



Exercise 5 report : Neural Networks and Support Vector Machines

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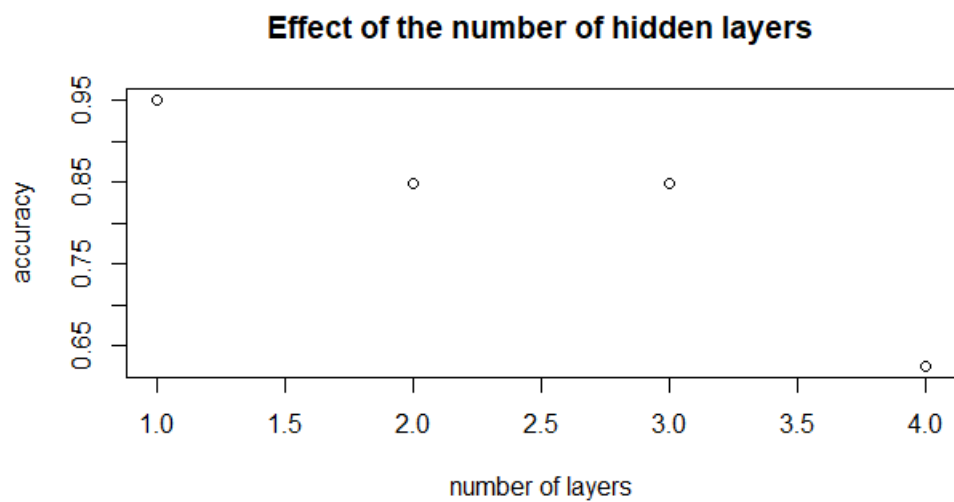
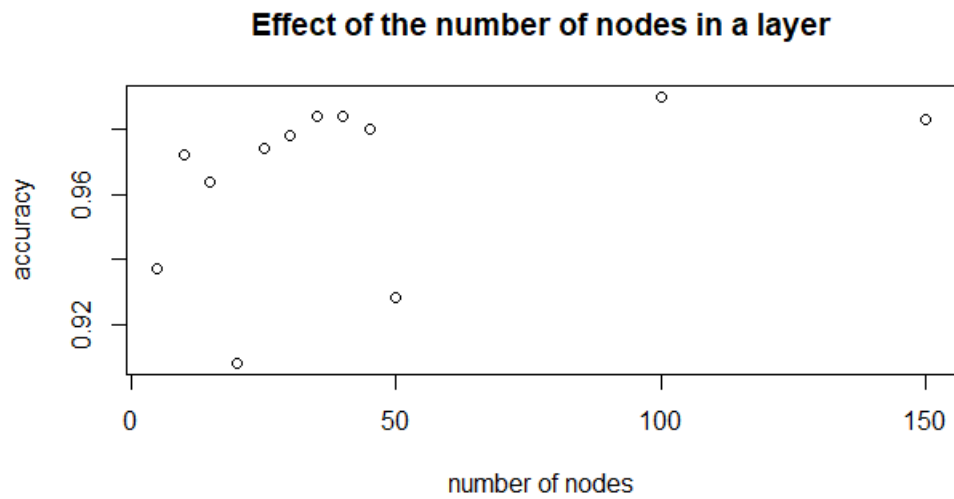
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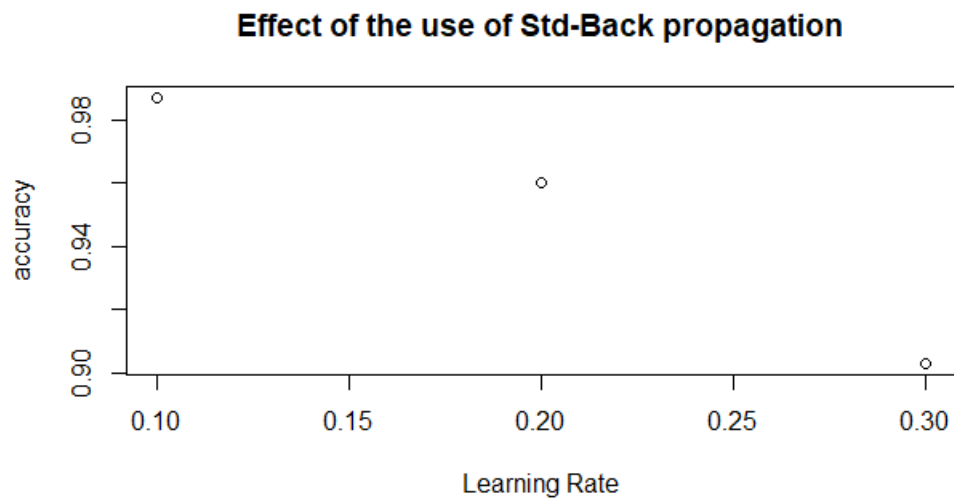
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1 Neural Networks:

After doing the questions 5.1.1, 5.1.2 and 5.1.3, the experimenting with the parameters gave us :



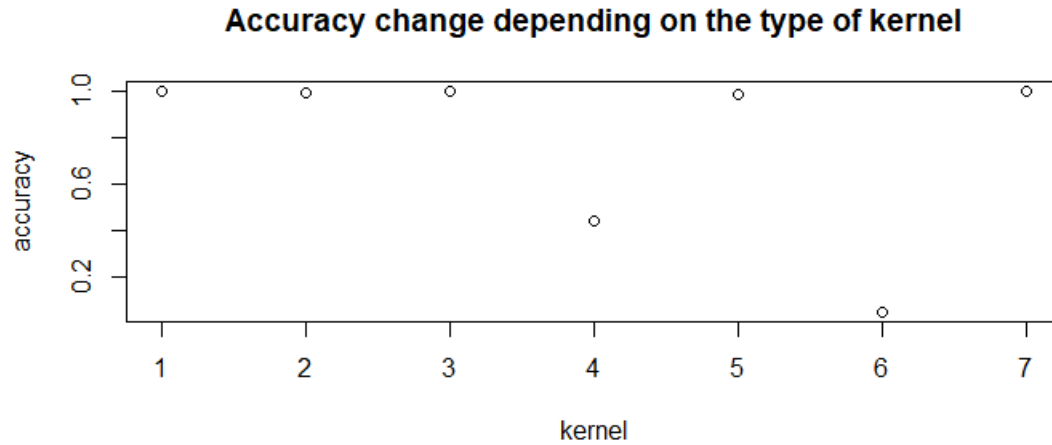


We can see that in our case the ideal number of layer should be one and the ideal number of nodes should be around 30.

The learning rate was a bit tricky to compute since at some point we were getting errors while comparing values due to a mismatch of the factors levels, so this is why we could not get past 0.3. Still, we can see that the quicker we get the less accurate we are.

2 SVM:

Using different Kernel type we can see that our accuracy is changing a lot depending on which one we use :



With the number corresponding to :

- 1 *vanilladot*
- 2 *rbfdot*
- 3 *polydot*
- 4 *tanhdot*
- 5 *laplacedot*
- 6 *besseldot*
- 7 *anovadot*

In our case, *tanhdot* and *besseldot* are not really appropriate but the rest of them are good to use.