

Table 1: Linear regions for neural networks with higher dimensional inputs

Sample	1	2	3	4	5	6	7	8	9	10
Linear regions	17	16	15	17	16	17	17	17	17	13
Compute time (s)	97.18	29.97	27.64	87.27	32.42	39.23	42.86	29.08	37.42	42.28

(a) Architecture [784, 4, 1]

Sample	1	2	3	4	5	6	7	8	9	10
Linear regions	65	57	63	65	49	65	65	57	49	65
Compute time (s)	131.08	39.36	21.44	26.52	188.00	23.83	24.72	34.64	186.27	26.56

(b) Architecture [256, 6, 1]

Sample	1	2	3	4	5	6	7	8	9	10
Linear regions	249	241	257	249	257	257	253	225	257	257
Compute time (s)	46.45	84.31	261.90	39.265	67.36	65.33	33.01	647.55	41.54	71.59

(c) Architecture [100, 4, 1]

Table 2: Monomials

Sample	1	2	3	4	5	6	7	8	9	10
Number of monomials	186	29	28	24	39	36	36	49	31	48

(a) Architecture [2, 4, 2, 1]

Sample	1	2	3	4	5	6	7	8	9	10
Number of monomials	19	17	18	15	20	18	15	16	17	23

(b) Architecture [2, 6, 1]

Table 3: Lower bounds and true values of Hoffman constants

Sample	1	2	3	4	5	6	7	8
Lower bounds H_L	81.3438	10.6004	8.6861	8.7282	20.0658	24.9752	3.9183	8.7282
True values H	81.3438	19.7783	18.0775	81.3438	75.0585	24.9752	24.9752	75.0585

(a) $m_p = 5$, $m_q = 4$ and $n = 6$

Sample	1	2	3	4	5	6	7	8
Lower bounds H_L	10.1343	18.2276	17.5099	21.7090	9.2464	6.3739	67.6192	28.2099
True values H	55.5774	66.3106	65.5638	33.7564	57.6328	68.3659	67.6192	28.2099

(b) $m_p = 5$, $m_q = 4$ and $n = 8$

Sample	1	2	3	4	5	6	7	8
Lower bounds H_L	13.8601	24.9653	24.9653	8.6186	16.1233	29.3200	29.3200	10.1250
True values H	31.4848	36.6182	36.6182	8.6186	16.1233	29.3200	29.3200	16.0180

(c) $m_p = 4$, $m_q = 4$ and $n = 12$

Sample	1	2	3	4	5	6	7	8
Lower bounds H_L	12.2125	7.5832	8.2773	9.8434	21.3139	9.9999	6.5074	10.1393
True values H	12.2125	13.9219	8.2773	9.8434	21.3139	21.8515	16.3025	15.7649

(d) $m_p = 4$, $m_q = 4$ and $n = 9$