# Report

a. Screenshots:

i. Testing accuracy of original dense vgg13 model.

A screenshot of a computer

Description automatically generated

ii. Results of testing accuracy and sparsity (test\_sparsity function) of your four pruned model.

Omp-unstructured-epochs 10

A computer screen shot of a black screen

Description automatically generated

Imp-unstructured-epochs 10

A computer screen shot of a black screen

Description automatically generated

Omp - filter -epochs 10

A screenshot of a computer screen

Description automatically generated

Imp - filter -epochs 10

A screenshot of a computer

Description automatically generated

iii. Your .yaml file.

prune\_ratios\_unstructured:

  # features.0.weight: 0.5  # First Conv Layer

  features.3.weight: 0.8   # conv layer

  features.4.weight: 0.8

  features.7.weight: 0.8

  features.8.weight: 0.8

  features.10.weight: 0.9

  features.11.weight: 0.9

  features.14.weight: 0.8

  features.15.weight: 0.8

  features.17.weight: 0.8

  features.18.weight: 0.8

  features.21.weight: 0.8

  features.22.weight: 0.8

  features.24.weight: 0.8

  features.25.weight: 0.8

  features.28.weight: 0.8

  features.29.weight: 0.8

  features.31.weight: 0.8

  features.32.weight: 0.8

prune\_ratios\_filter:

  # features.0.weight: 0.5  # First Conv Layer

  features.3.weight: 0.4

  features.4.weight: 0.4

  features.7.weight: 0.4

  features.8.weight: 0.6

  features.10.weight: 0.6

  features.11.weight: 0.4

  features.14.weight: 0.6

  features.15.weight: 0.4

  features.17.weight: 0.4

  features.18.weight: 0.4

  features.21.weight: 0.4

  features.22.weight: 0.4

  features.24.weight: 0.4

  features.25.weight: 0.4

  features.28.weight: 0.4

  features.29.weight: 0.4

  features.31.weight: 0.4

  features.32.weight: 0.4

b. Five (1+4) figures mentioned in Requirement 4.

A screenshot of a graph

Description automatically generated

Omp-unstructured-epochs 10

A screenshot of a computer

Description automatically generated

Imp-unstructured-epochs 10

A screenshot of a computer

Description automatically generated

Omp - filter -epochs 10

A screenshot of a computer

Description automatically generated

Imp - filter -epochs 10

A screenshot of a computer

Description automatically generated

c. Answers of the questions listed in prune\_channels\_after\_filter\_prune() function.

    1. After apply this function (further prune the corresponding channels), what is the change in sparsity?

    2. Will accuray decrease, increase, or not change?

3. Based on question 2, explain why?

4. Can we apply this function to ResNet and get the same conclusion? Why?

**Small Sparsity Ratios**: Accuracy often remains unchanged because ResNet compensates for the reduced parameters via residual learning.

**Moderate Sparsity Ratios**: A slight accuracy drop might occur, depending on the importance of pruned channels.

d. Link of your models (Google Drive or OneDrive).

Link for pruned models

<https://drive.google.com/drive/folders/1mX_jeLrcNvOwseXcKPHbFrxXzclX071N?usp=sharing>

e. Your code. (text or screenshot)