

SMAI Assignment Report

Q1

Approach -

So first was loading the dataset small augmentation like rotation etc were added randomly on some images to improve our training and model could learn more variations then ran for 20 epochs got the accuracy near to 0.90 then later on trained 8 models on the given lr , dr and opt choice $2 \times 2 \times 3$ models

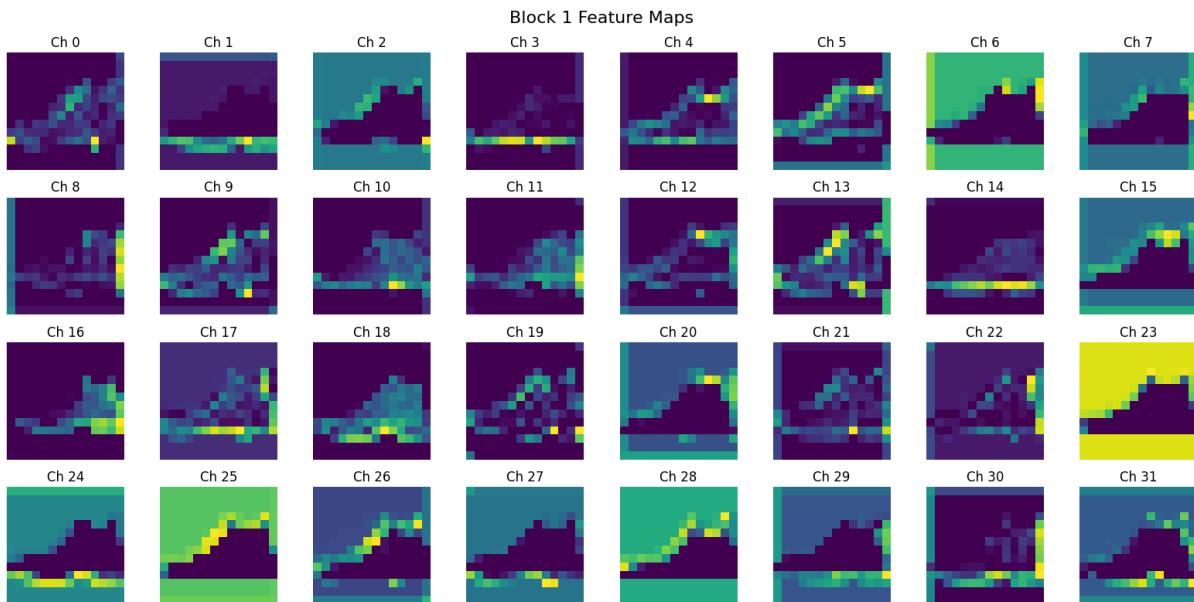
Then ran model with diff number of conv layers and batch size got a bit less accuracy when went from 3 to 2 then used different values of lambda 1 and lambda 2

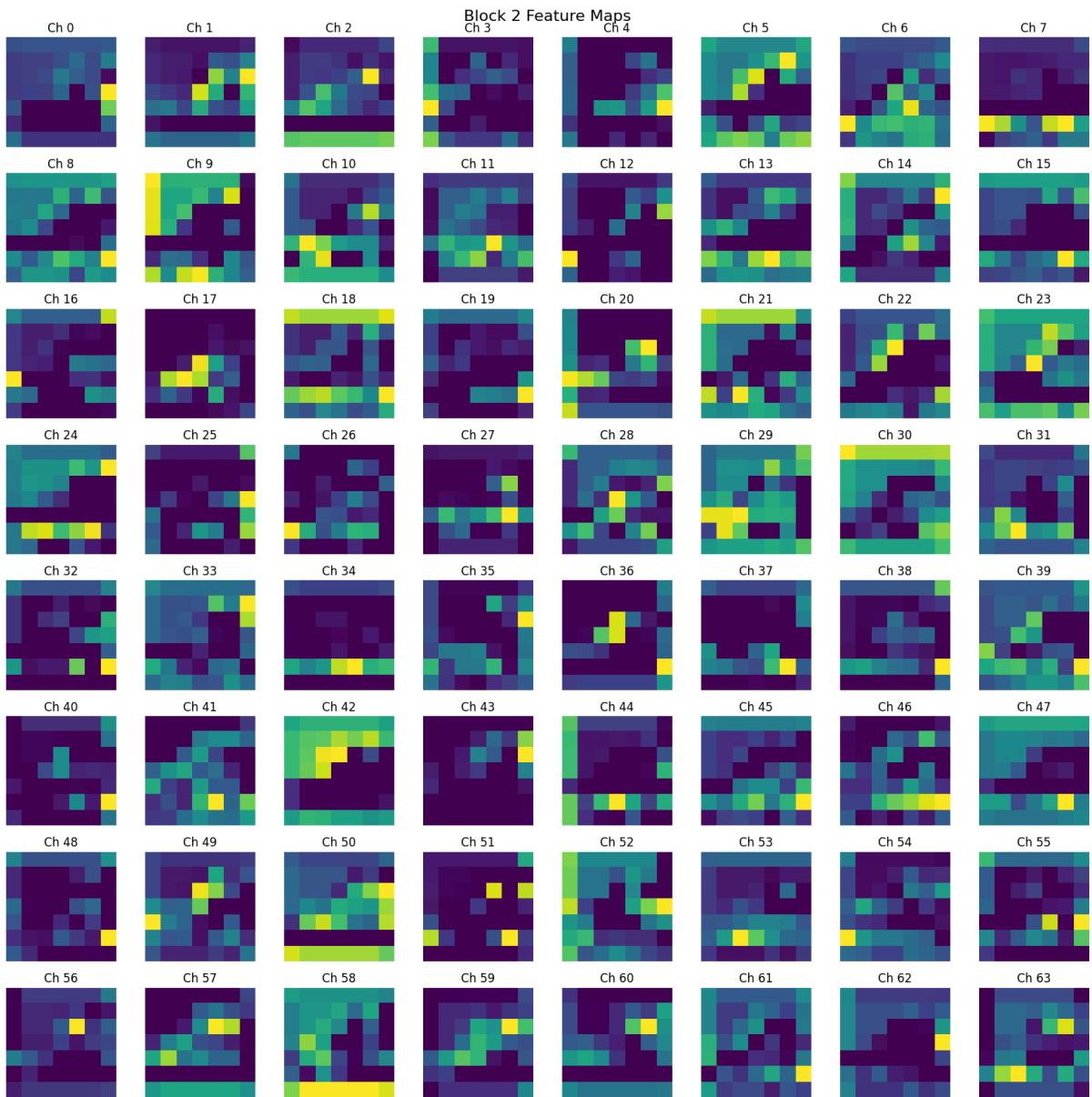
For model selection checked the wandb to get the best run

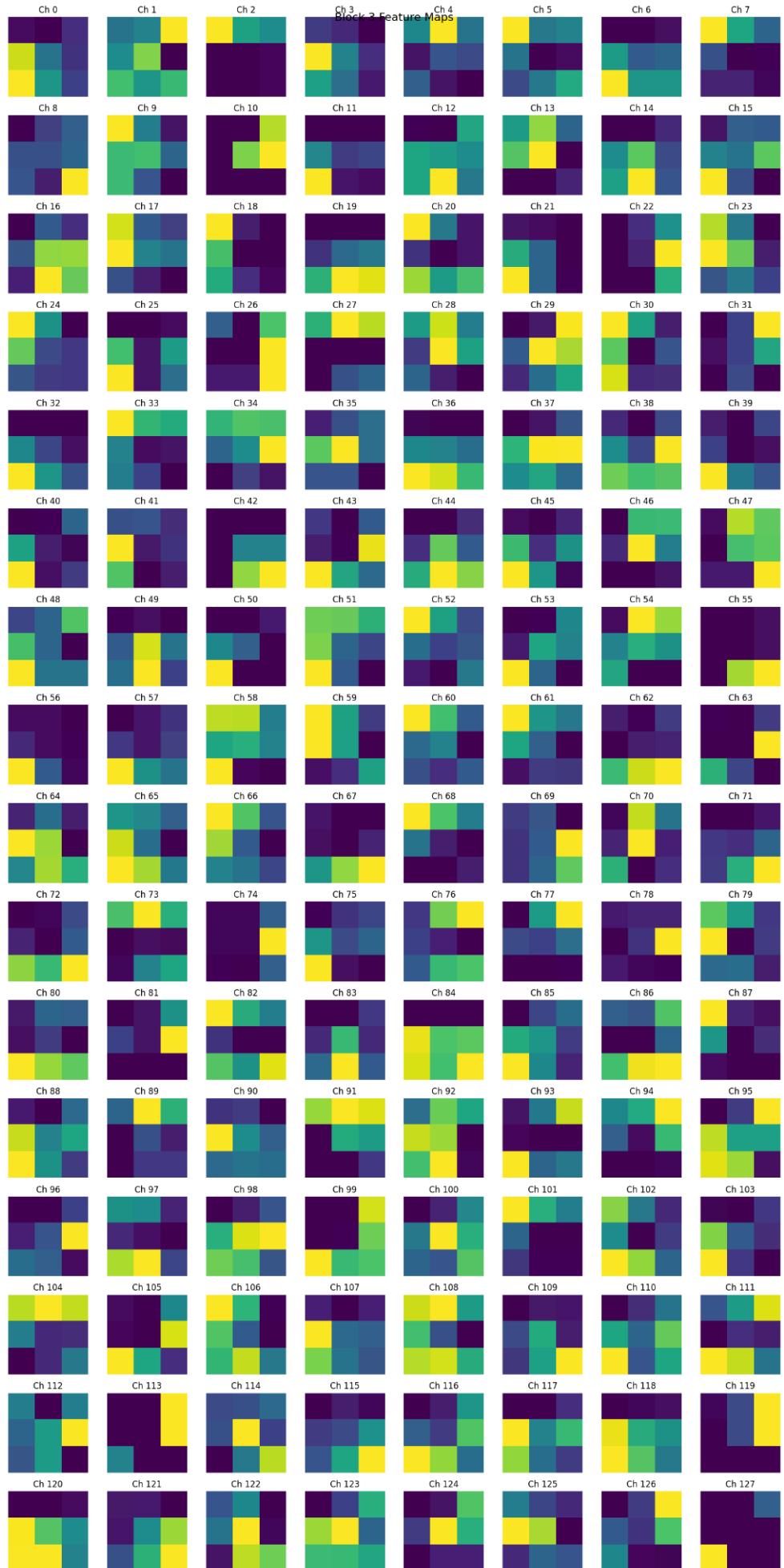
<https://wandb.ai/nidhish-jain-iiit-hyderabad/smai-a4-q1-fashion-multitask/runs/jwwk9aw5?nw=nwusernidhishjain> config in the notebook.

Then visualized the images which are present in notebook for 3 examples images present on notebook

Putting up for one case here







So we can see that this is for object = boot

Now the observed tradeoff is between the classification accuracy and the ink prediction (rmse value) reason being the loss is defined as $\lambda_1 \times \text{CE} + \lambda_2 \times \text{mse}$

So when $\lambda_1 > \lambda_2$ then better classification

When $\lambda_2 > \lambda_1$ then more improvement on regression ie matching the ink avg value of ink so go more towards regression

Wandb project -

<https://wandb.ai/nidhish-jain-iiit-hyderabad/smai-a4-q1-fashion-multi-task>

Q2

Wandb link - <https://wandb.ai/nidhish-jain-iiit-hyderabad/q2-cifar>

Best Run -

<https://wandb.ai/nidhish-jain-iiit-hyderabad/q2-cifar/runs/618yq5b1?nw=nwusernidhishjain>