	0.8997	0.03994	320	0.5598	0.03998	325	30.27	0.22	309.33	311
[100, 60, 40]	16	adam	sigmoid	0.6081	0.00921	308	0.897	0.02971	312	0.5629	0.03076	311	15.2	0.18	310.33	312
[40, 80, 80, 40]	8	adam	sigmoid	0.607	0.01699	301	0.898	0.03343	314	0.5616	0.03366	317	22.45	0.62	310.67	313
[40, 60, 80]	32	adam	tanh	0.6119	0.0105	323	0.8966	0.01892	308	0.5636	0.02385	305	6.45	0.14	312	314
[80, 60, 80, 40]	8	sgd	relu	0.624	0.0133	393	0.8925	0.02793	275	0.5681	0.02707	270	65.91	12.99	312.67	315
[40]	8	adam	sigmoid	0.6064	0.01381	295	0.8999	0.03094	323	0.56	0.03224	323	19.7	0.18	313.67	316
[100, 60]	16	Nadam	sigmoid	0.6043	0.01315	284	0.901	0.02896	330	0.559	0.03109	329	16.65	0.18	314.33	317
[20]	8	adam	tanh	0.6091	0.0164	312	0.8982	0.02923	317	0.5617	0.03276	316	14.58	0.15	315	318
[40, 40]	8	Nadam	sigmoid	0.6068	0.0153	298	0.9002	0.03165	325	0.5596	0.03331	326	23.02	0.52	316.33	319
[40, 80]	8	adam	sigmoid	0.6069	0.01729	299	0.9005	0.03247	326	0.5594	0.0365	328	20.61	0.72	317.67	320
[40, 80]	32	Nadam	tanh	0.6088	0.01483	310	0.8998	0.02532	322	0.5604	0.02826	321	6.7	0.1	317.67	321
[40, 60, 80]	32	Nadam	tanh	0.612	0.01205	326	0.8981	0.02617	316	0.5617	0.03223	315	7.13	0.28	319	322
[40]	32	Nadam	tanh	0.606	0.01232	292	0.9016	0.02627	336	0.5584	0.02716	335	5.97	0.11	321	323
[80, 40]	16	adam	sigmoid	0.6062	0.01344	294	0.9015	0.02988	334	0.5583	0.03278	336	13.61	0.37	321.33	324
[20]	16	adam	relu	0.6122	0.01506	328	0.8988	0.03397	319	0.5614	0.03352	318	8.31	0.16	321.67	325
[80, 80]	16	Nadam	sigmoid	0.607	0.01731	300	0.9015	0.03038	335	0.5585	0.03245	333	15.81	0.71	322.67	326
[40, 80, 80, 40]	16	Nadam	sigmoid	0.611	0.01711	317	0.9005	0.03517	328	0.5594	0.0351	327	13.55	0.35	324	327
[40, 80]	8	sgd	relu	0.6234	0.01622	391	0.8944	0.02802	293	0.5657	0.03149	290	17.83	0.7	324.67	328
[40, 80, 80, 40]	32	Nadam	tanh	0.6113	0.00942	322	0.9011	0.02368	331	0.5589	0.02617	330	7.45	0.26	327.67	329
[40, 60, 80]	16	adam	tanh	0.6111	0.01207	319	0.9014	0.02718	333	0.5585	0.03006	334	11.56	0.37	328.67	330
[40]	8	Nadam	sigmoid	0.6073	0.01181	304	0.904	0.03	344	0.5561	0.03046	340	21.41	0.35	329.33	331
[40, 80, 80, 40]	16	Nadam	tanh	0.6091	0.01467	311	0.9022	0.0332	338	0.5579	0.03376	339	13.26	0.19	329.33	332
[40, 60, 80]	8	Nadam	sigmoid	0.6094	0.00905	314	0.9021	0.02279	337	0.5582	0.02474	337	24.66	0.62	329.33	333
[60, 20]	8	sgd	relu	0.6265	0.00813	402	0.8948	0.02396	296	0.5657	0.02129	291	19.58	0.08	329.67	334
[80, 40, 60]	16	adam	sigmoid	0.6077	0.01137	307	0.9038	0.02862	341	0.556	0.03378	342	14.08	0.21	330	335
[20, 20]	8	Nadam	relu	0.615	0.01321	350	0.8998	0.02886	321	0.5603	0.03263	322	16.99	0.18	331	336

18

[80, 40]	16	Nadam	sigmoid	0.6092	0.01445	313	0.9037	0.03127	340	0.5561	0.03394	341	15.27	0.16	331.33	337
[40, 40]	8	adam	sigmoid	0.6085	0.01812	309	0.904	0.032	343	0.556	0.03374	343	20.05	0.8	331.67	338
[20]	8	Nadam	tanh	0.6113	0.01892	321	0.9023	0.03194	339	0.5581	0.02983	338	15.89	0.16	332.67	339
[100, 60, 40]	16	Nadam	sigmoid	0.6067	0.01632	297	0.9055	0.03299	351	0.5543	0.03562	354	17.18	0.06	334	340
[80, 60, 80, 40]	16	adam	sigmoid	0.6108	0.01372	316	0.904	0.02992	342	0.5559	0.03179	344	14.25	0.16	334	341
[40, 80, 80, 40]	32	adam	tanh	0.614	0.01597	341	0.901	0.03415	329	0.5587	0.03585	332	6.74	0.25	334	342
[20]	8	adam	relu	0.6146	0.01515	345	0.9014	0.02809	332	0.5587	0.03276	331	17.78	6.02	336	343
[20, 20]	8	Nadam	tanh	0.6111	0.01675	318	0.9045	0.037	345	0.5553	0.0384	347	17.19	0.33	336.67	344
[60, 60]	16	adam	sigmoid	0.612	0.016	325	0.9048	0.03286	347	0.5552	0.03388	348	12.87	0.13	340	345
[20, 20]	8	adam	tanh	0.6124	0.01002	331	0.9048	0.02419	346	0.5556	0.02736	346	15.49	0.25	341	346
[20, 20]	32	Nadam	relu	0.6129	0.01625	332	0.9049	0.03345	349	0.5551	0.03621	349	5.77	0.11	343.33	347
[80, 80, 80, 80]	16	Nadam	sigmoid	0.6133	0.01642	336	0.9048	0.03224	348	0.5548	0.03599	350	16.46	0.17	344.67	348
[20]	16	adam	tanh	0.612	0.01029	324	0.9063	0.02853	355	0.5539	0.02784	356	8.53	0.32	345	349
[40, 80, 80, 40]	8	adam	tanh	0.6122	0.01955	329	0.9063	0.04104	357	0.5535	0.04009	357	22.39	0.27	347.67	350
[20, 100]	8	adam	tanh	0.6134	0.01283	339	0.9057	0.0296	354	0.5543	0.0311	353	15.78	0.08	348.67	351
[100, 100]	16	sgd	relu	0.6281	0.01432	407	0.9	0.0252	324	0.5606	0.02346	320	24.23	14.2	350.33	352
[20, 20]	32	adam	tanh	0.6167	0.01113	357	0.9055	0.02373	352	0.5545	0.03012	352	5.01	0.12	353.67	353
[20]	16	Nadam	tanh	0.6141	0.01515	342	0.9068	0.03378	361	0.5532	0.0336	361	9.13	0.2	354.67	354
[20, 20]	8	sgd	relu	0.6295	0.01428	413	0.9005	0.02492	327	0.5599	0.02694	324	13.64	0.15	354.67	355
[20, 100]	8	Nadam	tanh	0.6132	0.01203	334	0.9076	0.02807	365	0.5524	0.03212	366	17.43	0.48	355	356
[60, 20]	16	adam	sigmoid	0.6132	0.01626	333	0.9087	0.03319	369	0.5511	0.03681	369	12.76	0.23	357	357
[40, 80, 80, 40]	16	adam	tanh	0.616	0.01613	354	0.9064	0.03186	358	0.5532	0.03823	360	11.7	0.42	357.33	358
[20, 20]	16	Nadam	tanh	0.6164	0.01509	356	0.9065	0.03006	359	0.5534	0.03642	358	10.17	0.26	357.67	359
[80, 80, 40, 40]	32	Nadam	sigmoid	0.6134	0.01503	338	0.9086	0.02568	368	0.5512	0.03202	368	9.36	0.11	358	360
[20]	16	Nadam	relu	0.6187	0.0166	364	0.9063	0.03783	356	0.554	0.03462	355	8.99	0.06	358.33	361
[20]	32	Nadam	relu	0.6195	0.01577	372	0.9056	0.02928	353	0.5546	0.03305	351	5.29	0.17	358.67	362
[100]	16	adam	sigmoid	0.6122	0.01627	330	0.9105	0.03414	374	0.5496	0.03444	374	14.39	0.34	359.33	363
[40, 80, 80, 40]	16	adam	sigmoid	0.6168	0.01454	358	0.9071	0.03208	362	0.5529	0.03302	363	11.53	0.15	361	364
[80, 40, 60]	16	Nadam	sigmoid	0.6138	0.01729	340	0.9104	0.03469	373	0.5496	0.03583	373	15.93	0.23	362	365
[40, 80]	32	adam	tanh	0.617	0.01729	359	0.9072	0.03402	363	0.5528	0.03397	364	6.21	0.12	362	366
[60, 40, 20]	16	Nadam	sigmoid	0.6149	0.01417	348	0.9096	0.03091	370	0.5504	0.03404	370	14.9	0.11	362.67	367

19

[60, 20]	16	Nadam	sigmoid	0.6133	0.01543	335	0.9115	0.03289	379	0.5487	0.03457	379	14.19	0.14	364.33	368
[40, 60, 80]	16	Nadam	sigmoid	0.6143	0.01637	343	0.9106	0.03677	376	0.5492	0.03716	377	12.71	0.35	365.33	369
[60, 60]	16	Nadam	sigmoid	0.6147	0.01633	346	0.9106	0.03243	375	0.5493	0.03567	376	14.4	0.28	365.67	370
[20]	32	adam	tanh	0.6149	0.01239	349	0.9107	0.03099	377	0.5494	0.03048	375	4.68	0.06	367	371
[60, 40, 20]	16	adam	sigmoid	0.6148	0.01557	347	0.9121	0.03301	381	0.5483	0.03271	381	13.12	0.19	369.67	372
[100]	16	Nadam	sigmoid	0.6159	0.01566	353	0.9137	0.03178	384	0.5463	0.03248	384	15.62	0.18	373.67	373
[20, 100]	16	adam	tanh	0.6226	0.01275	385	0.9103	0.02226	372	0.5501	0.02745	371	9.54	0.21	376	374
[20, 20]	32	adam	relu	0.6191	0.02251	369	0.9125	0.04018	382	0.5474	0.0419	382	5.09	0.05	377.67	375
[40, 40]	16	adam	sigmoid	0.6179	0.0162	361	0.9151	0.03178	387	0.5451	0.03374	388	10.65	0.35	378.67	376
[80, 80]	16	sgd	relu	0.6361	0.01612	441	0.905	0.01926	350	0.5556	0.0242	345	38.38	2.43	378.67	377
[40, 60, 80]	8	sgd	relu	0.6298	0.02475	418	0.9065	0.02991	360	0.5533	0.0389	359	18.52	0.27	379	378
[80, 80, 40, 40]	32	adam	sigmoid	0.6204	0.01123	374	0.9131	0.02764	383	0.5472	0.03204	383	8.05	0.06	380	379
[20]	32	adam	relu	0.6222	0.01795	382	0.9118	0.03323	380	0.5485	0.03211	380	4.81	0.12	380.67	380
[40, 80]	16	adam	sigmoid	0.6163	0.01357	355	0.9163	0.03098	394	0.544	0.03213	395	11.18	0.1	381.33	381
[20, 100]	8	adam	sigmoid	0.6189	0.01058	367	0.9156	0.02677	390	0.5446	0.03132	391	15.67	0.19	382.67	382
[40, 40]	16	Nadam	sigmoid	0.6188	0.01294	366	0.9162	0.03145	393	0.5438	0.03366	396	11.59	0.18	385	383
[40, 60, 80]	16	adam	sigmoid	0.622	0.01619	381	0.9154	0.03055	389	0.5446	0.03487	390	11.24	0.27	386.67	384
[20, 20]	8	Nadam	sigmoid	0.618	0.01567	362	0.9179	0.03475	400	0.5424	0.03534	400	17.24	0.25	387.33	385
[80, 40, 60]	16	sgd	relu	0.6337	0.0156	433	0.908	0.02661	366	0.5526	0.02983	365	11.12	0.08	388	386
[80, 40]	16	sgd	relu	0.6354	0.02135	438	0.9075	0.0294	364	0.5531	0.02901	362	11.67	0.32	388	387
[80]	16	adam	sigmoid	0.6191	0.01254	368	0.9172	0.02714	399	0.543	0.0306	399	12.98	0.28	388.67	388
[20, 20]	32	Nadam	tanh	0.6195	0.01483	371	0.9167	0.02834	397	0.5434	0.03212	398	5.82	0.06	388.67	389
[20]	8	Nadam	sigmoid	0.6188	0.01286	365	0.9188	0.02919	402	0.5414	0.03283	402	15.91	0.15	389.67	390
[20, 100]	16	Nadam	tanh	0.6255	0.01583	397	0.9149	0.03023	386	0.5454	0.03255	387	10.45	0.23	390	391
[40, 80, 80, 40]	8	sgd	relu	0.6337	0.03138	432	0.9098	0.03134	371	0.5499	0.03934	372	50.28	12.76	391.67	392
[100, 60]	16	sgd	relu	0.6363	0.02716	442	0.9084	0.03831	367	0.5523	0.03105	367	12.34	0.12	392	393
[60]	16	adam	sigmoid	0.6206	0.01495	375	0.9183	0.03332	401	0.5417	0.03543	401	12.31	0.11	392.33	394
[80, 60, 80, 40]	32	Nadam	sigmoid	0.6231	0.01629	389	0.9162	0.03545	392	0.5437	0.0376	397	9.33	0.25	392.67	395
[20]	8	adam	sigmoid	0.6208	0.01227	377	0.9198	0.03097	404	0.5405	0.03156	405	14.69	0.28	395.33	396
[40, 80, 80, 40]	32	adam	sigmoid	0.6262	0.01065	400	0.9163	0.021	395	0.544	0.02672	394	6.59	0.25	396.33	397
[20, 20]	8	adam	sigmoid	0.6226	0.01483	386	0.9198	0.03294	405	0.5403	0.03477	406	15.54	0.2	399	398

20

[80]	16	Nadam	sigmoid	0.6229	0.01527	387	0.9206	0.03393	408	0.5397	0.03294	409	14.24	0.38	401.33	399
[100, 60, 40]	16	sgd	relu	0.6415	0.02533	448	0.9113	0.03597	378	0.549	0.03844	378	12.54	0.38	401.33	400
[20, 100]	32	Nadam	tanh	0.6248	0.01769	395	0.9203	0.03144	407	0.5401	0.02938	408	5.94	0.14	403.33	401
[80, 80, 80, 80]	32	adam	sigmoid	0.6245	0.0151	394	0.9207	0.03392	409	0.539	0.03621	410	8.34	0.12	404.33	402
[100]	16	sgd	relu	0.6366	0.01429	443	0.9146	0.02321	385	0.5461	0.02547	385	16.75	7.28	404.33	403
[40, 80]	16	Nadam	sigmoid	0.6213	0.01165	379	0.9227	0.03001	418	0.5376	0.03196	419	12.07	0.35	405.33	404
[100, 100]	32	adam	sigmoid	0.6234	0.01376	390	0.922	0.03079	413	0.5385	0.03125	413	8.88	0.24	405.33	405
[60, 40, 20]	32	adam	sigmoid	0.6229	0.01435	388	0.9225	0.02975	417	0.538	0.03214	415	7.7	0.21	406.67	406
[20, 100]	8	sgd	relu	0.6422	0.02219	450	0.9153	0.02922	388	0.5455	0.02882	386	15.75	0.5	408	407
[20]	8	sgd	relu	0.6394	0.02165	445	0.9157	0.03535	391	0.5448	0.03688	389	13.22	0.07	408.33	408
[80, 40, 60]	32	adam	sigmoid	0.625	0.01612	396	0.9222	0.03222	415	0.5379	0.03433	416	7.9	0.21	409	409
[20, 100]	8	Nadam	sigmoid	0.6213	0.01363	378	0.9248	0.03039	426	0.5352	0.03376	427	17.46	0.25	410.33	410
[20]	32	Nadam	tanh	0.6239	0.01234	392	0.923	0.02655	421	0.5374	0.02816	420	5.31	0.15	411	411
[100, 60, 40]	32	adam	sigmoid	0.6277	0.01446	406	0.9222	0.02707	414	0.5379	0.03303	417	9.03	0.17	412.33	412
[20, 100]	32	adam	tanh	0.6289	0.00977	411	0.9219	0.02811	412	0.5382	0.02883	414	5.3	0.22	412.33	413
[80]	16	sgd	relu	0.6411	0.01316	446	0.9169	0.02257	398	0.5441	0.02533	393	22.21	11.1	412.33	414
[60, 60]	16	sgd	relu	0.6419	0.01323	449	0.9167	0.02996	396	0.5443	0.02848	392	35.68	1.3	412.33	415
[60]	16	Nadam	sigmoid	0.6257	0.01185	398	0.9242	0.02963	424	0.5361	0.03062	424	13.37	0.11	415.33	416
[20, 20]	16	adam	sigmoid	0.627	0.01653	404	0.9238	0.03594	422	0.5364	0.03556	423	9.29	0.27	416.33	417
[40, 80, 80, 40]	32	Nadam	sigmoid	0.6287	0.01194	409	0.923	0.03019	420	0.5374	0.03308	421	7.48	0.29	416.67	418
[100, 60]	32	adam	sigmoid	0.6262	0.01125	401	0.9244	0.02845	425	0.5357	0.03309	426	8.92	0.4	417.33	419
[40]	16	adam	sigmoid	0.6268	0.01009	403	0.9258	0.021	429	0.5349	0.02106	428	10.33	0.39	420	420
[80, 80]	32	adam	sigmoid	0.6277	0.01677	405	0.9265	0.028	430	0.5338	0.03214	430	7.57	0.09	421.67	421
[80, 40, 60]	32	Nadam	sigmoid	0.6261	0.0122	399	0.9271	0.02786	433	0.533	0.0324	434	9.21	0.23	422	422
[100, 80, 60, 40, 20]	16	adam	sigmoid	0.6355	0.05422	439	0.9209	0.06214	410	0.5377	0.05876	418	16.14	0.27	422.33	423
[60, 20]	16	sgd	relu	0.6487	0.01088	461	0.9198	0.02115	403	0.5413	0.02312	403	11.05	0.14	422.33	424
[80, 40]	32	adam	sigmoid	0.6296	0.01363	416	0.9257	0.02846	428	0.5343	0.0338	429	7.47	0.13	424.33	425
[40, 80]	16	sgd	relu	0.6516	0.01583	464	0.9202	0.02547	406	0.5407	0.02148	404	9.92	0.23	424.67	426
[40]	16	Nadam	sigmoid	0.6288	0.01353	410	0.9272	0.03076	434	0.5331	0.03216	433	11.09	0.22	425.67	427
[80, 60, 80, 40]	32	adam	sigmoid	0.6296	0.01299	414	0.9266	0.0287	431	0.5333	0.03553	432	8.14	0.09	425.67	428
[40, 60, 80]	16	sgd	relu	0.6499	0.01315	462	0.9211	0.02569	411	0.5402	0.01984	407	10.39	0.5	426.67	429

[40]	16	sgd	relu	0.6464	0.01167	455	0.9224	0.02112	416	0.539	0.01593	411	8.58	0.15	427.33	430
[100, 60]	32	Nadam	sigmoid	0.6282	0.01295	408	0.9285	0.02819	439	0.5318	0.03103	439	10	0.26	428.67	431
[100, 80, 60, 40, 20]	32	Nadam	sigmoid	0.6349	0.01876	436	0.9249	0.03436	427	0.5358	0.03523	425	11	0.16	429.33	432
[20, 100]	16	adam	sigmoid	0.63	0.01324	421	0.9278	0.02742	436	0.5327	0.02821	436	9.56	0.32	431	433
[80, 80, 80, 80]	32	Nadam	sigmoid	0.6318	0.01537	430	0.9269	0.03165	432	0.5334	0.03209	431	9.44	0.05	431	434
[80, 60, 80, 40]	16	sgd	relu	0.6522	0.00878	466	0.9228	0.02413	419	0.5385	0.01885	412	11.52	0.06	432.33	435
[60]	16	sgd	relu	0.647	0.01499	456	0.9242	0.02204	423	0.5373	0.01763	422	10.05	0.15	433.67	436
[80, 40]	32	Nadam	sigmoid	0.6296	0.01278	415	0.9304	0.03096	443	0.5299	0.03409	444	8.51	0.14	434	437
[100, 60, 40]	32	Nadam	sigmoid	0.6311	0.01288	427	0.928	0.02683	437	0.5319	0.03428	438	10.37	0.11	434	438
[60, 40, 20]	32	Nadam	sigmoid	0.6307	0.01597	424	0.9294	0.0333	440	0.5308	0.03523	441	8.52	0.05	435	439
[20]	16	Nadam	sigmoid	0.6331	0.01318	431	0.9281	0.02598	438	0.5324	0.02772	437	9.49	0.43	435.33	440
[60, 20]	32	adam	sigmoid	0.6299	0.00777	420	0.9313	0.02609	445	0.5293	0.02814	446	7.09	0.07	437	441
[40, 60, 80]	32	adam	sigmoid	0.6308	0.01632	426	0.93	0.03626	442	0.5301	0.03826	443	6.5	0.26	437	442
[40, 40]	32	adam	sigmoid	0.6294	0.01196	412	0.932	0.02927	451	0.5285	0.03167	450	6.16	0.68	437.67	443
[60, 60]	32	Nadam	sigmoid	0.6298	0.01182	419	0.9316	0.02826	447	0.5285	0.03368	449	8.16	0.06	438.33	444
[60, 20]	32	Nadam	sigmoid	0.6301	0.01161	422	0.9319	0.02743	450	0.5289	0.02831	447	8.21	0.09	439.67	445
[100, 100]	32	Nadam	sigmoid	0.6302	0.01194	423	0.9318	0.02668	449	0.5282	0.03016	451	10.21	0.31	441	446
[20, 100]	16	Nadam	sigmoid	0.6296	0.01214	417	0.9347	0.02656	458	0.5258	0.02958	458	10.54	0.23	444.33	447
[20, 20]	16	Nadam	sigmoid	0.6308	0.01332	425	0.9334	0.0282	454	0.5268	0.03066	455	10.09	0.27	444.67	448
[20]	16	adam	sigmoid	0.636	0.01417	440	0.9316	0.03251	446	0.5289	0.03162	448	8.53	0.24	444.67	449
[80, 80]	32	Nadam	sigmoid	0.6317	0.01072	428	0.9333	0.02772	453	0.5269	0.03086	454	8.83	0.4	445	450
[60, 60]	32	adam	sigmoid	0.6317	0.01166	429	0.934	0.02579	456	0.5264	0.02915	456	7.25	0.08	447	451
[80, 80, 80, 80]	16	sgd	relu	0.6553	0.02188	472	0.9296	0.03049	441	0.531	0.03118	440	11.47	0.16	451	452
[100, 80, 60, 40, 20]	8	sgd	relu	0.6613	0.02128	483	0.9277	0.02122	435	0.5329	0.02465	435	24.22	0.81	451	453
[40, 80]	32	adam	sigmoid	0.634	0.01322	434	0.9361	0.0299	461	0.524	0.03124	461	5.9	0.21	452	454
[20]	16	sgd	relu	0.6545	0.01511	469	0.9317	0.02547	448	0.5294	0.02582	445	9.03	0.61	454	455
[80, 80, 40, 40]	16	sgd	relu	0.6597	0.01441	477	0.9307	0.02804	444	0.5305	0.02554	442	11.54	0.13	454.33	456
[40, 40]	32	Nadam	sigmoid	0.6342	0.01103	435	0.9379	0.02735	466	0.5227	0.02811	465	6.6	0.35	455.33	457
[40, 80]	32	Nadam	sigmoid	0.6351	0.01339	437	0.9388	0.03105	468	0.5215	0.03236	469	6.64	0.04	458	458
[40, 60, 80]	32	Nadam	sigmoid	0.6381	0.01574	444	0.9376	0.0317	464	0.5221	0.0362	467	6.94	0.15	458.33	459
[40, 40]	16	sgd	relu	0.6581	0.0159	474	0.9325	0.02164	452	0.5281	0.02997	452	28.08	0.66	459.33	460

[20, 100]	16	sgd	relu	0.6577	0.01127	473	0.934	0.02153	455	0.5269	0.02476	453	9.48	0.44	460.33	461
[20, 20]	32	Nadam	sigmoid	0.6415	0.00699	447	0.9401	0.0249	471	0.5205	0.02604	470	5.65	0.14	462.67	462
[40]	8	sgd	tanh	0.6583	0.00599	475	0.9372	0.01818	462	0.5235	0.01441	462	50.77	2.02	466.33	463
[40, 80, 80, 40]	8	sgd	tanh	0.6601	0.01334	480	0.9354	0.03055	460	0.5255	0.02891	459	63.8	14.27	466.33	464
[80, 80, 80, 80]	8	sgd	tanh	0.6629	0.01359	485	0.9342	0.02808	457	0.5264	0.03097	457	31.85	0.71	466.33	465
[60, 40, 20]	8	sgd	tanh	0.6607	0.02125	482	0.9351	0.02923	459	0.5249	0.03318	460	291.1	543.64	467	466
[20, 100]	32	adam	sigmoid	0.6434	0.01445	451	0.9412	0.02931	474	0.5188	0.03452	477	5.28	0.11	467.33	467
[20]	8	sgd	tanh	0.6585	0.01333	476	0.9377	0.01864	465	0.5229	0.02865	464	61.09	18.33	468.33	468
[20, 20]	8	sgd	tanh	0.6599	0.01479	479	0.9376	0.02526	463	0.5232	0.02801	463	930.63	1764.11	468.33	469
[100, 100]	8	sgd	tanh	0.6599	0.00714	478	0.938	0.02173	467	0.5224	0.02773	466	21.08	0.44	470.33	470
[20, 100]	32	Nadam	sigmoid	0.6437	0.01142	452	0.9428	0.02663	481	0.5176	0.02949	480	5.76	0.22	471	471
[20]	32	adam	sigmoid	0.6524	0.02212	467	0.9413	0.03752	475	0.5187	0.03919	478	4.75	0.1	473.33	472
[20, 20]	32	adam	sigmoid	0.645	0.00822	453	0.9447	0.02191	484	0.5157	0.02532	484	5.13	0.14	473.67	473
[60]	32	Nadam	sigmoid	0.6478	0.01149	457	0.9439	0.02744	483	0.5164	0.03065	483	7.66	0.09	474.33	474
[60, 60]	8	sgd	tanh	0.6603	0.00794	481	0.9404	0.0223	472	0.5202	0.02279	472	18.92	0.36	475	475
[100]	32	Nadam	sigmoid	0.6457	0.01073	454	0.9453	0.02754	485	0.515	0.03064	487	9.32	0.21	475.33	476
[100, 80, 60, 40, 20]	32	adam	sigmoid	0.6525	0.07079	468	0.9416	0.07998	478	0.5174	0.07518	482	9.9	0.19	476	477
[60, 40, 20]	16	sgd	relu	0.6652	0.01067	487	0.9399	0.0099	470	0.5204	0.02053	471	11.17	0.32	476	478
[20, 20]	16	sgd	relu	0.6679	0.01372	492	0.9395	0.02658	469	0.5216	0.02029	468	29.3	6.54	476.33	479
[60]	32	adam	sigmoid	0.6487	0.00786	460	0.9461	0.02195	488	0.5142	0.02671	488	6.75	0.08	478.67	480
[80, 80, 40, 40]	8	sgd	tanh	0.6672	0.0182	490	0.9404	0.01822	473	0.5196	0.03312	473	41.95	18.39	478.67	481
[60]	8	sgd	tanh	0.6637	0.00972	486	0.9416	0.02624	477	0.519	0.02661	476	63.08	9.76	479.67	482
[80]	32	adam	sigmoid	0.6485	0.01057	458	0.9478	0.02644	493	0.5121	0.03219	493	7.22	0.02	481.33	483
[40, 80, 80, 40]	16	sgd	relu	0.6672	0.01557	491	0.9416	0.02389	479	0.5195	0.01943	474	9.79	0.1	481.33	484
[100, 80, 60, 40, 20]	8	sgd	tanh	0.6689	0.0158	493	0.9415	0.02264	476	0.5193	0.02244	475	76.14	2.18	481.33	485
[100, 60]	8	sgd	tanh	0.6628	0.01307	484	0.9436	0.02237	482	0.5176	0.01345	481	20.55	0.4	482.33	486
[20]	32	Nadam	sigmoid	0.655	0.01823	471	0.9462	0.0325	489	0.514	0.0337	490	5.23	0.07	483.33	487
[80]	32	Nadam	sigmoid	0.6486	0.00938	459	0.9491	0.02386	496	0.5111	0.02687	496	8.05	0.09	483.67	488
[40]	32	adam	sigmoid	0.6519	0.0111	465	0.9483	0.02583	494	0.5117	0.028	494	5.74	0.25	484.33	489
[100]	32	adam	sigmoid	0.6503	0.01117	463	0.9491	0.02444	495	0.5109	0.02825	497	8.52	0.27	485	490
[80, 60, 80, 40]	8	sgd	tanh	0.6714	0.0138	498	0.9428	0.02404	480	0.5177	0.03021	479	32.04	0.7	485.67	491

23

[100, 100]	32	sgd	relu	0.6664	0.00963	488	0.9455	0.01268	486	0.5155	0.01682	485	7.21	0.33	486.33	492
[40, 80]	8	sgd	tanh	0.6667	0.01176	489	0.9463	0.02246	490	0.5142	0.02346	489	16.6	0.67	489.33	493
[60, 20]	8	sgd	tanh	0.6714	0.01434	495	0.9459	0.02888	487	0.5153	0.02236	486	17.98	0.33	489.33	494
[40]	32	Nadam	sigmoid	0.6549	0.01074	470	0.9513	0.02507	500	0.5089	0.02788	500	6.19	0.25	490	495
[80, 40, 60]	8	sgd	tanh	0.6714	0.01239	497	0.9467	0.01985	492	0.5139	0.02673	491	61.87	10.49	493.33	496
[40, 60, 80]	8	sgd	tanh	0.6718	0.01935	499	0.9465	0.02871	491	0.5137	0.03099	492	58.47	18.66	494	497
[100]	8	sgd	tanh	0.6714	0.00311	494	0.9513	0.01828	499	0.5093	0.02032	498	78.82	1.86	497	498
[20, 100]	8	sgd	tanh	0.6714	0.01479	496	0.9507	0.02733	498	0.5089	0.03776	499	14.3	0.38	497.67	499
[100, 60]	32	sgd	relu	0.6771	0.01206	502	0.9493	0.02624	497	0.5114	0.02889	495	6.98	0.35	498	500
[80]	8	sgd	tanh	0.6727	0.01547	500	0.9523	0.02782	502	0.5081	0.02977	502	70.37	6.13	501.33	501
[80, 40]	32	sgd	relu	0.6778	0.01209	503	0.9517	0.01216	501	0.5085	0.02586	501	5.96	0.09	501.67	502
[80, 80]	8	sgd	tanh	0.6797	0.0148	504	0.956	0.02676	504	0.5043	0.02661	504	19.22	0.36	504	503
[80, 40]	8	sgd	tanh	0.6821	0.01992	506	0.9553	0.02834	503	0.5052	0.02532	503	19.04	0.29	504	504
[20]	16	sgd	tanh	0.6758	0.01093	501	0.9587	0.01661	506	0.502	0.01185	506	11	0.14	504.33	505
[40, 60, 80]	16	sgd	tanh	0.6825	0.01409	507	0.9574	0.0206	505	0.5034	0.00798	505	29.92	2.54	505.67	506
[40]	16	sgd	tanh	0.6815	0.00922	505	0.9616	0.01779	509	0.4991	0.01207	508	12.6	0.63	507.33	507
[100]	32	sgd	relu	0.6833	0.01905	508	0.96	0.03058	507	0.5005	0.02579	507	7.04	0.12	507.33	508
[80]	32	sgd	relu	0.6849	0.0134	511	0.9616	0.02054	508	0.4989	0.02228	509	5.99	0.05	509.33	509
[40, 40]	8	sgd	tanh	0.6833	0.02143	509	0.9616	0.02928	510	0.4976	0.03604	512	16.44	0.61	510.33	510
[100, 60, 40]	16	sgd	tanh	0.6868	0.01318	514	0.9625	0.01903	512	0.4979	0.02209	511	57.25	12.89	512.33	511
[40]	32	sgd	relu	0.6874	0.01209	516	0.9623	0.01774	511	0.498	0.02049	510	4.64	0.02	512.33	512
[80, 40]	16	sgd	tanh	0.6838	0.00641	510	0.9628	0.01786	514	0.4974	0.0185	514	41.51	1.25	512.67	513
[20, 100]	16	sgd	tanh	0.6871	0.00931	515	0.9626	0.01706	513	0.4974	0.02408	513	42.38	3.25	513.67	514
[60]	32	sgd	relu	0.6875	0.009	517	0.9631	0.017	515	0.4974	0.0174	515	5.63	0.17	515.67	515
[40, 80]	16	sgd	tanh	0.6864	0.01116	513	0.9654	0.01779	519	0.4945	0.0217	518	37.43	8.84	516.67	516
[60]	16	sgd	tanh	0.6851	0.01528	512	0.9661	0.0196	521	0.4942	0.01594	520	11.35	0.49	517.67	517
[40, 40]	16	sgd	tanh	0.6894	0.01054	519	0.965	0.02311	517	0.495	0.02255	517	28.4	0.83	517.67	518
[40, 80, 80, 40]	16	sgd	tanh	0.6918	0.01437	526	0.9643	0.01945	516	0.4953	0.02765	516	33.84	0.48	519.33	519
[60, 20]	16	sgd	tanh	0.6904	0.00624	522	0.9658	0.01084	520	0.4943	0.01721	519	34.85	1.04	520.33	520
[80, 80]	16	sgd	tanh	0.6881	0.01604	518	0.9687	0.02254	523	0.4914	0.0221	523	43.32	8.99	521.33	521
[100, 60, 40]	8	sgd	tanh	0.695	0.05917	530	0.9651	0.05424	518	0.4914	0.07391	522	79.21	4.94	523.33	522

24

[20, 20]	16	sgd	tanh	0.69	0.01431	521	0.9694	0.01316	525	0.49	0.0275	525	26.06	0.31	523.67	523
[60, 40, 20]	16	sgd	tanh	0.691	0.00957	523	0.9694	0.01874	524	0.4906	0.0214	524	37.23	0.92	523.67	524
[100, 60]	16	sgd	tanh	0.6898	0.00715	520	0.9714	0.01829	527	0.4886	0.01797	526	62.2	16.73	524.33	525
[60, 20]	32	sgd	relu	0.697	0.03012	531	0.967	0.0261	522	0.4938	0.01067	521	5.78	0.05	524.67	526
[80, 60, 80, 40]	16	sgd	tanh	0.6917	0.00628	524	0.9713	0.01196	526	0.4885	0.01989	527	45.6	0.99	525.67	527
[80, 80, 80, 80]	16	sgd	tanh	0.6931	0.01486	527	0.9718	0.02123	528	0.4882	0.02346	528	53.18	14.85	527.67	528
[100, 100]	16	sgd	tanh	0.6946	0.00712	529	0.9725	0.01203	530	0.4874	0.0154	529	52.52	4.08	529.33	529
[80]	16	sgd	tanh	0.6932	0.01218	528	0.9729	0.0182	531	0.4871	0.01955	531	11.28	0.16	530	530
[100]	16	sgd	tanh	0.6917	0.01112	525	0.9753	0.0183	534	0.4845	0.017	533	17.32	9.06	530.67	531
[80, 80]	32	sgd	relu	0.7052	0.03882	536	0.9724	0.0365	529	0.4873	0.0339	530	5.94	0.14	531.67	532
[60, 60]	32	sgd	relu	0.6995	0.01372	533	0.9743	0.01616	532	0.4852	0.0264	532	5.84	0.09	532.33	533
[60, 60]	16	sgd	tanh	0.6983	0.01946	532	0.9752	0.01872	533	0.4842	0.02605	535	47.43	2.79	533.33	534
[80, 80, 40, 40]	16	sgd	tanh	0.7003	0.00858	534	0.9754	0.01987	535	0.4842	0.01988	534	45.38	1.48	534.33	535
[20]	32	sgd	relu	0.7059	0.01671	537	0.9827	0.0264	537	0.4771	0.01477	537	4.29	0.05	537	536
[20, 20]	32	sgd	relu	0.7041	0.01386	535	0.9847	0.01911	539	0.4745	0.02355	539	4.69	0.15	537.67	537
[40, 40]	32	sgd	relu	0.709	0.03003	541	0.9794	0.03178	536	0.4798	0.03087	536	4.91	0.03	537.67	538
[80, 40, 60]	16	sgd	tanh	0.7065	0.01344	538	0.9832	0.02093	538	0.4752	0.02873	538	44.42	0.72	538	539
[20, 100]	32	sgd	relu	0.7078	0.01284	539	0.9856	0.02303	540	0.4738	0.02107	540	4.85	0.2	539.67	540
[100, 80, 60, 40, 20]	16	sgd	tanh	0.7079	0.01144	540	0.9878	0.02109	542	0.4709	0.0257	542	56.49	0.32	541.33	541
[40, 80]	32	sgd	relu	0.712	0.03643	542	0.9865	0.04164	541	0.472	0.04522	541	4.97	0.12	541.33	542
[100, 60, 40]	32	sgd	relu	0.7168	0.03612	543	0.9891	0.04499	543	0.4695	0.04309	543	7.25	0.47	543	543
[40, 40]	32	sgd	tanh	0.7175	0.01684	544	0.9958	0.02547	544	0.4629	0.02049	544	18.04	0.11	544	544
[20]	32	sgd	tanh	0.7195	0.00939	545	0.9971	0.01514	546	0.4615	0.01231	545	15.1	0.12	545.33	545
[60]	32	sgd	tanh	0.7199	0.0128	546	0.997	0.01507	545	0.4613	0.01879	546	22.13	1.56	545.67	546
[40]	32	sgd	tanh	0.7221	0.01125	548	0.9981	0.01484	547	0.4603	0.01285	547	16.91	0.04	547.33	547
[100, 60]	32	sgd	tanh	0.7223	0.01173	549	0.9985	0.01269	548	0.46	0.00916	548	30.21	0.15	548.33	548
[80, 40]	32	sgd	tanh	0.7216	0.01413	547	1.0007	0.01706	550	0.4573	0.02034	550	26.01	0.11	549	549
[80]	32	sgd	tanh	0.726	0.01325	552	1.0001	0.0183	549	0.4582	0.01349	549	24.99	0.08	550	550
[100]	32	sgd	tanh	0.7233	0.01089	551	1.001	0.01977	551	0.4572	0.01583	551	29.03	0.21	551	551
[60, 60]	32	sgd	tanh	0.7229	0.02288	550	1.0011	0.02553	552	0.4566	0.02447	552	23.94	0.08	551.33	552
[100, 100]	32	sgd	tanh	0.7293	0.01098	553	1.0043	0.01547	554	0.4531	0.02943	555	30.44	0.73	554	553

[80, 40, 60]	32	sgd	relu	0.7324	0.02976	558	1.0019	0.0309	553	0.4558	0.02573	553	7.33	0.66	554.67	554
[20]	8	sgd	sigmoid	0.7315	0.01352	557	1.0046	0.01581	555	0.4533	0.01608	554	13.32	0.21	555.33	555
[60, 40, 20]	32	sgd	tanh	0.7315	0.0182	556	1.0066	0.01968	557	0.4511	0.01626	557	28.29	6.77	556.67	556
[80, 80, 40, 40]	32	sgd	tanh	0.7338	0.02935	559	1.005	0.03021	556	0.453	0.01853	556	33.71	6.71	557	557
[60, 20]	32	sgd	tanh	0.7359	0.01096	561	1.0099	0.00911	558	0.4474	0.01484	558	23.91	0.2	559	558
[40, 80]	32	sgd	tanh	0.7313	0.01976	555	1.0112	0.02286	563	0.4461	0.01791	563	18.32	0.22	560.33	559
[80, 80]	32	sgd	tanh	0.7361	0.01891	562	1.01	0.01601	560	0.4474	0.00767	559	26.08	0.14	560.33	560
[80]	8	sgd	sigmoid	0.7378	0.01205	564	1.01	0.01354	559	0.4472	0.01903	560	18.63	0.63	561	561
[60]	8	sgd	sigmoid	0.7376	0.01208	563	1.0105	0.01406	561	0.4467	0.01575	561	18.34	0.18	561.67	562
[20, 20]	32	sgd	tanh	0.7307	0.01703	554	1.0147	0.0185	567	0.442	0.0261	567	15.92	0.38	562.67	563
[80, 80, 80, 80]	32	sgd	tanh	0.7344	0.0274	560	1.0113	0.02507	564	0.4452	0.03651	564	31.29	5.33	562.67	564
[100]	8	sgd	sigmoid	0.7404	0.01534	566	1.0107	0.0158	562	0.4465	0.01861	562	20.24	0.41	563.33	565
[40, 60, 80]	32	sgd	relu	0.7382	0.03751	565	1.0116	0.03947	565	0.4451	0.03881	565	5.18	0.06	565	566
[40]	8	sgd	sigmoid	0.7419	0.0084	567	1.0133	0.01357	566	0.4438	0.01186	566	15.85	0.16	566.33	567
[100, 60, 40]	32	sgd	tanh	0.7528	0.02614	570	1.0219	0.02291	568	0.4338	0.02956	568	30.28	1.57	568.67	568
[20, 100]	32	sgd	tanh	0.7497	0.04192	569	1.0228	0.04393	569	0.433	0.04156	569	16.21	0.92	569	569
[80, 60, 80, 40]	32	sgd	tanh	0.7491	0.02883	568	1.0236	0.02995	571	0.4313	0.04312	571	28.65	0.16	570	570
[100, 80, 60, 40, 20]	32	sgd	tanh	0.7548	0.01311	571	1.0233	0.00847	570	0.4326	0.01536	570	33.15	0.95	570.33	571
[40, 60, 80]	32	sgd	tanh	0.7565	0.03157	572	1.0269	0.02719	572	0.4285	0.02413	572	19.94	0.74	572	572
[40, 80, 80, 40]	32	sgd	tanh	0.7613	0.03424	573	1.0346	0.034	573	0.4203	0.02662	573	20.16	0.07	573	573
[80, 40, 60]	32	sgd	tanh	0.7674	0.04056	575	1.0348	0.03625	574	0.4188	0.04557	574	27.08	0.12	574.33	574
[80, 80, 80, 80]	32	sgd	relu	0.7666	0.04024	574	1.0406	0.04724	576	0.4138	0.03224	575	6.77	0.45	575	575
[60, 40, 20]	32	sgd	relu	0.7729	0.04806	576	1.0394	0.04855	575	0.4136	0.05119	576	6.24	0.36	575.67	576
[40]	16	sgd	sigmoid	0.7973	0.01857	578	1.0629	0.02525	577	0.3881	0.01904	577	8.37	0.18	577.33	577
[100]	16	sgd	sigmoid	0.7971	0.01717	577	1.063	0.0236	578	0.3881	0.01593	578	11.03	0.15	577.67	578
[60]	16	sgd	sigmoid	0.7996	0.01653	579	1.0676	0.02409	579	0.3827	0.01976	579	9.59	0.07	579	579
[80]	16	sgd	sigmoid	0.8013	0.02273	580	1.068	0.02763	581	0.3822	0.02025	581	10.04	0.24	580.67	580
[100, 100]	8	sgd	sigmoid	0.806	0.02367	582	1.068	0.03112	580	0.3822	0.024	580	21.01	0.29	580.67	581
[20]	16	sgd	sigmoid	0.8054	0.0209	581	1.0732	0.02776	582	0.3761	0.02173	582	7.54	0.06	581.67	582
[100, 60]	8	sgd	sigmoid	0.8119	0.01754	583	1.0785	0.02586	583	0.3697	0.01916	583	21.09	0.37	583	583
[80, 80]	8	sgd	sigmoid	0.8162	0.02032	584	1.0819	0.02798	584	0.3658	0.02715	584	19.65	0.46	584	584

[80, 40]	8	sgd	sigmoid	0.822	0.02158	585	1.085	0.02989	585	0.3625	0.02148	585	19.78	0.31	585	585
[60, 20]	8	sgd	sigmoid	0.826	0.01716	586	1.0912	0.02517	586	0.355	0.02248	586	18.75	0.76	586	586
[40, 80]	8	sgd	sigmoid	0.8359	0.01798	587	1.1008	0.02519	587	0.3438	0.01577	587	16.79	0.51	587	587
[60, 60]	8	sgd	sigmoid	0.84	0.00764	589	1.106	0.01054	588	0.3366	0.02794	588	19.17	0.85	588.33	588
[100, 80, 60, 40, 20]	16	sgd	relu	0.8394	0.07138	588	1.1163	0.0878	590	0.3166	0.10966	591	12.87	0.22	589.67	589
[40, 40]	8	sgd	sigmoid	0.8441	0.029	591	1.1082	0.03361	589	0.3351	0.01884	589	16.57	0.52	589.67	590
[80, 60, 80, 40]	32	sgd	relu	0.8408	0.05357	590	1.1189	0.06249	591	0.3181	0.08655	590	7	0.85	590.33	591
[40, 80, 80, 40]	32	sgd	relu	0.8782	0.05717	592	1.1587	0.07077	592	0.27	0.07479	595	5.49	0.04	593	592
[20, 100]	8	sgd	sigmoid	0.8863	0.02304	595	1.1589	0.02946	593	0.273	0.01927	592	14.39	0.13	593.33	593
[40]	32	sgd	sigmoid	0.8854	0.02531	594	1.1594	0.03134	594	0.2722	0.01815	593	18.39	0.46	593.67	594
[100]	32	sgd	sigmoid	0.8837	0.0272	593	1.1602	0.03311	595	0.2714	0.01815	594	27.73	5.73	594	595
[80]	32	sgd	sigmoid	0.887	0.0268	596	1.1638	0.03316	596	0.2669	0.01606	596	21.43	4.56	596	596
[60]	32	sgd	sigmoid	0.8883	0.02248	597	1.1655	0.02863	597	0.2646	0.01457	597	25.13	1.4	597	597
[20]	32	sgd	sigmoid	0.9045	0.02567	598	1.1825	0.03014	598	0.2429	0.01446	598	15.05	0.74	598	598
[20, 20]	8	sgd	sigmoid	0.911	0.0526	599	1.1853	0.06134	599	0.2389	0.05232	599	13.7	0.11	599	599
[80, 80, 40, 40]	32	sgd	relu	0.9265	0.07886	600	1.2133	0.08785	600	0.1973	0.11873	600	6.66	0.12	600	600
[100, 100]	16	sgd	sigmoid	0.9866	0.02221	601	1.2738	0.02212	601	0.1214	0.01159	601	11.4	0.19	601	601
[100, 60]	16	sgd	sigmoid	0.9881	0.02257	602	1.2749	0.0197	602	0.1197	0.01581	602	11.79	0.44	602	602
[80, 80]	16	sgd	sigmoid	1.0015	0.02788	603	1.2906	0.02633	603	0.0983	0.01124	603	10.45	0.23	603	603
[80, 40]	16	sgd	sigmoid	1.0085	0.02514	604	1.3008	0.02691	604	0.0839	0.01962	604	10.68	0.29	604	604
[60, 20]	16	sgd	sigmoid	1.0148	0.03772	605	1.303	0.04004	605	0.0807	0.03038	605	10.09	0.24	605	605
[60, 60]	16	sgd	sigmoid	1.0203	0.0326	606	1.3129	0.03129	606	0.0669	0.00974	606	10.01	0.26	606	606
[40, 80]	16	sgd	sigmoid	1.0253	0.03064	607	1.318	0.03049	607	0.0597	0.00756	607	8.87	0.24	607	607
[40, 40]	16	sgd	sigmoid	1.0349	0.02732	608	1.3282	0.02626	608	0.045	0.0105	608	8.58	0.17	608	608
[20, 100]	16	sgd	sigmoid	1.0448	0.02882	609	1.3398	0.02865	609	0.0282	0.00865	609	8.22	0.18	609	609
[20, 20]	16	sgd	sigmoid	1.0474	0.02685	610	1.3417	0.02561	610	0.0255	0.00855	610	8.29	0.05	610	610
[100, 60]	32	sgd	sigmoid	1.0479	0.02782	611	1.3422	0.02819	611	0.0248	0.00567	611	27.26	1.01	611	611
[100, 100]	32	sgd	sigmoid	1.0494	0.02905	612	1.3446	0.02758	612	0.0213	0.00684	612	29.06	1.64	612	612
[80, 40]	32	sgd	sigmoid	1.0533	0.02763	613	1.3477	0.02641	613	0.0168	0.00176	613	22.51	8.12	613	613
[60, 60]	32	sgd	sigmoid	1.0553	0.02936	616	1.3496	0.02786	614	0.0141	0.00328	614	29.06	6.38	614.67	614
[60, 20]	32	sgd	sigmoid	1.0547	0.02846	615	1.3497	0.0274	615	0.0138	0.00258	615	23.22	0.52	615	615

[80, 80]	32	sgd	sigmoid	1.0546	0.02793	614	1.3498	0.02606	616	0.0135	0.00227	616	22.07	6.96	615.33	616
[40, 80]	32	sgd	sigmoid	1.0592	0.02961	617	1.3551	0.02882	617	0.0059	0.00465	617	17.58	0.79	617	617
[40, 40]	32	sgd	sigmoid	1.0606	0.02723	619	1.3562	0.027	618	0.0043	0.00403	618	18.88	0.13	618.33	618
[100, 80, 60, 40, 20]	32	sgd	relu	1.0597	0.0325	618	1.3563	0.02975	619	0.0043	0.00528	619	7.82	0.32	618.67	619
[20, 20]	32	sgd	sigmoid	1.063	0.02779	620	1.3591	0.02603	620	0	0.00334	620	19.16	2.56	620	620
[20, 100]	32	sgd	sigmoid	1.0643	0.02486	621	1.3602	0.02343	621	-0.0016	0.00873	621	16.08	0.53	621	621
[40, 60, 80]	32	sgd	sigmoid	1.0661	0.02833	625	1.3612	0.02628	623	-0.0029	0.0021	622	21.62	0.7	623.33	622
[100, 60, 40]	32	sgd	sigmoid	1.0664	0.02907	629	1.3612	0.02683	622	-0.0029	0.00064	623	28.33	1.32	624.67	623
[60, 40, 20]	32	sgd	sigmoid	1.0663	0.02797	628	1.3621	0.0268	624	-0.0044	0.00218	624	26.57	0.86	625.33	624
[40, 80, 80, 40]	32	sgd	sigmoid	1.0657	0.02857	622	1.3626	0.02768	628	-0.005	0.003	628	23.67	1.63	626	625
[80, 80, 80, 80]	16	sgd	sigmoid	1.0662	0.02883	626	1.3625	0.0268	627	-0.0048	0.00236	626	46.79	0.91	626.33	626
[60, 40, 20]	16	sgd	sigmoid	1.0659	0.0289	623	1.3626	0.02766	629	-0.0051	0.00275	629	10.63	0.41	627	627
[80, 80, 40, 40]	32	sgd	sigmoid	1.0668	0.02811	634	1.3625	0.02679	625	-0.0048	0.0017	625	28.09	0.57	628	628
[80, 80, 40, 40]	16	sgd	sigmoid	1.0668	0.0274	633	1.3625	0.02621	626	-0.0049	0.00334	627	46.5	0.79	628.67	629
[80, 40, 60]	32	sgd	sigmoid	1.0663	0.02814	627	1.3629	0.02486	632	-0.0055	0.00358	632	26.09	0.85	630.33	630
[60, 40, 20]	8	sgd	sigmoid	1.0661	0.0291	624	1.3632	0.02815	635	-0.0059	0.00267	635	18.81	0.6	631.33	631
[100, 80, 60, 40, 20]	32	sgd	sigmoid	1.0666	0.02773	632	1.3629	0.02573	631	-0.0055	0.0031	631	32.87	1.19	631.33	632
[80, 80, 80, 80]	32	sgd	sigmoid	1.0665	0.02815	630	1.3634	0.02702	637	-0.0063	0.00493	638	27.67	0.39	635	633
[100, 80, 60, 40, 20]	16	sgd	sigmoid	1.068	0.02598	639	1.3629	0.02444	633	-0.0056	0.00526	633	56.78	3.37	635	634
[80, 60, 80, 40]	16	sgd	sigmoid	1.0666	0.02799	631	1.3635	0.02727	638	-0.0063	0.00346	637	46.98	2.07	635.33	635
[80, 40, 60]	16	sgd	sigmoid	1.0676	0.02926	638	1.3631	0.02895	634	-0.0058	0.00616	634	43.89	3.28	635.33	636
[40, 60, 80]	8	sgd	sigmoid	1.0693	0.02636	646	1.3627	0.02408	630	-0.0053	0.00702	630	17.12	0.79	635.33	637
[40, 80, 80, 40]	16	sgd	sigmoid	1.0681	0.02843	641	1.3634	0.02638	636	-0.0063	0.00119	636	33.57	0.1	637.67	638
[100, 60, 40]	8	sgd	sigmoid	1.0669	0.02951	635	1.3636	0.02884	640	-0.0065	0.00624	640	22.02	0.21	638.33	639
[100, 80, 60, 40, 20]	8	sgd	sigmoid	1.0681	0.02743	640	1.3635	0.02784	639	-0.0064	0.00519	639	22.78	0.84	639.33	640
[100, 60, 40]	16	sgd	sigmoid	1.0674	0.0277	637	1.3641	0.02653	641	-0.0073	0.00495	641	16.93	9.42	639.67	641
[80, 60, 80, 40]	8	sgd	sigmoid	1.067	0.02931	636	1.3653	0.02938	646	-0.009	0.00673	645	21.16	0.93	642.33	642
[80, 80, 40, 40]	8	sgd	sigmoid	1.0685	0.02931	642	1.3645	0.02723	643	-0.0079	0.00614	643	20.79	0.69	642.67	643
[80, 60, 80, 40]	32	sgd	sigmoid	1.0687	0.02684	644	1.3642	0.02513	642	-0.0075	0.00669	642	29.46	1.4	642.67	644
[40, 80, 80, 40]	8	sgd	sigmoid	1.0685	0.02934	643	1.3652	0.02917	645	-0.009	0.00525	644	17.4	0.51	644	645
[80, 40, 60]	8	sgd	sigmoid	1.07	0.02553	647	1.3652	0.02041	644	-0.0091	0.0109	646	20.55	0.21	645.67	646

[40, 60, 80]	16	sgd	sigmoid	1.0691	0.02605	645	1.3662	0.02485	647	-0.0105	0.00703	647	9.41	0.22	646.33	647
[80, 80, 80, 80]	8	sgd	sigmoid	1.0717	0.02184	648	1.3689	0.01625	648	-0.0148	0.0174	648	20.4	0.79	648	648