



TRAFFIC SIGN RECOGNIZ ATION

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introduction

- *road sign recognition acquired by camera.*
- *detection of sign boards across the roads.*
- *objective of this system is to detect and classify the road sign.*
- *it uses computer vision and AI.*

problem statement:

- *detection and classification of traffic signs using CNN*
- *To propose a method to extract the symbol of the traffic sign*
- *To propose a method to identify the symbol of the traffic warning sign.*

advantage of TSR

Traffic sign recognition considerably enhances safety, as it allows drivers to concentrate on the traffic in complicated situations. The system also helps motorists to keep to the speed limit.



- *Is Convolutional Neural Network fast enough to detect the change in traffic sign?*
- *Can autonomous vehicles able to detect the traffic signs due to bad weather conditions?*

motivation:

- *Recognition of traffic sign is challenging problem*
- *But Its an important task for intelligent/autonomous vehicles*



Novelty of paper

Layer

Convolutional, stride 2, kernel 7x7x4

Convolutional, stride 2, kernel 5x5x8

Convolutional, stride 2, kernel 3x3x16

Convolutional, stride 2, kernel 3x3x32

Convolutional, stride 1, kernel 2x2x16

Convolutional, stride 1, kernel 2x2x8

Convolutional, stride 1, kernel 2x2x4

Fully connected-64

Fully connected-16

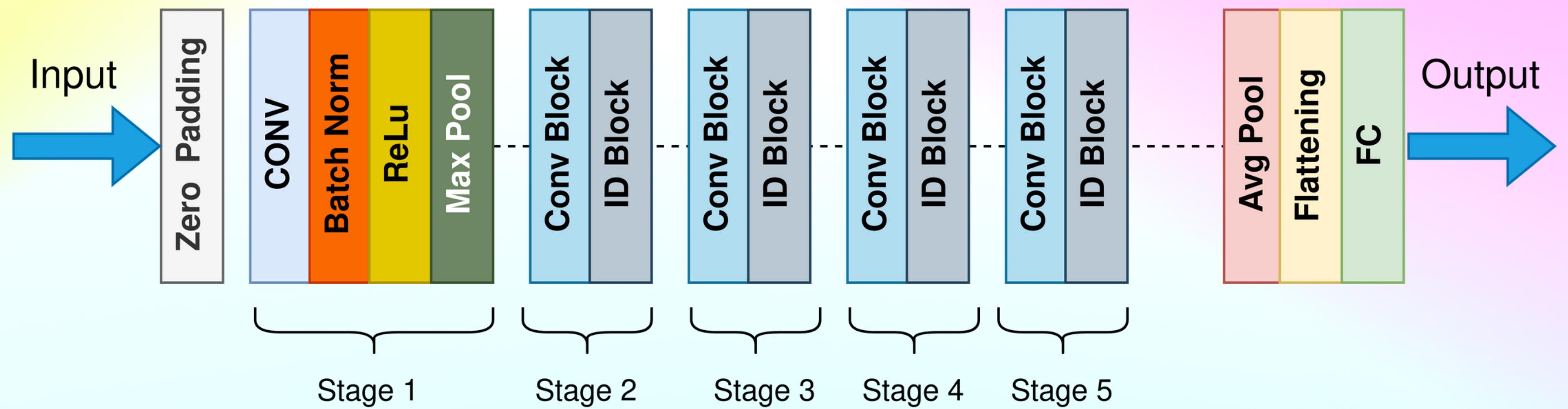
Softmax

***what we changed or added in
paper?***

methodology

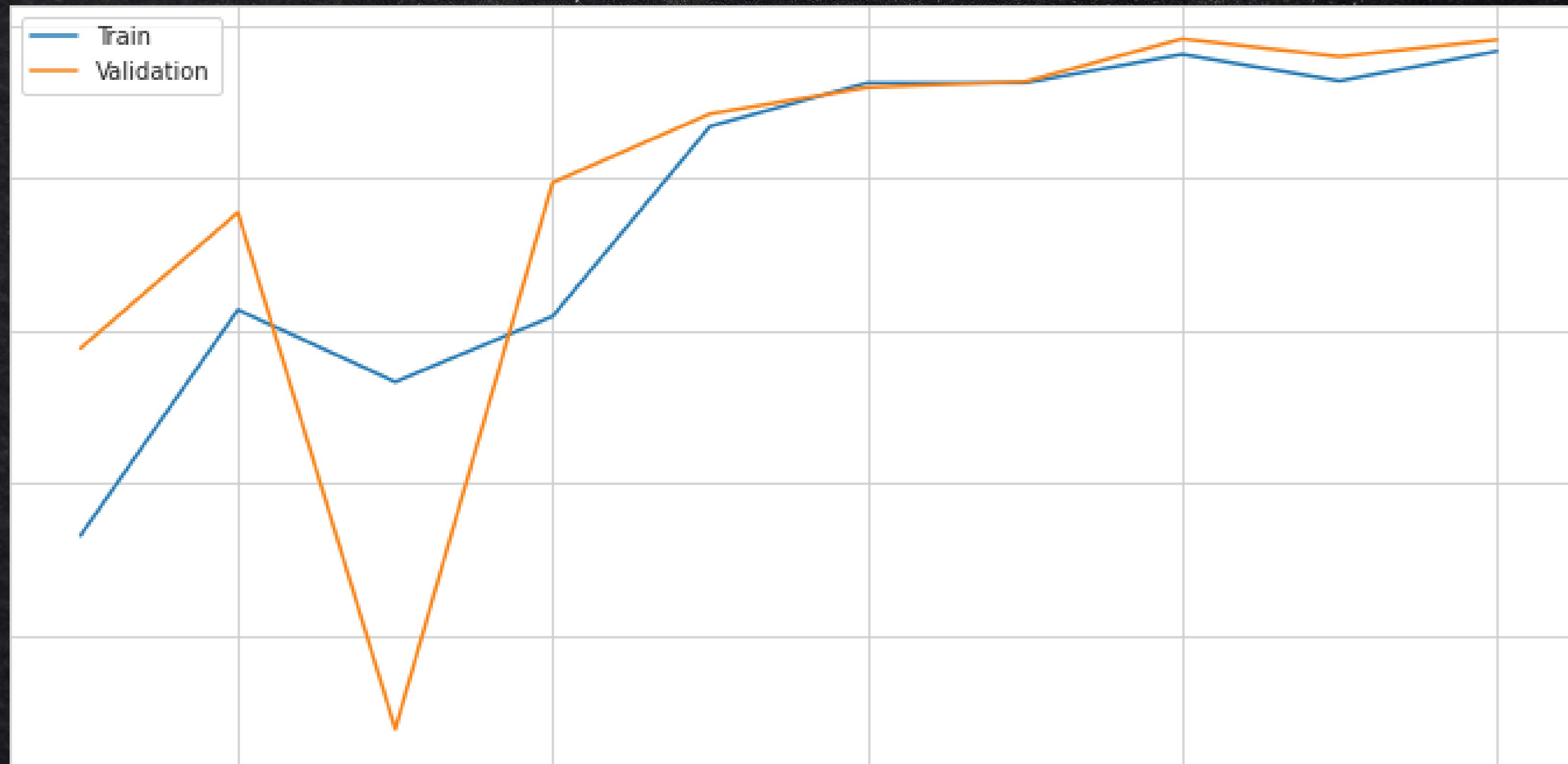
- ResNet50
- *ResNet is a powerful model that is used very frequently in many computer vision tasks*
- *ResNet uses skip connection to add the output from an earlier layer to a later layer. This helps it mitigate the vanishing gradient problem*

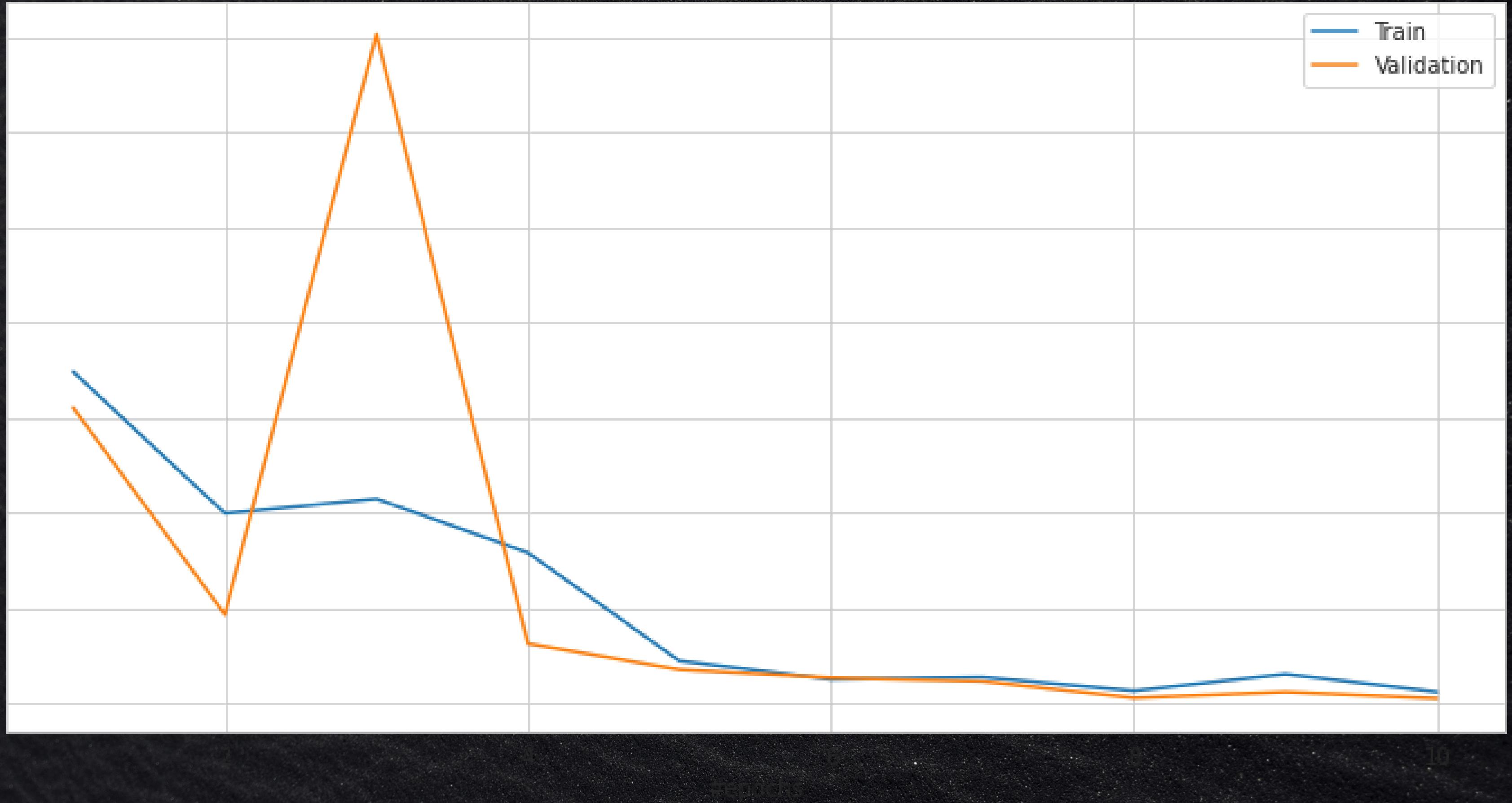
ResNet50 Model Architecture



Accuracy & loss of Resnet50

```
→ 458/458 [=====] - 3s 7ms/step - loss: 0.0584 - accuracy: 0.9837  
Accuracy: 0.9836614727973938  
Loss : 0.058350324630737305
```





Original: 5 Predicted: 5



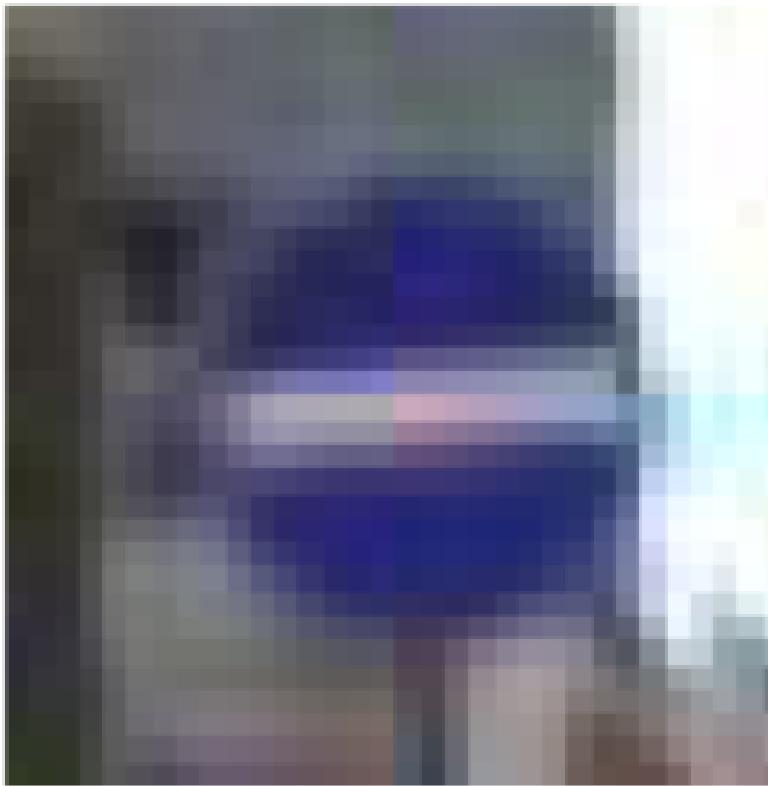
Original: 12 Predicted: 12



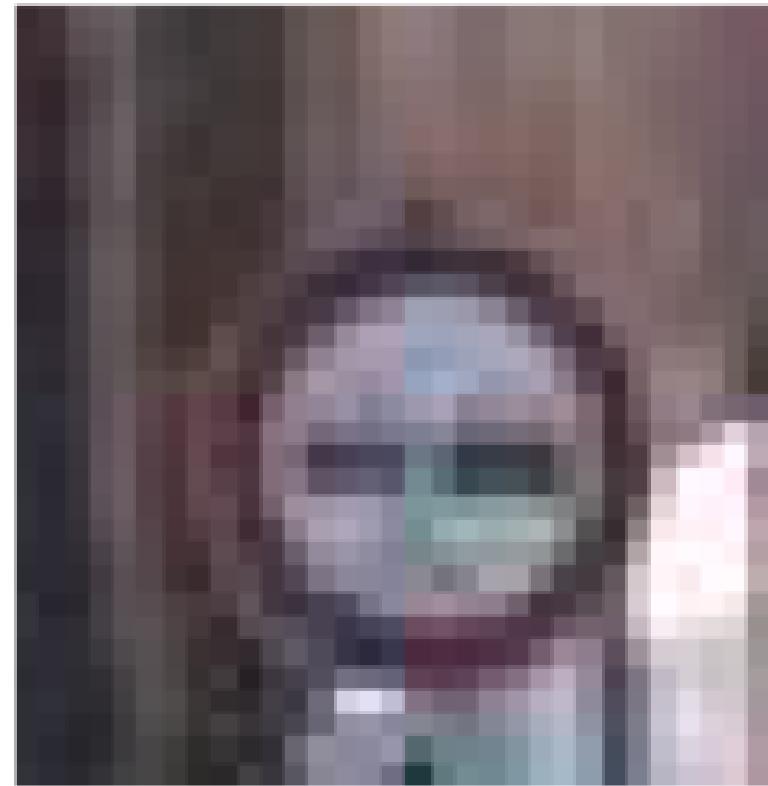
Original: 1 Predicted: 1



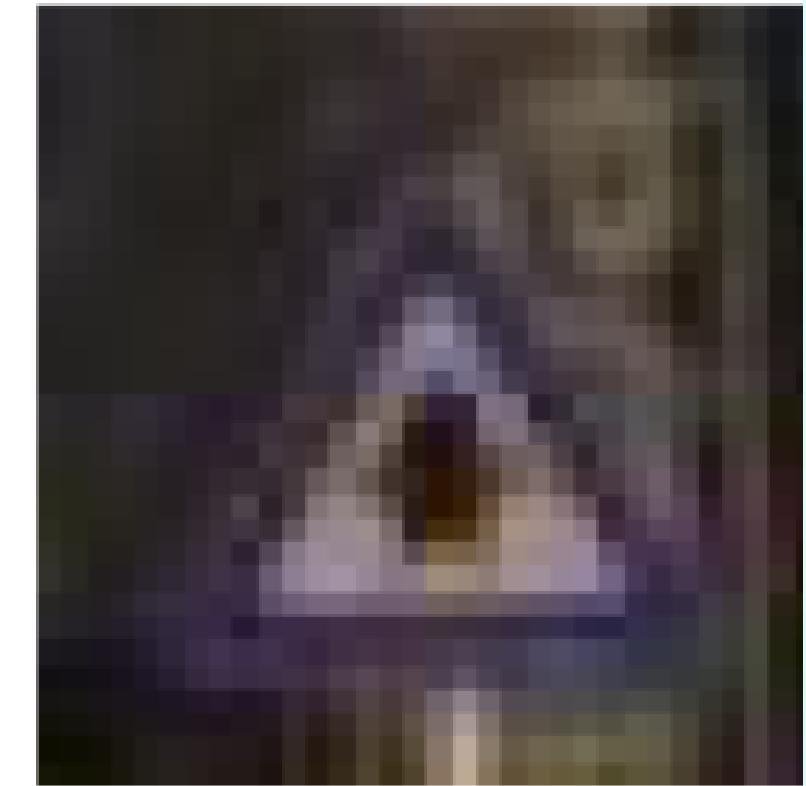
Original: 9 Predicted: 9



Original: 42 Predicted: 42



Original: 3 Predicted: 3



Data:



Reference's:

- *kaggle*
- *analaticsvidhya*
- *Procedia Engineering*
- *<https://reader.elsevier.com/reader/sd/pii/S1877705817341231?token=6508DA01783D6E1FD6390EC59C65F0750056AF3200BBD2DEF C774DF88CDB6C09E73D49DFE809D6709ED5D945F6C608C4&originRegion=eu-west-1&originCreation=20220119060047>*

Thank
you

