

CSA 250: Deep Learning Project II Report

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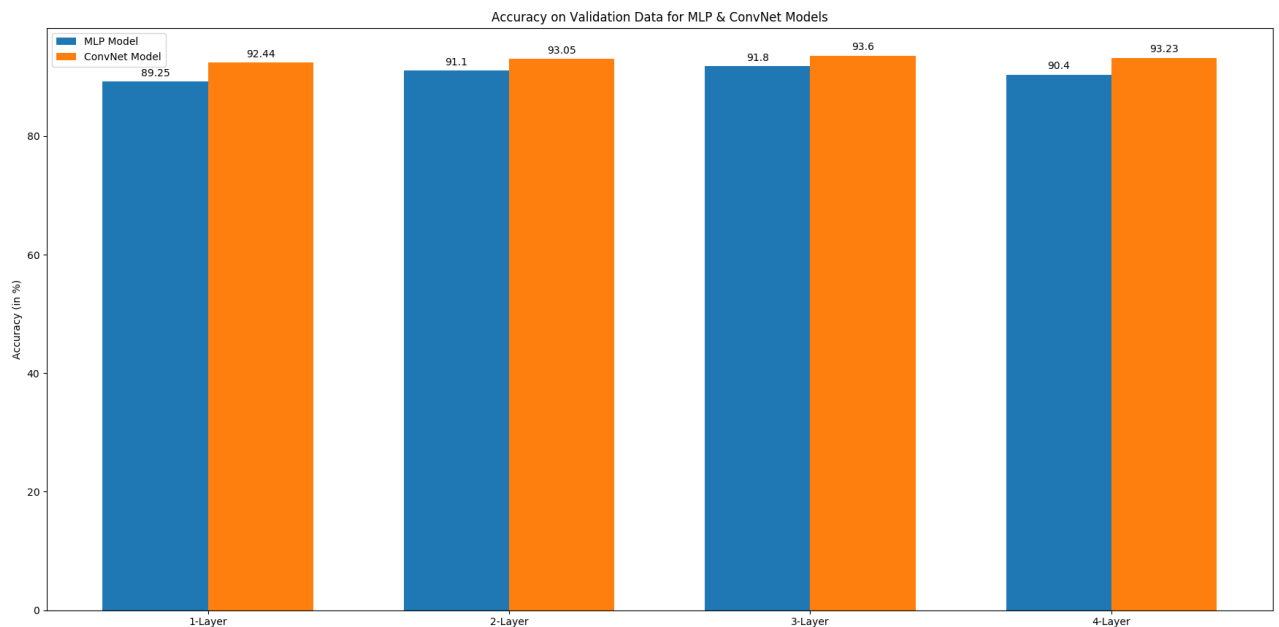
S/RNo.: 17025

Tools Used:

- Python 3
- Tensorflow 2.x
- Keras

Model Comparison:

- What made you choose your current architecture? and How many different architectures have you considered?



Result:

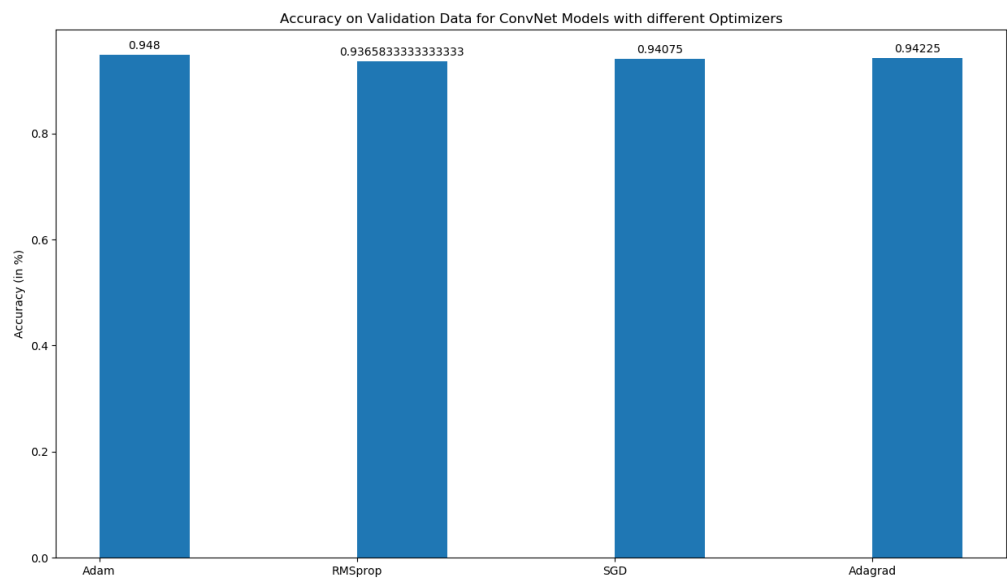
ConvNet: 3-Layer
MLP model: 3-Layer

- How did you arrive at your choice of hyperparameters - number of neurons/layers, activation function, learning rate etc.?

- Number of layers:

Result: **3-Layer Models** (above bar graph)

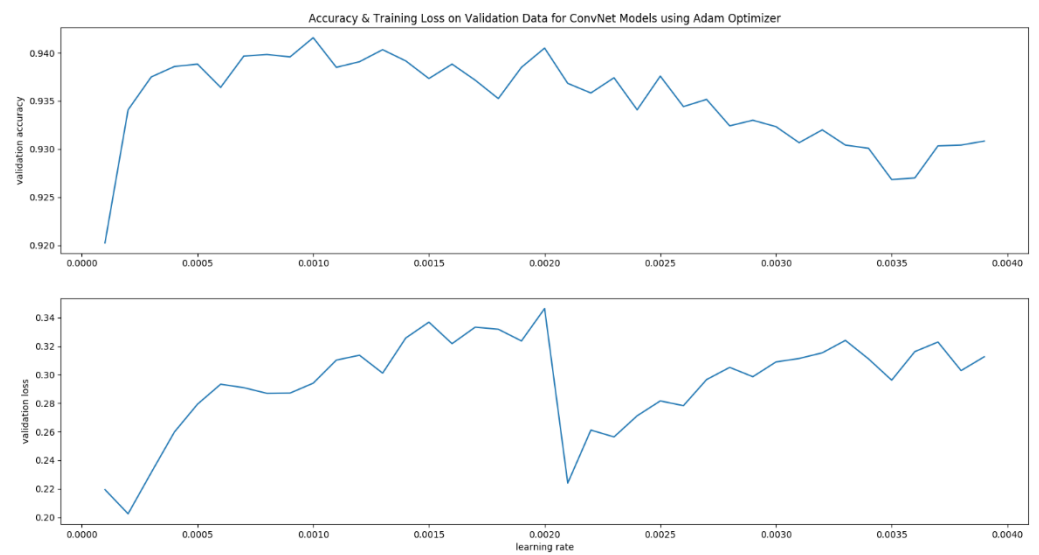
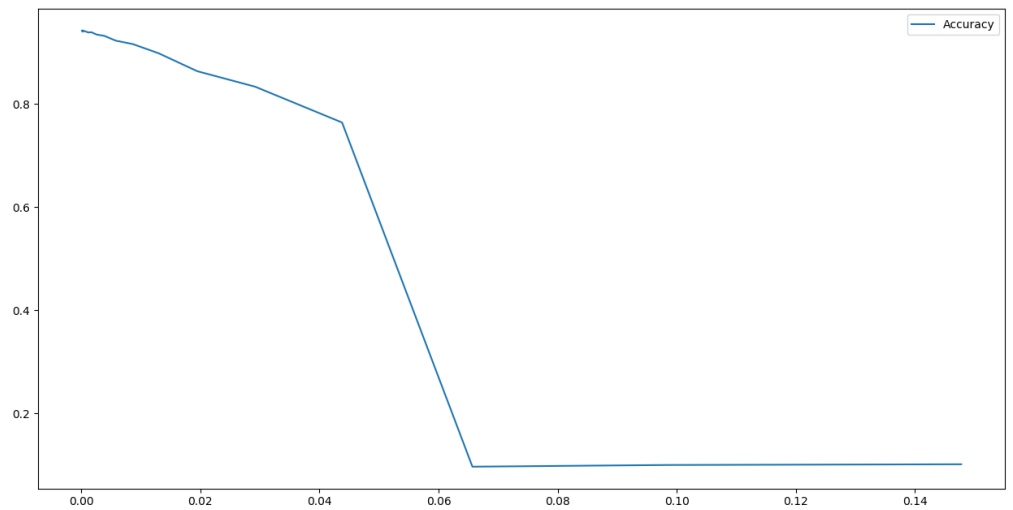
- Activation function:



Result: **Adam**

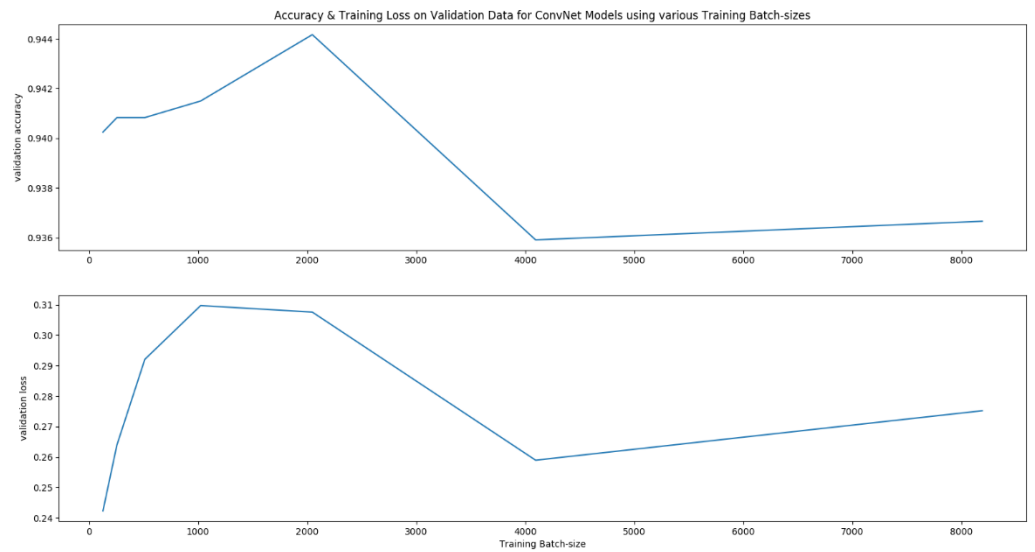
- Learning rate:

Learning rate vs Accuracy



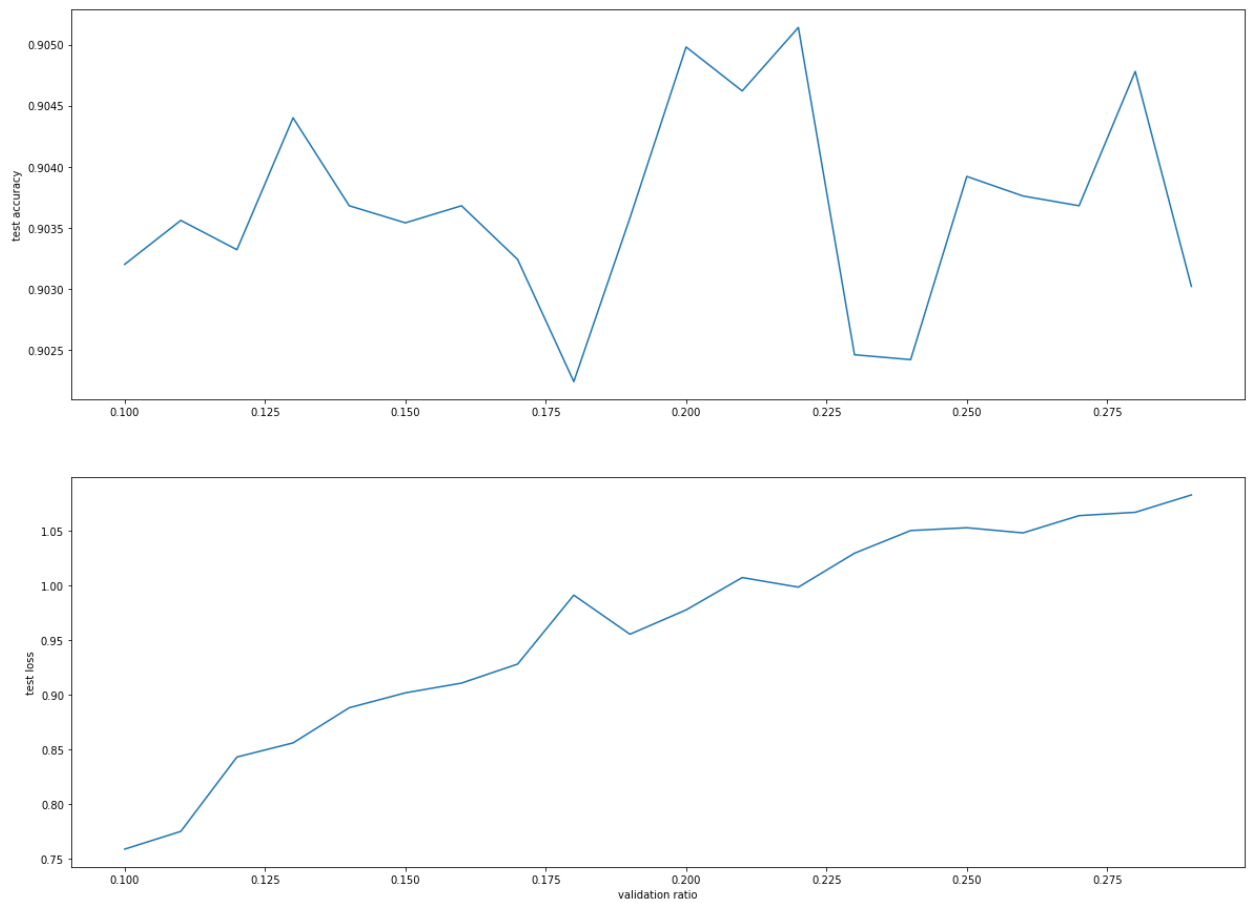
Result: **0.001** gave best result

○ Batch-size:



Result: **2048** gave best result

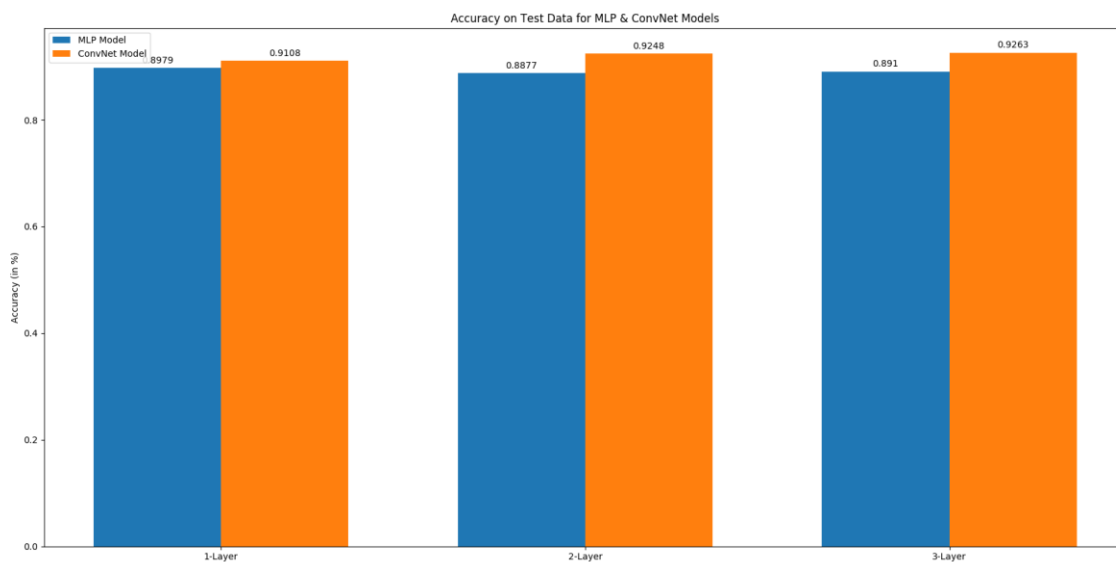
- How did you validate your model?



Result: **0.2** gave best results on test data, I used 48000 samples for training & 12000 for validating where the division is done randomly

●

Models Results:



Observation:

ConvNet with 3 layers performed the best, its performance was increasing from 1 to 3, then was invariant of increasing the layers.

MLP models were giving similar performance for any architectures with reasonable nodes. It could not get better results than ConvNets, & MLP's model file size is much higher than ConvNets. ConvNets were time taking to train but delivered the best results with 3-Layer architecture.

References:

<https://github.com/markjay4k/Fashion-MNIST-with-Keras>