

≡ Item Navigation

Summary/Review

CNNs

Convolutional Layers have relatively few weights and more layers than other architectures. In practice, data scientists add layers to CNNs to solve specific problems using Transfer Learning.

Transfer Learning

The main idea of Transfer Learning consists of keeping early layers of a pre-trained network and re-train the later layers for a specific application.

Last layers in the network capture features that are more particular to the specific data you are trying to classify.

Later layers are easier to train as adjusting their weights has a more immediate impact on the final result.

Guiding Principles for Fine Tuning

While there are no rules of thumb, these are some guiding principles to keep in mind:

- The more similar your data and problem are to the source data of the pre-trained network, the less intensive fine-tuning will be.
- If your data is substantially different in nature than the data the source model was trained on, Transfer Learning may be of little value.

CNN Architectures

LeNet-5

- Created by Yann LeCun in the 1990s
- Used on the MNIST data set.
- Novel Idea: Use convolutions to efficiently learn features on data set.

AlexNet