

Analysis: For both car dataset and pen dataset, the accuracy is the lowest if there is no hidden layer. Also, adding the first five neuron results in the most dramatically rise of accuracy rate.

For the pen data set, we get the peak result when there are 30 neurons in hidden layer. We can also observe a very slight decrease of accuracy rate when we add more than 30 neurons. But overall, adding more neurons doesn't affect the result. The accuracy is stabilized around 90%.

For the car data set, we get the peak result when there are 20-25 neurons in the hidden layer. We also observe a light decrease of accuracy rate after the peak, but the variation is larger than that of pen data. Overall, the accuracy is stabilized around 84-85%.

neuron# of hidden layer	pen avg	pen max	car avg	car max	pen std	car std
0	0	0	0.697644	0.697644	0	0
5	0.842138	0.853345	0.859555	0.867801	0.007948	0.008107
10	0.888165	0.903373	0.839398	0.859948	0.010121	0.027405
15	0.897198	0.905089	0.840969	0.860602	0.008398	0.011478
20	0.9008	0.905946	0.842147	0.875	0.004725	0.026771
25	0.901658	0.906232	0.857592	0.871073	0.003661	0.008367
30	0.904288	0.907376	0.844764	0.860602	0.002239	0.015006
35	0.901487	0.905946	0.830236	0.847513	0.003307	0.017709
40	0.9008	0.903659	0.822513	0.849476	0.003047	0.015583



