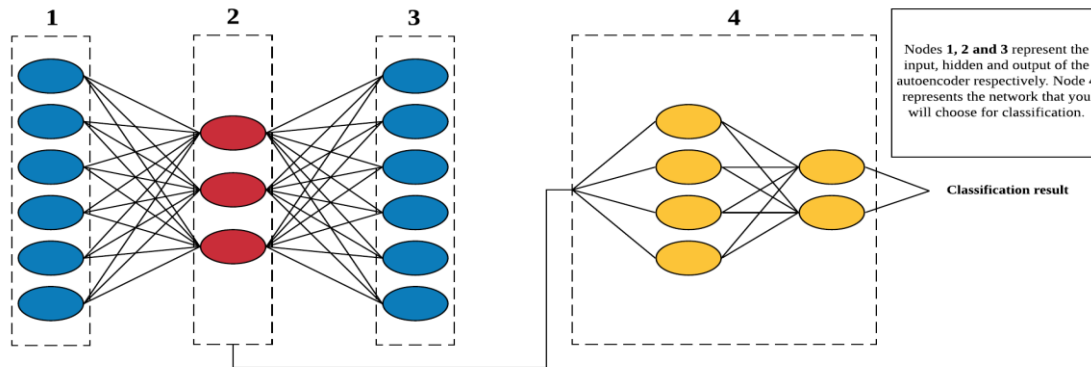


# Ridge-i assignment

## Supervised and unsupervised training

### Basic Architecture



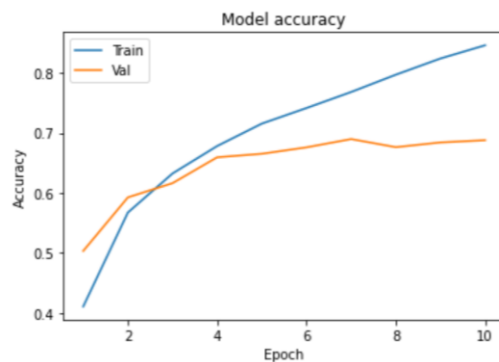
Data = Cifar 10 datasets

Consisted: 50,000 training and 10,000 testing. Because I was told to use specific label only 50% training, so to avoid the imbalance data. I decided to use 50% 50,000 training set data so it is become 25,000

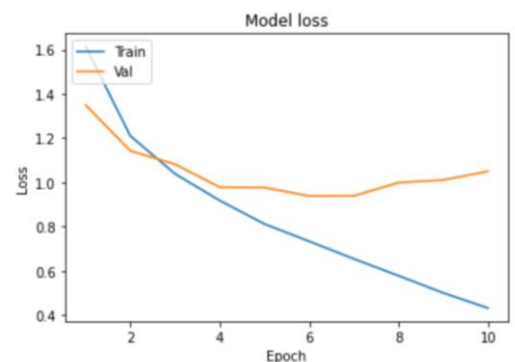
Environment= Anaconda, with Jupyter notebook, I applied tensorflow keras dataset

No Model fitting Training Validation accuracy

1. Batch size = 32  
Epoch = 10  
Verbose = 1



Training Validation Loss

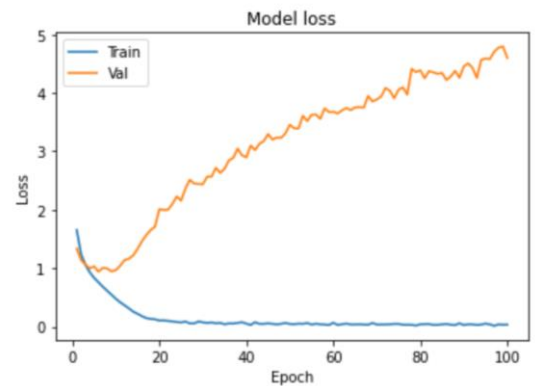
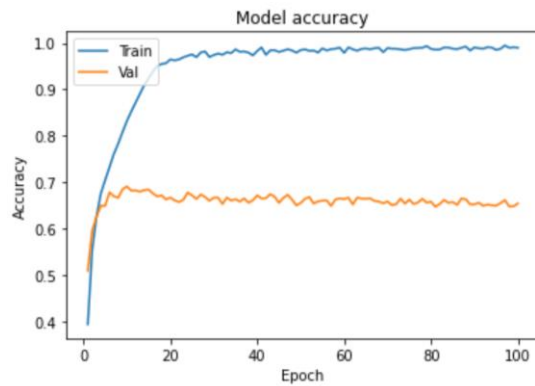


# Ridge-i assignment

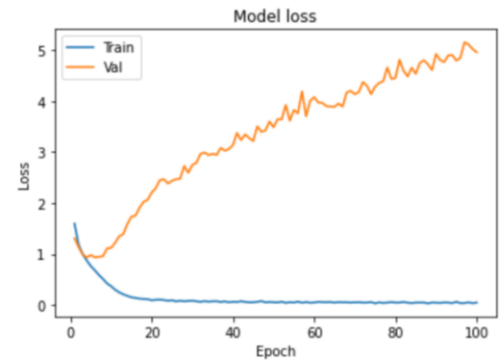
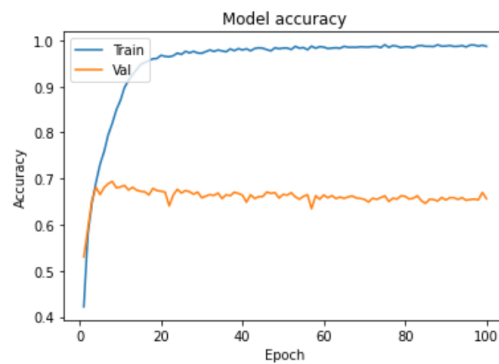
## Supervised and unsupervised training

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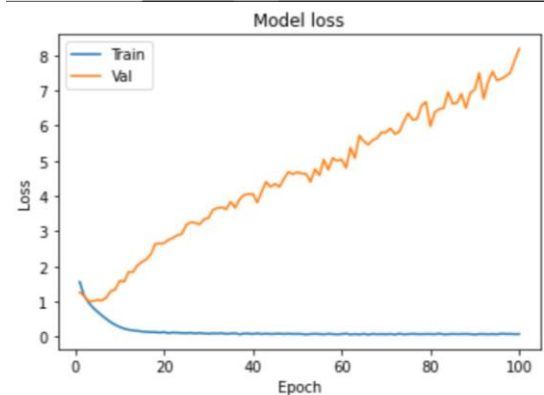
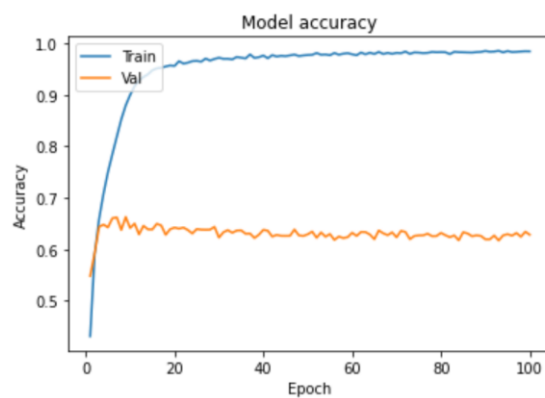
2. Batch size =  
64  
Epoch =100  
Verbose=1



3. Batch size =  
32  
Epoch =100  
Verbose=1



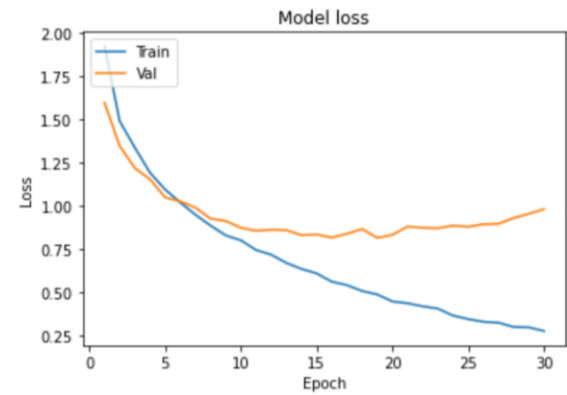
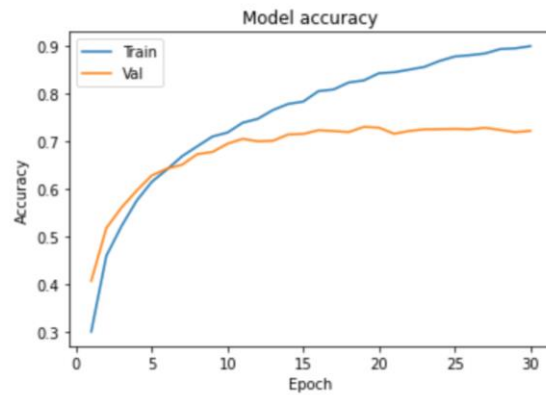
4. Batch size =  
10  
Epoch =100  
Verbose=1



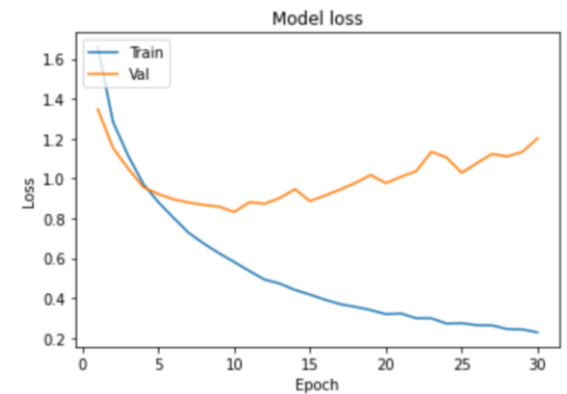
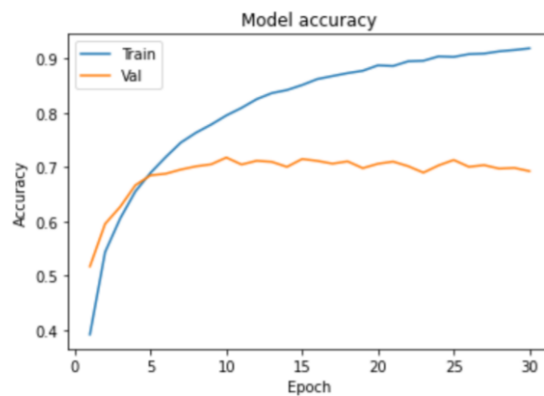
# Ridge-i assignment

## Supervised and unsupervised training

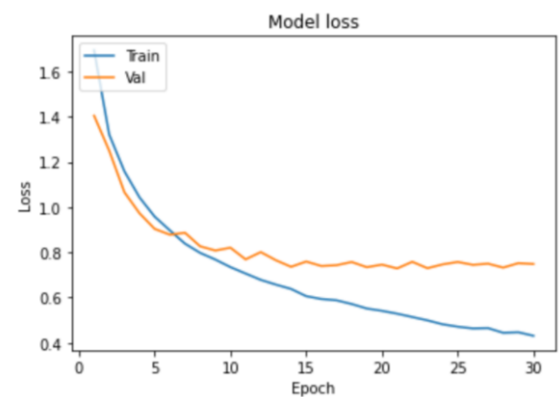
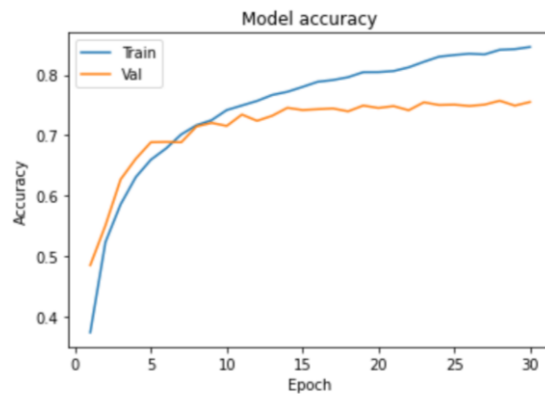
5. Batch size = 256  
Epoch = 30  
Verbose=1



6. Batch size = 32  
Epoch = 30  
Verbose=1



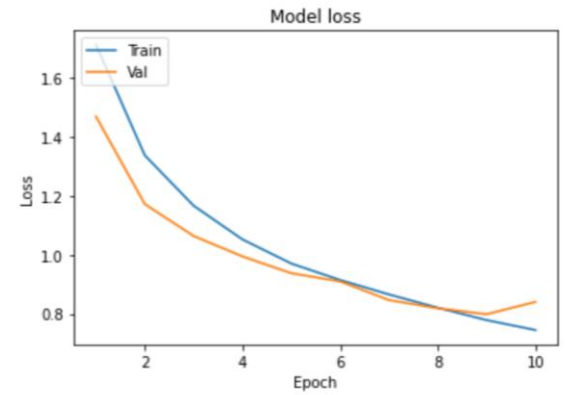
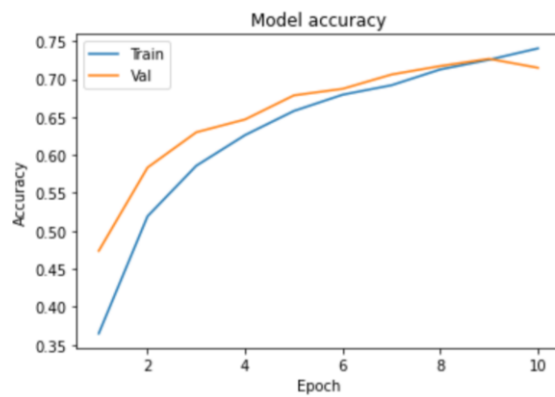
7. Batch size = 32  
Epoch = 30  
Verbose=1  
Filtering 96,96,192



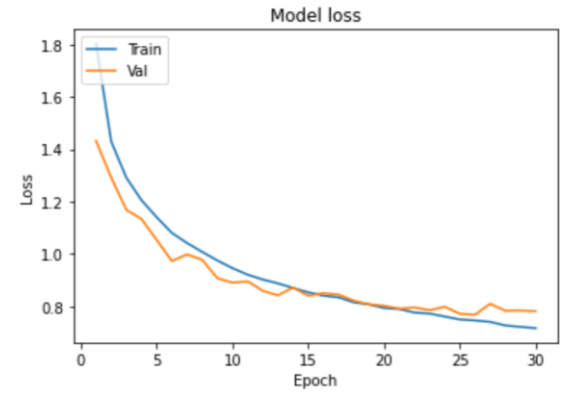
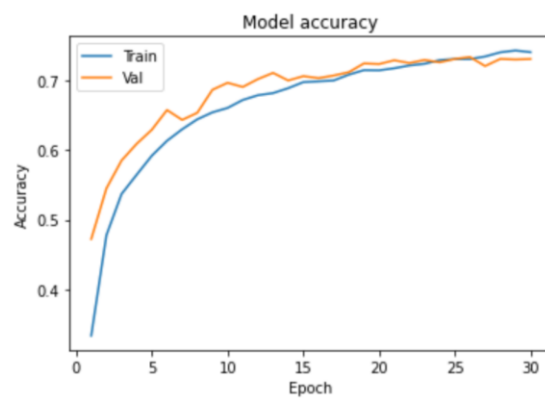
# Ridge-i assignment

## Supervised and unsupervised training

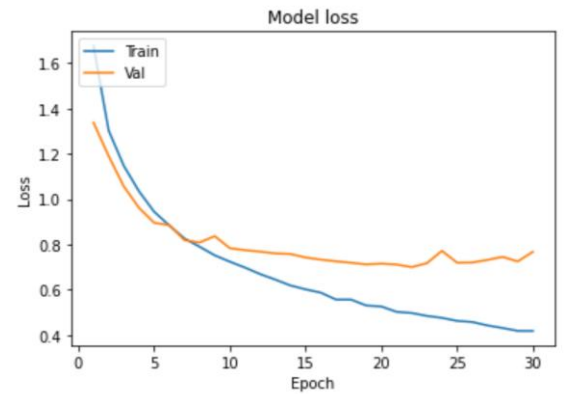
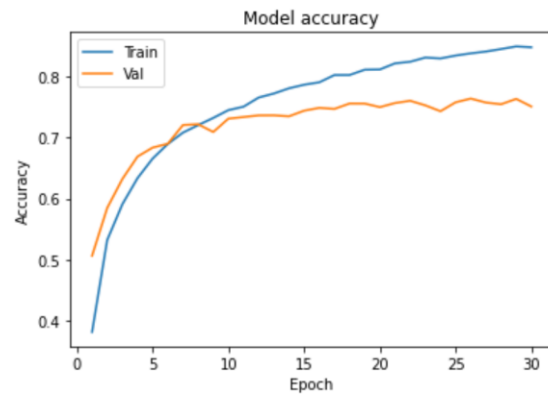
8. Batch size  
=32  
Epoch = 10  
Verbose=1  
Filtering  
96,96,192



9. Batch size  
=32  
Epoch = 30  
Verbose=1  
Filtering  
64,32,64



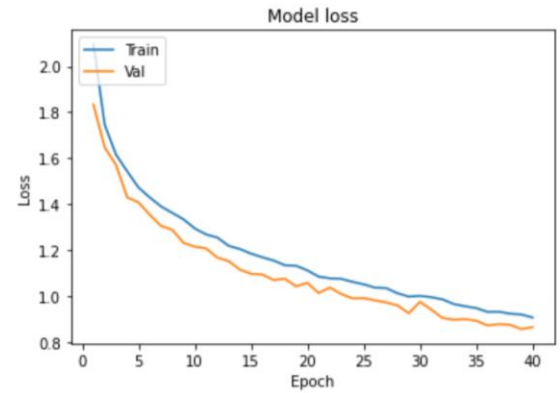
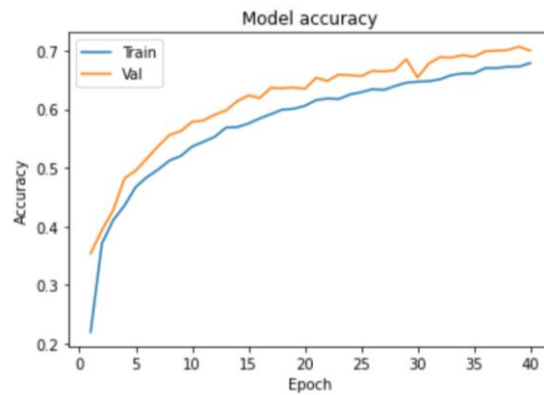
10. Batch size  
=32  
Epoch = 30  
Verbose=1  
Filtering  
64,92,192



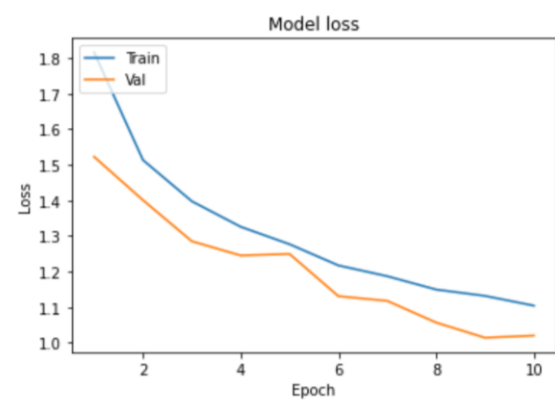
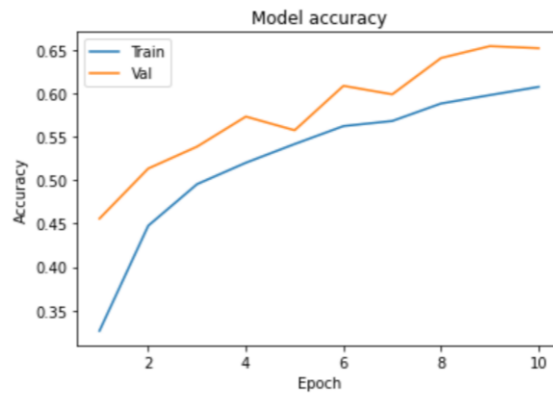
# Ridge-i assignment

## Supervised and unsupervised training

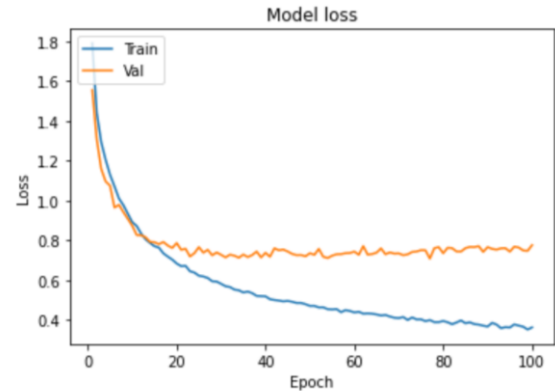
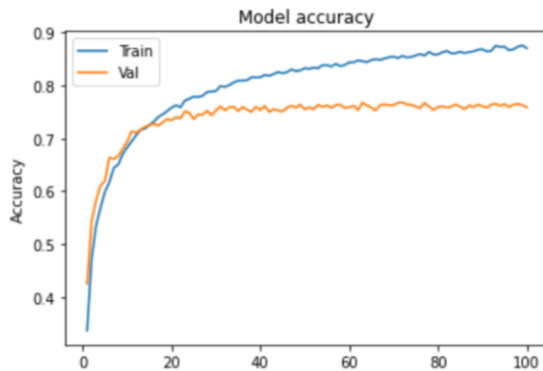
11. Batch size  
=502  
Epoch = 40  
Verbose=1  
Filtering  
64,92,192



12 Epoch = 10  
Verbose=1  
Filtering  
64,32,64,  
dense unit  
128



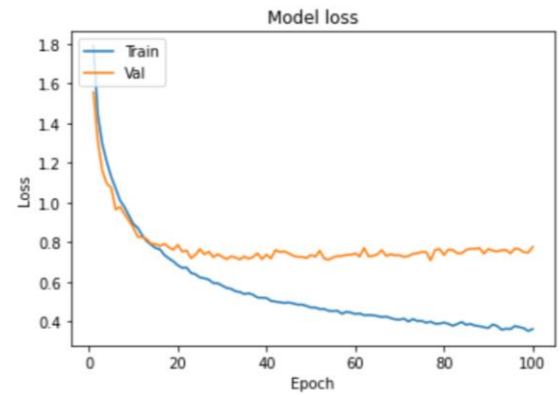
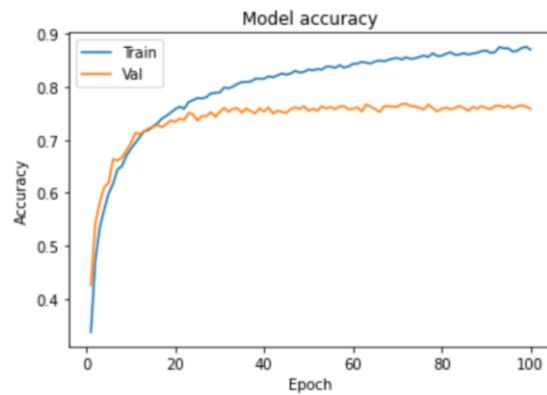
13 Batch size  
=64  
Epoch = 100  
Verbose=1  
Filtering  
64, 64, 64  
dense 128



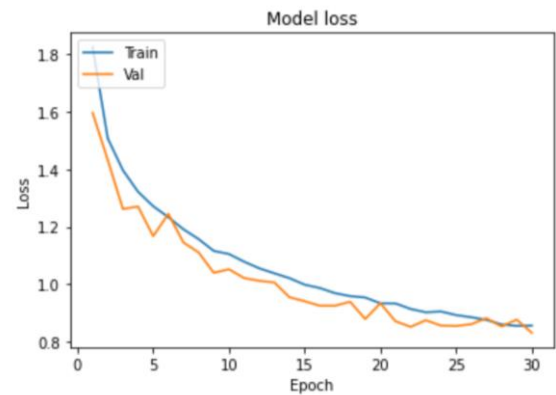
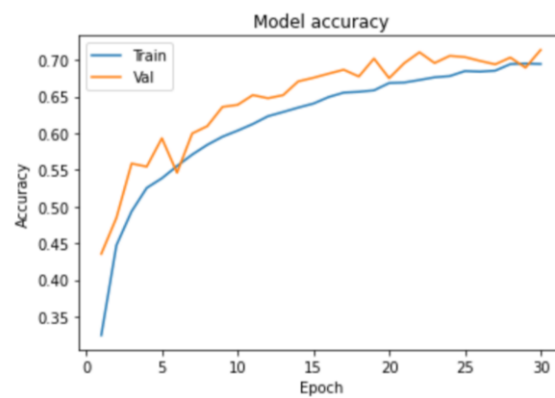
# Ridge-i assignment

## Supervised and unsupervised training

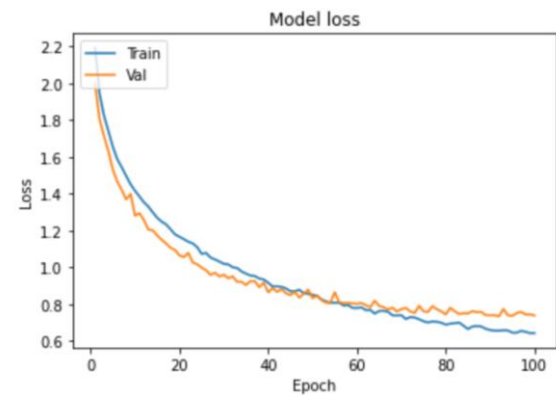
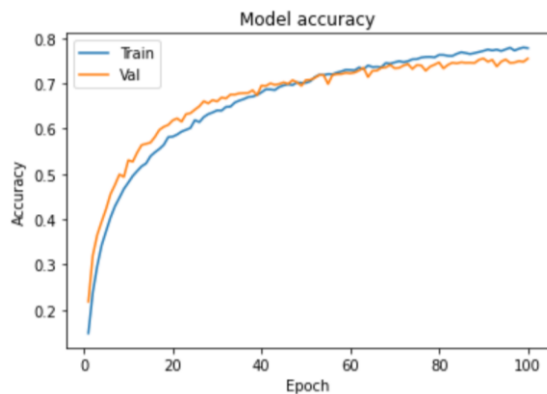
14 Batch size  
=64  
Epoch = 100  
Verbose=1  
Filtering  
64, 64, 64  
dense 128



15 Epoch = 30  
Verbose=1  
Filtering  
64, 32, 64  
dense 128



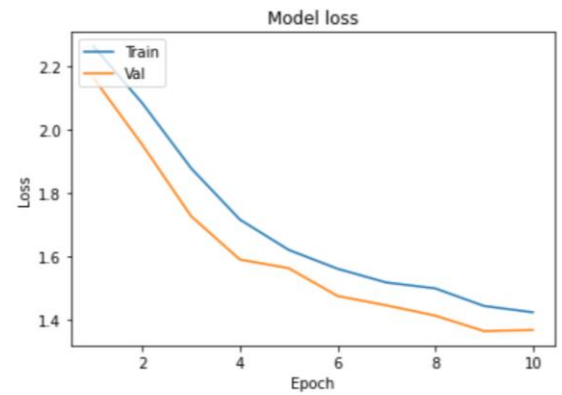
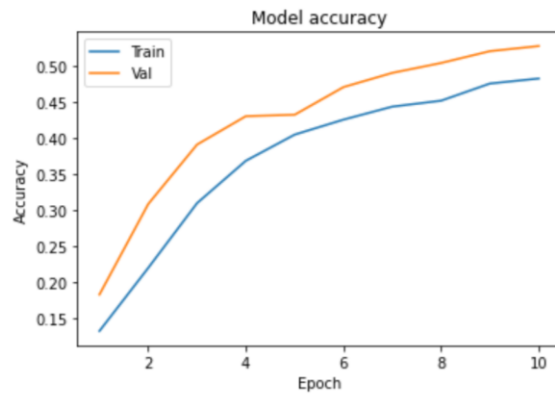
16 Batch size  
=512  
Epoch = 100  
Verbose=1  
Filtering  
64, 32, 64, 64,  
64 dense 32



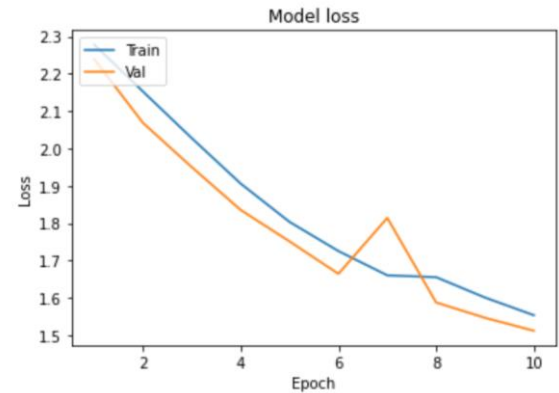
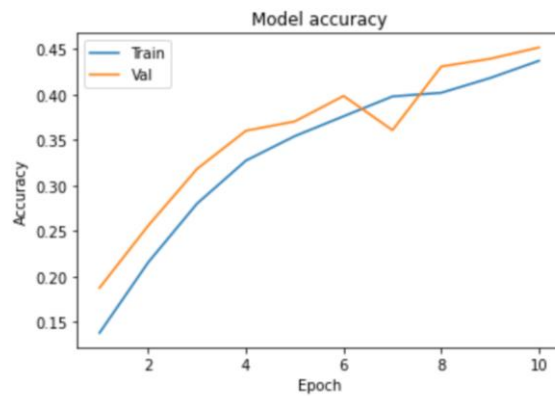
# Ridge-i assignment

## Supervised and unsupervised training

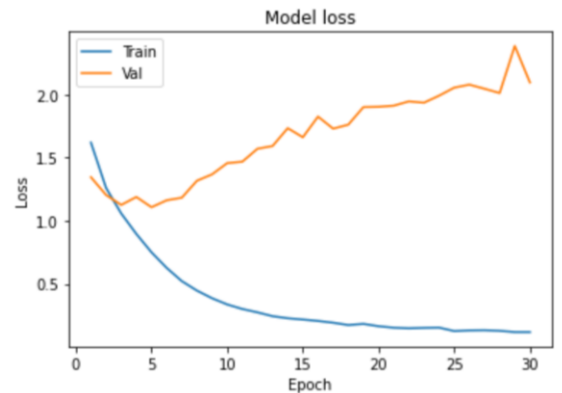
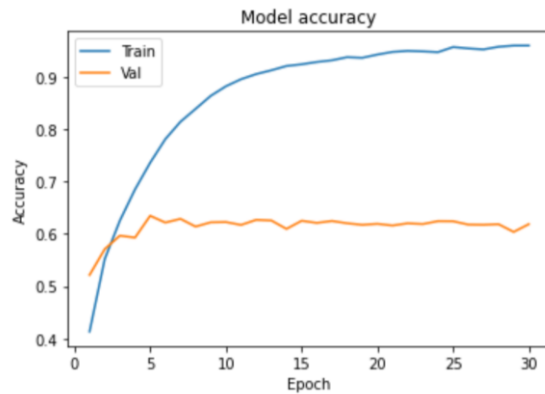
17 Batch size  
=1024  
Epoch = 10  
Verbose=1  
Filtering  
64, 32, 64,  
dense 32



18 Batch size  
=2048  
Epoch = 10  
Verbose=1  
Filtering  
64, 32, 64,  
dense 32



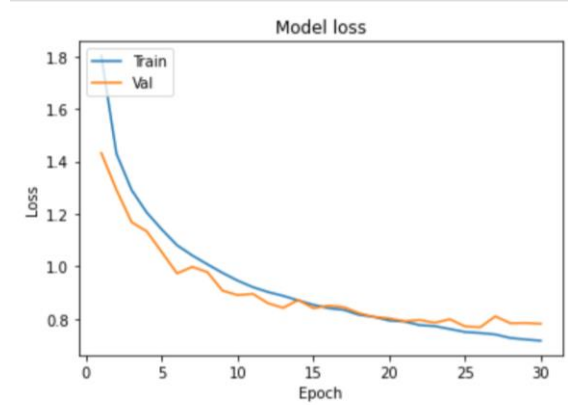
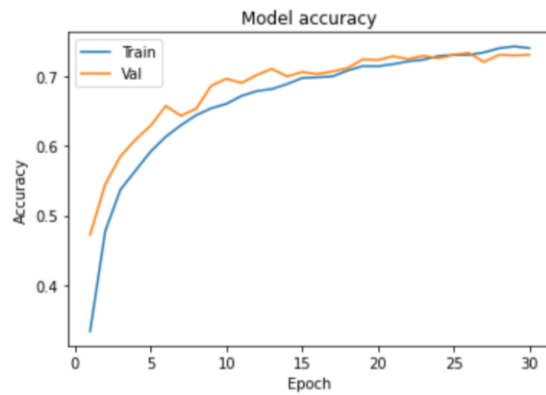
19 Batch size  
=32  
Epoch = 30  
Verbose=1  
Filtering  
64, 32, 64,  
dense 64, no  
max pooling  
in this case



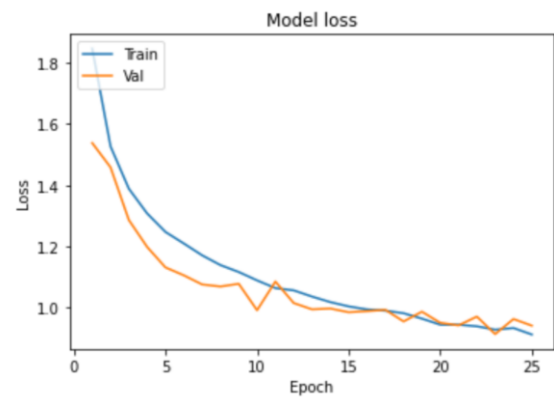
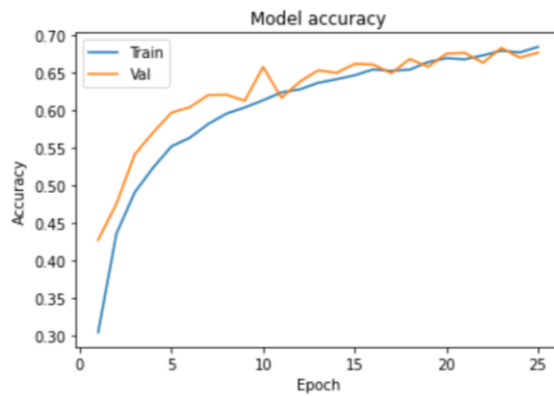
# Ridge-i assignment

## Supervised and unsupervised training

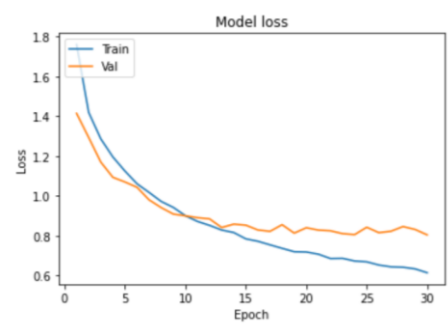
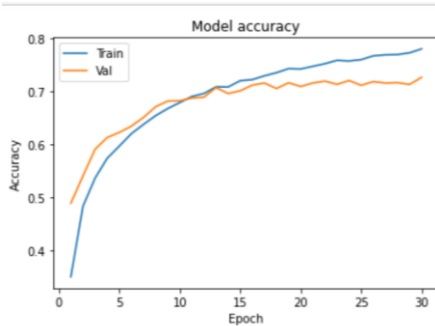
20 Batch size  
=32  
Epoch = 30  
Verbose=1  
Filtering  
64, 32, 64,  
dense 64



21 Batch size  
=10  
Epoch = 25  
Verbose=1  
Filtering  
64, 32,  
64,,64,64  
dense 32



22 Batch size  
=32  
Epoch =30  
Verbose=1  
Filtering  
64, 32, 64,  
dense 64

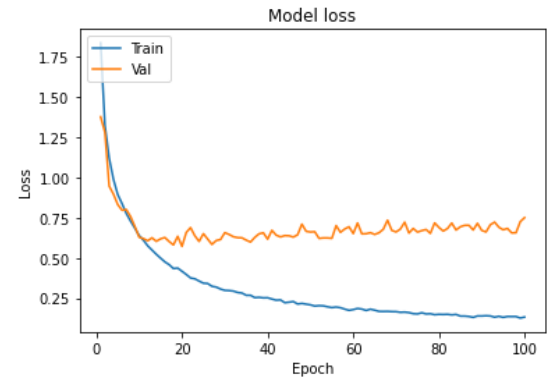
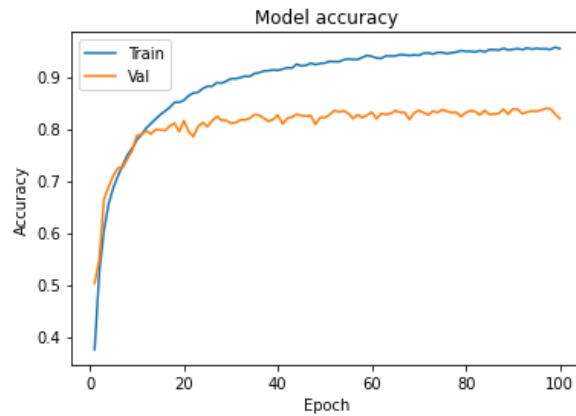




# Ridge-i assignment

## Supervised and unsupervised training

### 23 Batch normalization



Memory error tf.concat

```
WARNING:root:kernel 833a1a4-9890-4327-9298-783e776679d1 restarted
[1 23:37:56.091 NotebookApp] Saving file at /Ridge-ihomeworkdilla.ipynb
[1 23:37:56.599 NotebookApp] Saving file at /Ridge-ihomeworkdilla.ipynb
2020-04-04 23:41:06.188581: W tensorflow/stream_executor/platform/default/dso_loader.cc:55] Could not load dynamic library 'libcuda.so.1': dlopen: libcuda.so.1: cannot open shared object file: No such file or directory
2020-04-04 23:41:06.196262: E tensorflow/stream_executor/cuda/cuda_driver.cc:318] failed call to cuInit: UNKNOWN ERROR (303)
2020-04-04 23:41:06.201289: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:156] kernel driver does not appear to be running on this host (DESKTOP-OKSUVB1): /proc/driver/nvidia/version does not exist
2020-04-04 23:41:06.206870: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that this TensorFlow binary was not compiled to use: AVX2 FMA
2020-04-04 23:41:06.264044: I tensorflow/core/platform/profile_utils/cpu_utils.cc:94] CPU Frequency: 1608000000 Hz
2020-04-04 23:41:06.270388: I tensorflow/compiler/xla/service/service.cc:168] XLA service 0x125465e0 initialized for platform Host (this does not guarantee that XLA will be used). Devices:
2020-04-04 23:41:06.273540: I tensorflow/compiler/xla/service/service.cc:176] StreamExecutor device (0): Host, Default Version
2020-04-04 23:42:01.967788: W tensorflow/core/framework/cpu_allocator_impl.cc:81] Allocation of 522240000 exceeds 10% of system memory.
2020-04-04 23:42:04.609369: W tensorflow/core/framework/cpu_allocator_impl.cc:81] Allocation of 522240000 exceeds 10% of system memory.
2020-04-04 23:42:08.672975: W tensorflow/core/framework/cpu_allocator_impl.cc:81] Allocation of 522240000 exceeds 10% of system memory.
2020-04-04 23:42:11.630109: W tensorflow/core/framework/cpu_allocator_impl.cc:81] Allocation of 522240000 exceeds 10% of system memory.
2020-04-04 23:42:15.618273: W tensorflow/core/framework/cpu_allocator_impl.cc:81] Allocation of 522240000 exceeds 10% of system memory.
[1 23:42:40.648 NotebookApp] Saving file at /Ridge-ihomeworkdilla.ipynb
[1 23:47:31.304 NotebookApp] KernelRestarter: restarting kernel (1/5)
WARNING:root:kernel 833a1a4-9890-4327-9298-783e776679d1 restarted
```