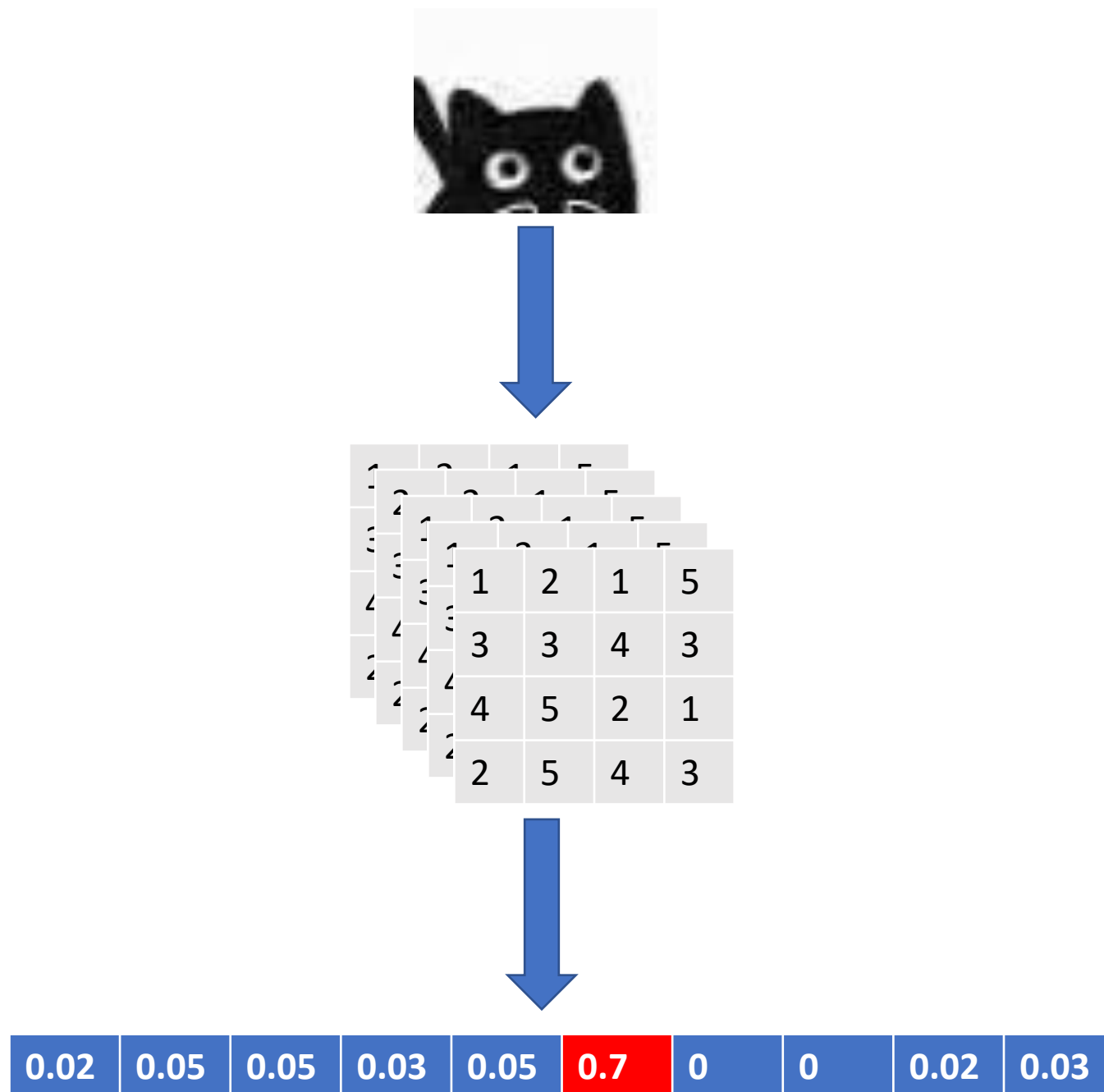
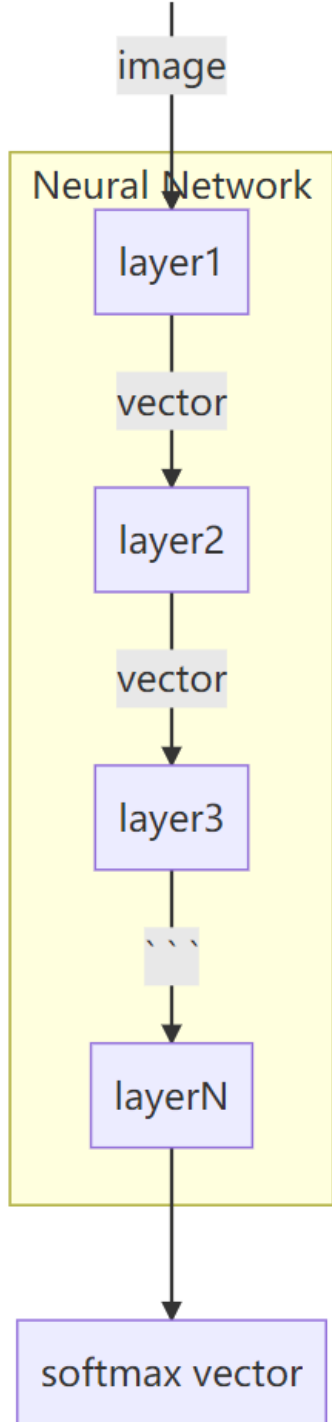
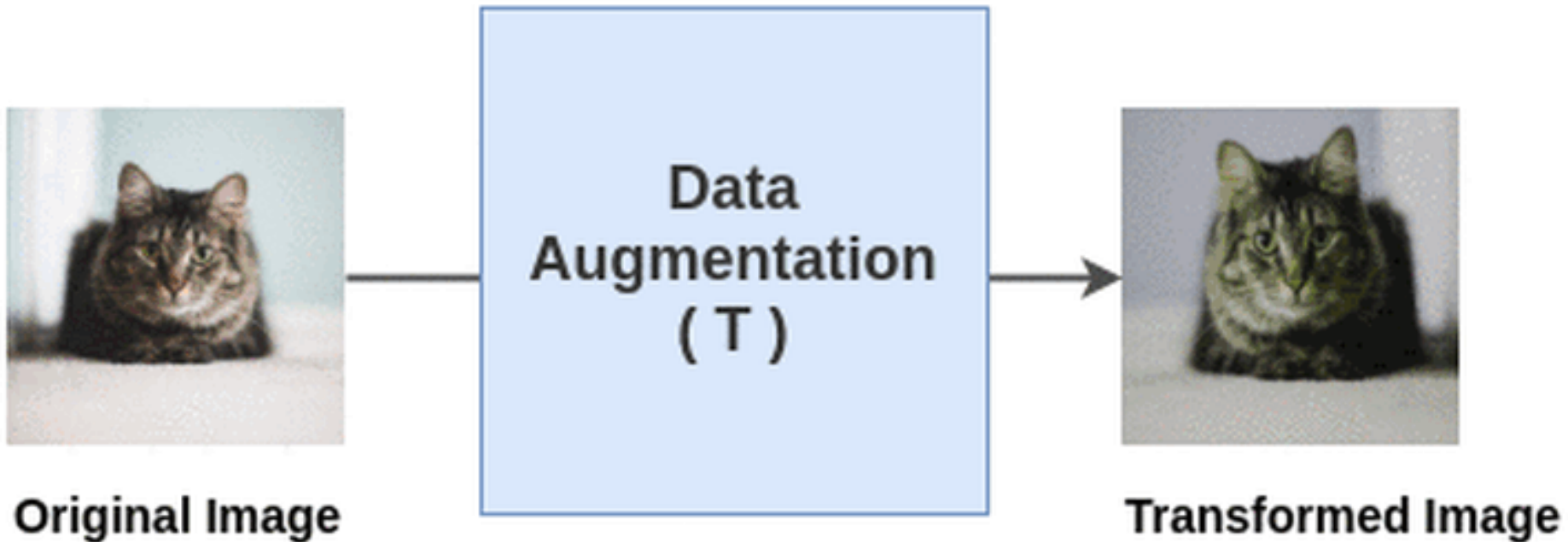


Feature Enhancements



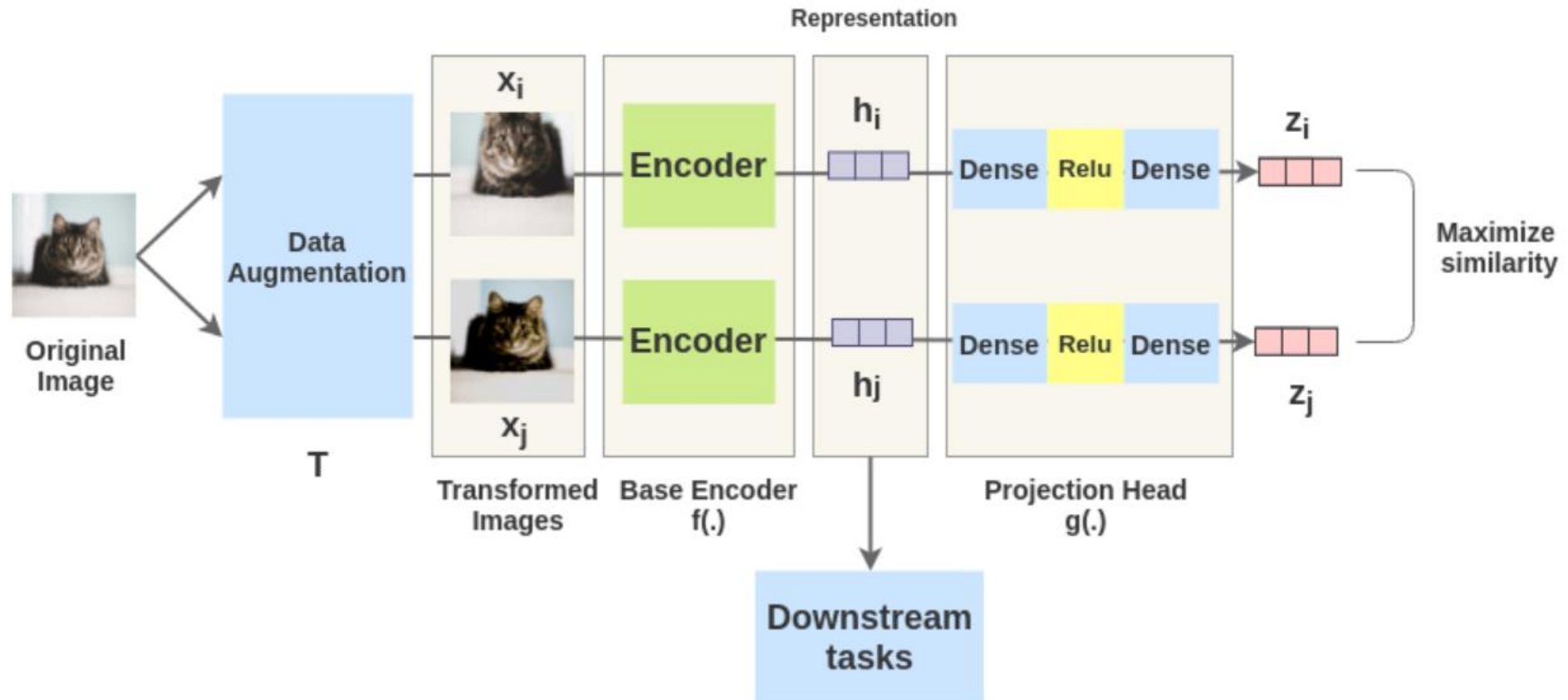
For making better use of the limited image and developing Robustness,
data augmentation is widely used

Random Transformation



simCLR: the feature extracted from two augmented image should be as similar as possible

SimCLR Framework





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2	3	4	4
2	4	3	1
3	5	3	2
1	3	4	3

2	3	4	4
2	4	3	1
3	5	3	2
1	3	4	3

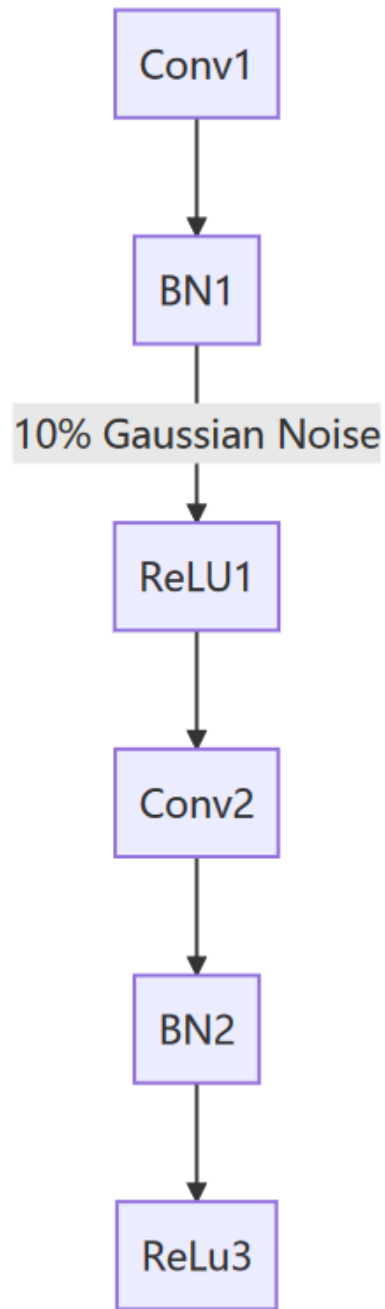
2	3	4	4
2	4	3	1
3	5	3	2
1	3	4	3

Could intermedium feature vector augmentation be equal to or even **be better than** image augmentation?

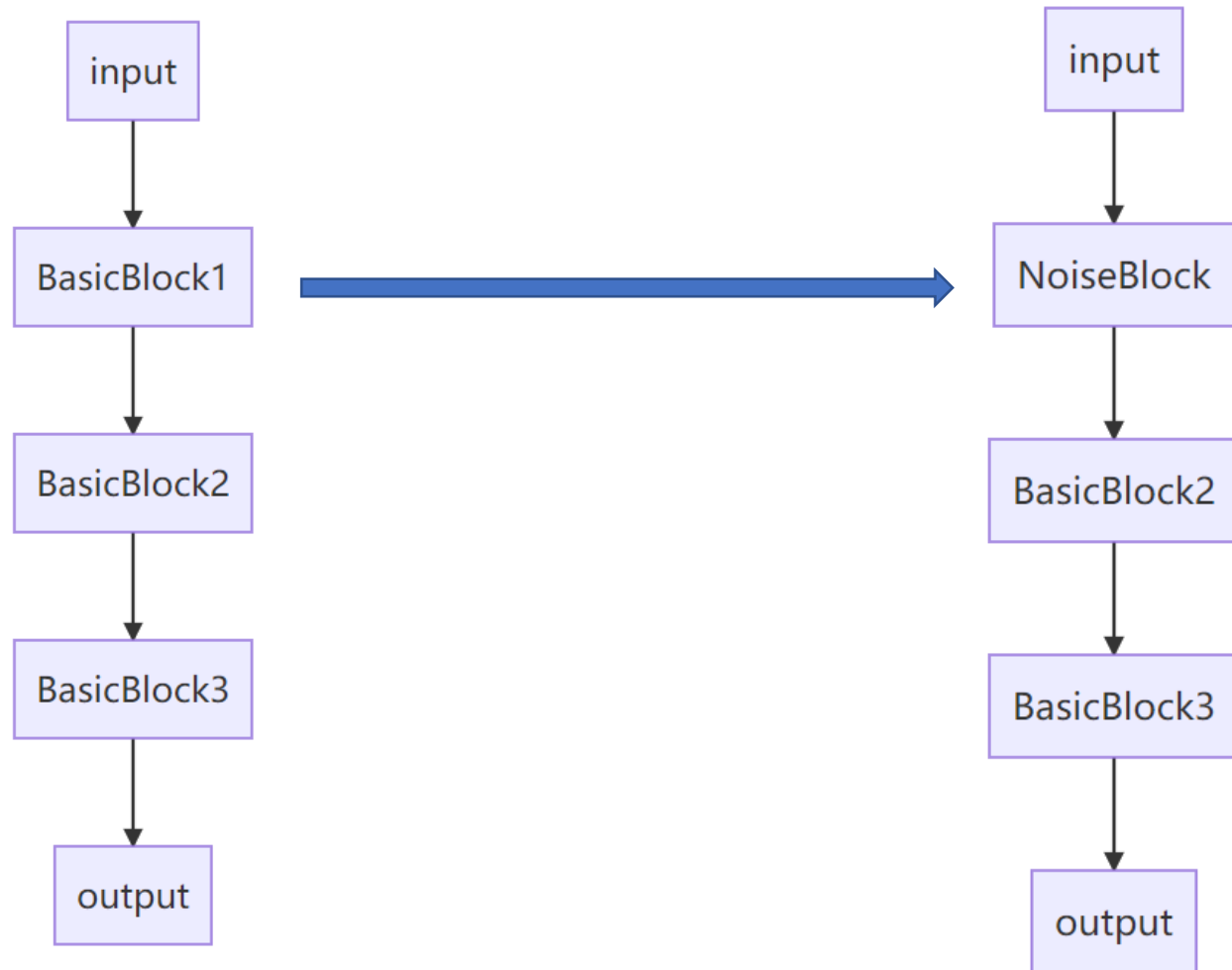
Feature
Augmentation

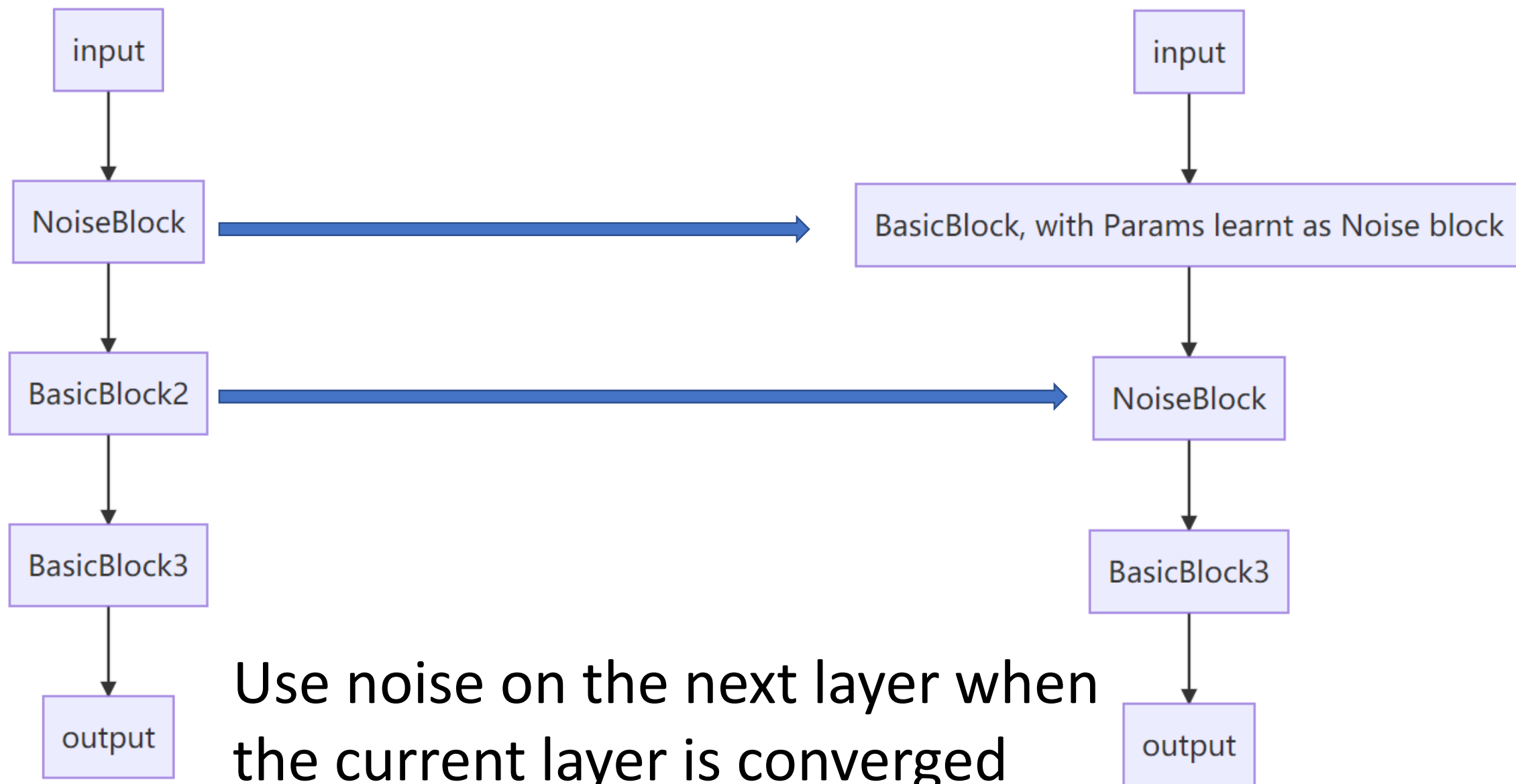
\geq ?

Image
Augmentation



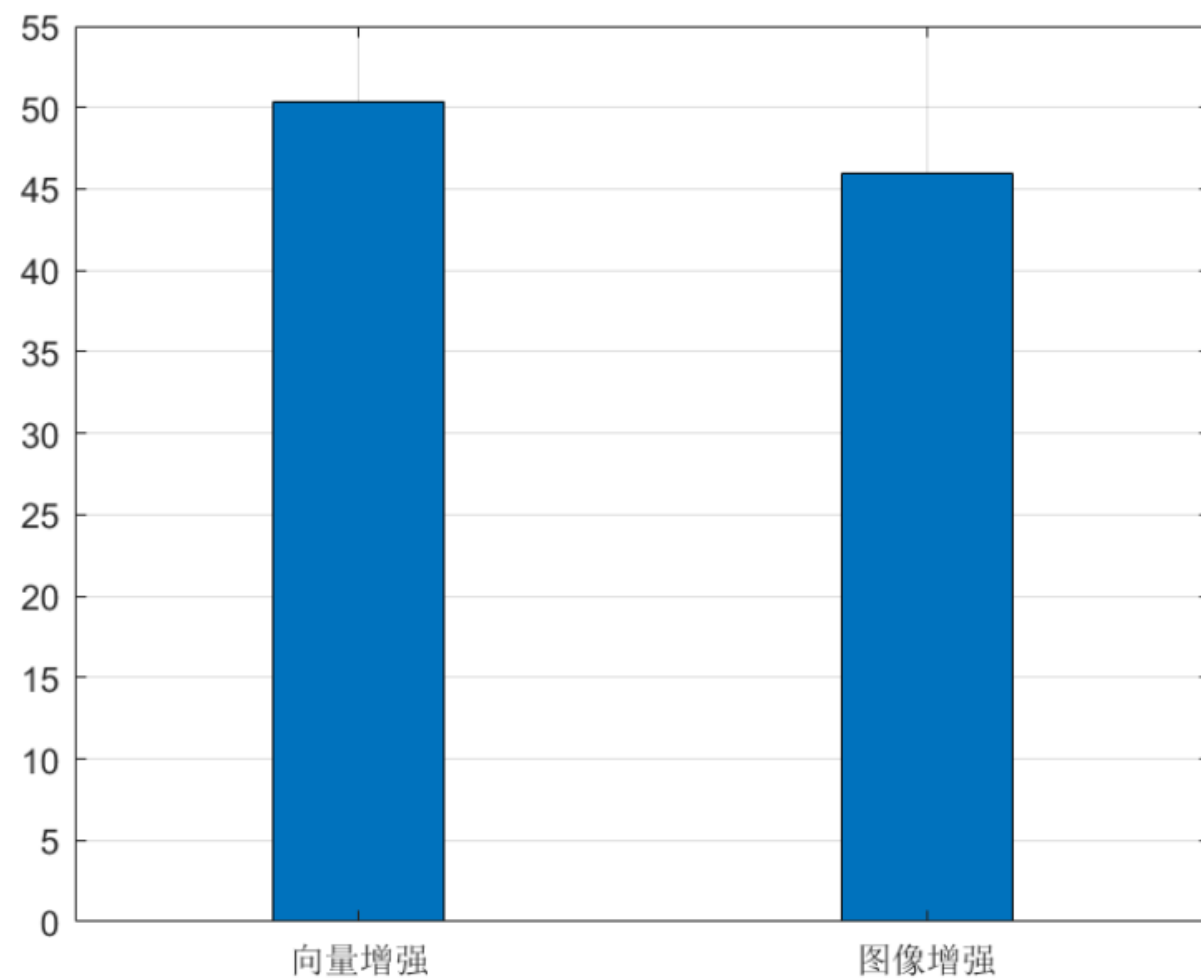
Method:
Adding Gaussian noise to 10% of the values
in the intermedium feature vector randomly.





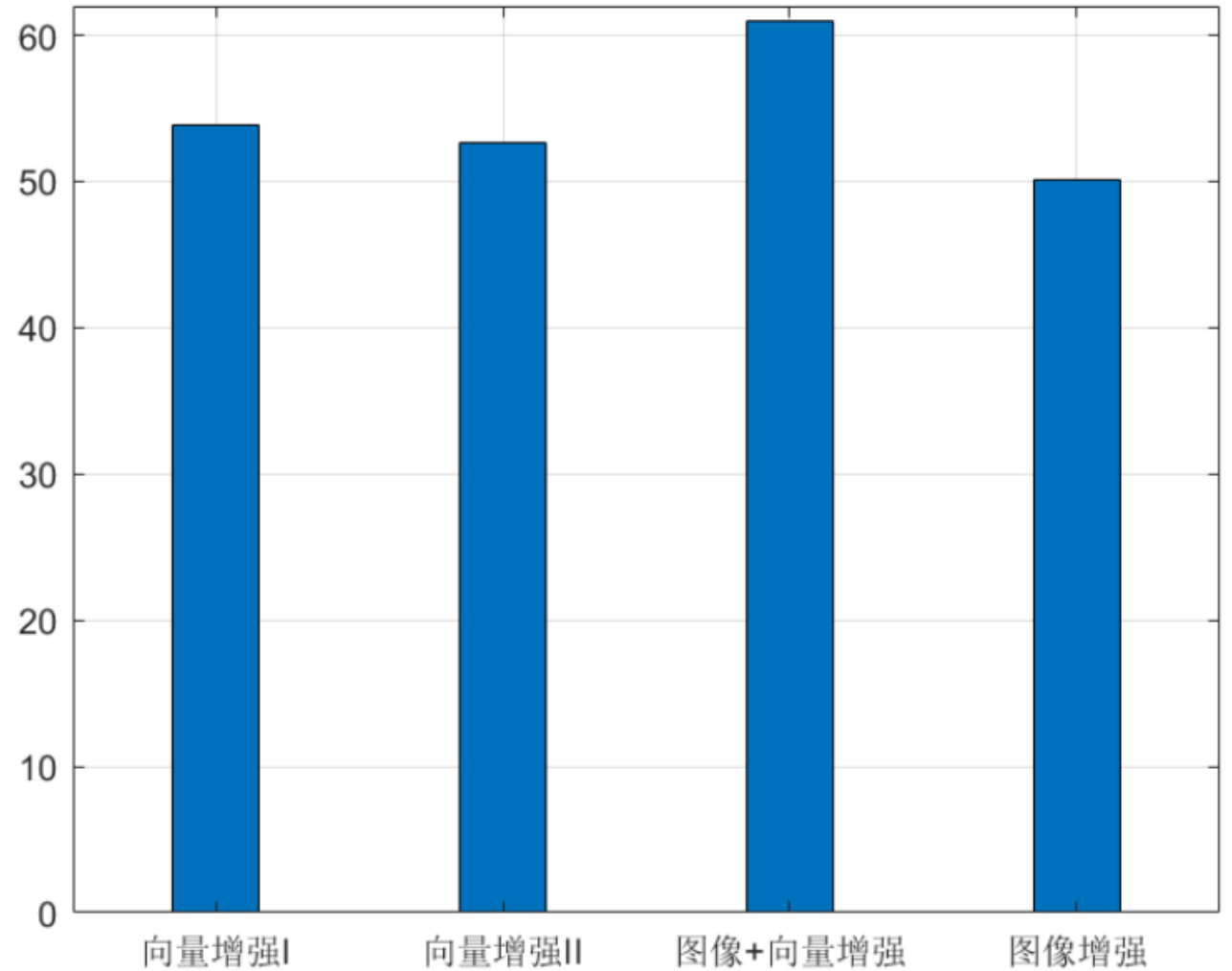
Result:

Training on ResNet18 with 10%
Gaussian Noise on one block



Training on ResNet34

- One Noise Block
- Two Noise Blocks at the same time
- One Noise Block, meanwhile image augmentation
- Image augmentation only



Transfer Learning on pretrained ResNet34:

