

17.10.25

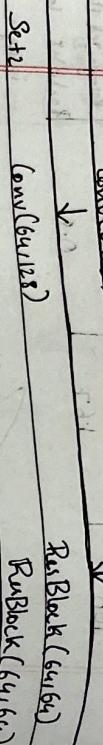
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Understanding the Architecture
of a Pre-trained Model

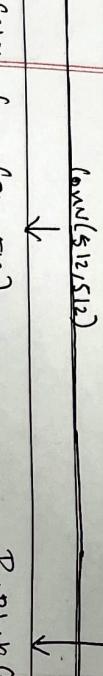
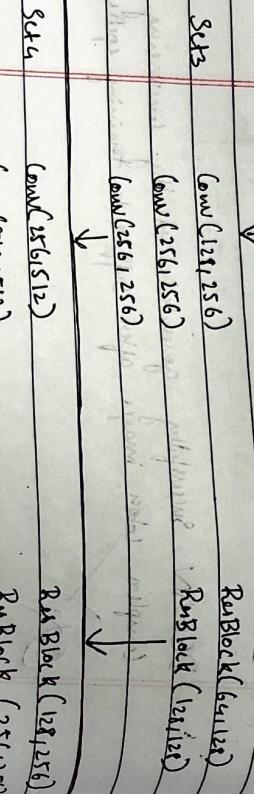


Objectives:

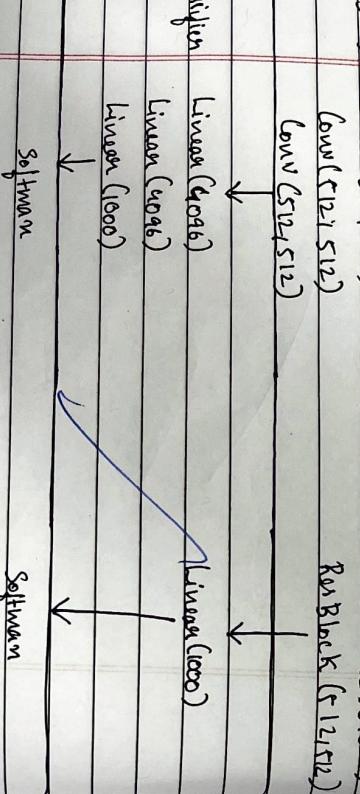
1. Employ layer-wise postprocessing of a trained pre-trained model. (e.g. VGG16 RESNET-10)
2. Visualize training history, input-output flow, and feature extraction process.
3. Understand transfer learning application using the model.



Procedure:



Support pre-trained model.



- Pre-load model weights trained on ImageNet dataset.
- Display model summary to view all layers and parameters.
- Visualize output of selected convolutional layers.
- Freeze initial layers and fine-tune layers for a new dataset.
- Evaluate performance using accuracy on test set.
- Save and reuse the modified model for classification tasks.

Observational table:

	Total layer	Terrain	Terrestrial	Fraction type
Model	Total layers	Person		
VIGIL	11	13.9m	Terrain & Person	Ground
RENUCO	17.7	25.6m	Shallow Person	Deep Sediment

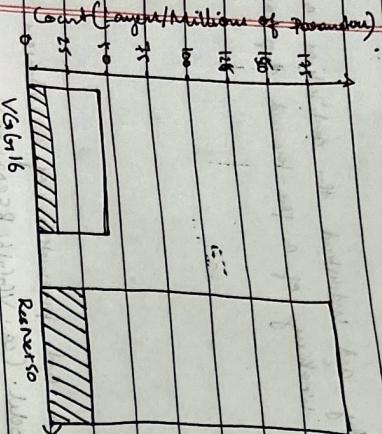


Fig 16

Reverso

Observations:

Comparison of VIGIL and RENUCO predictions

- Early layers depict loose layer between live edges and terrain.
- Deep layers seem complex pattern and object park.
- Terrain learning allows owing learned weight person two tasks.

Initial training

Results:

- New agent and terrain
- The new agent terrain layer is 10%.
- The new agent terrain layer learning was successfully analysed, providing insight into terrain learning and deep learning behaviour.

Model 11

Model 17.7

Model 7