

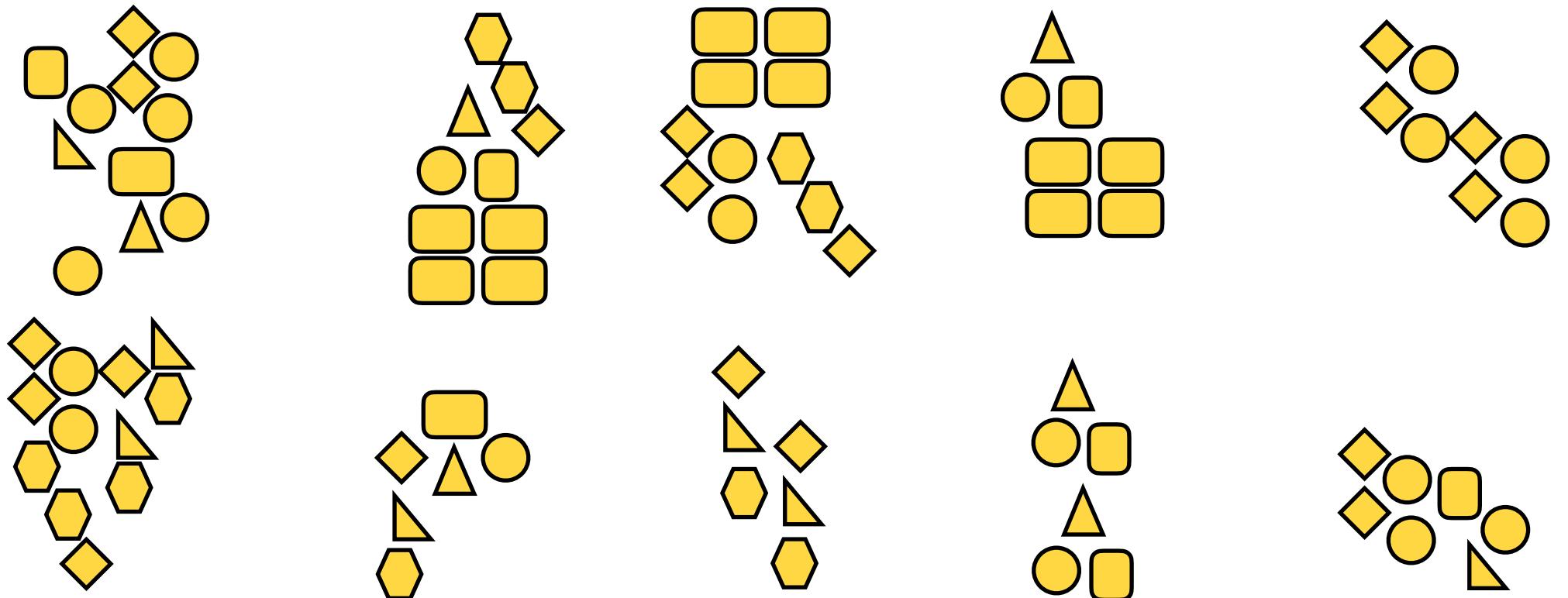


Transfer Learning and Fine-Tuning

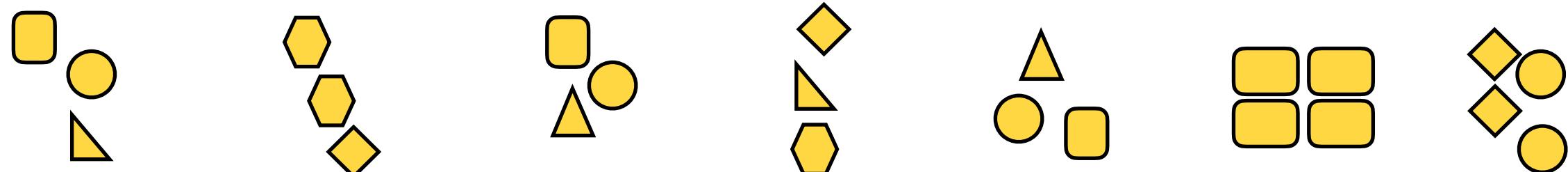
Advantages of Hierarchical Features

- Better leverage of all training data

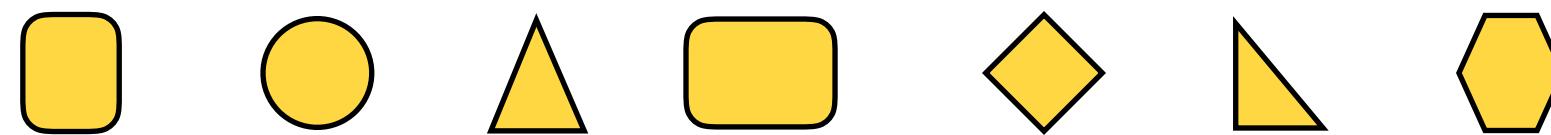
layer 3: motifs

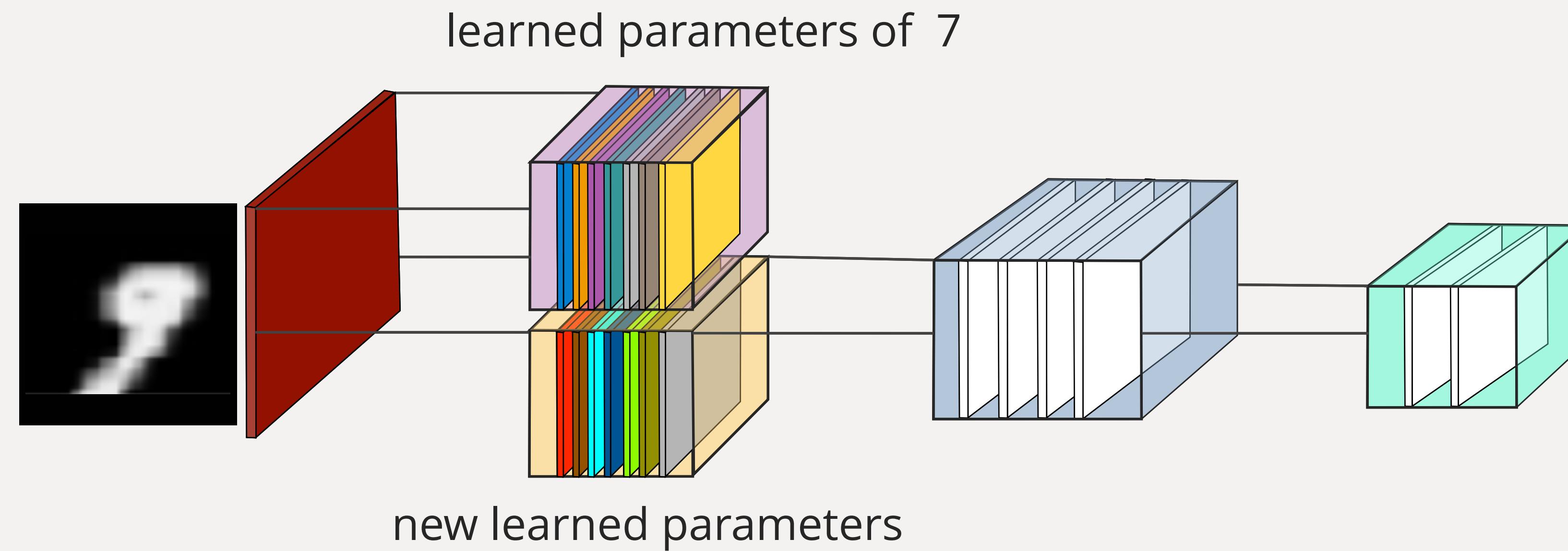
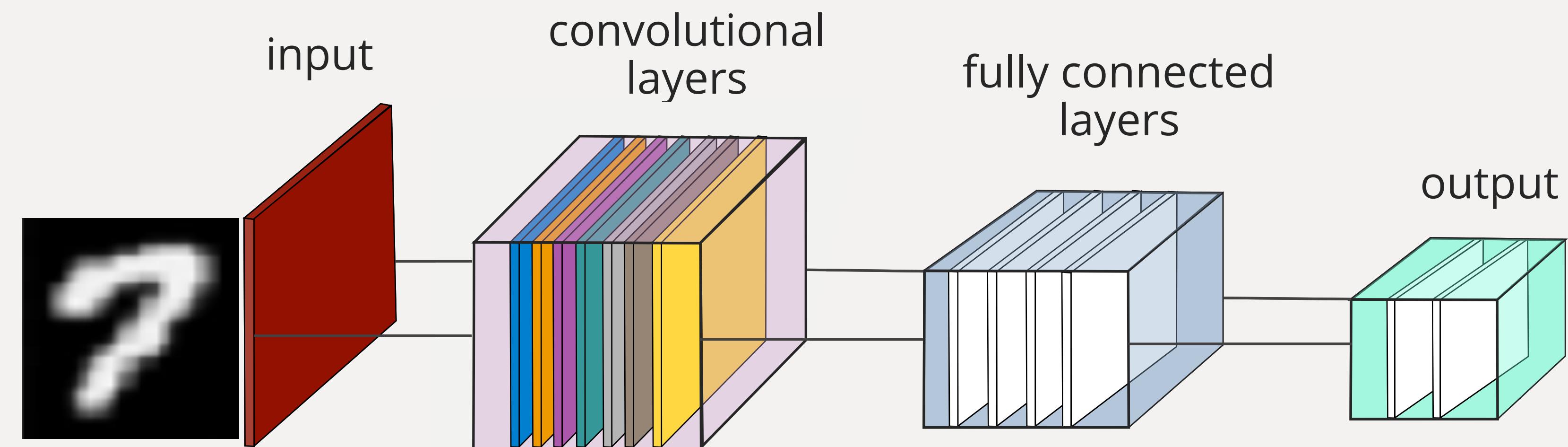


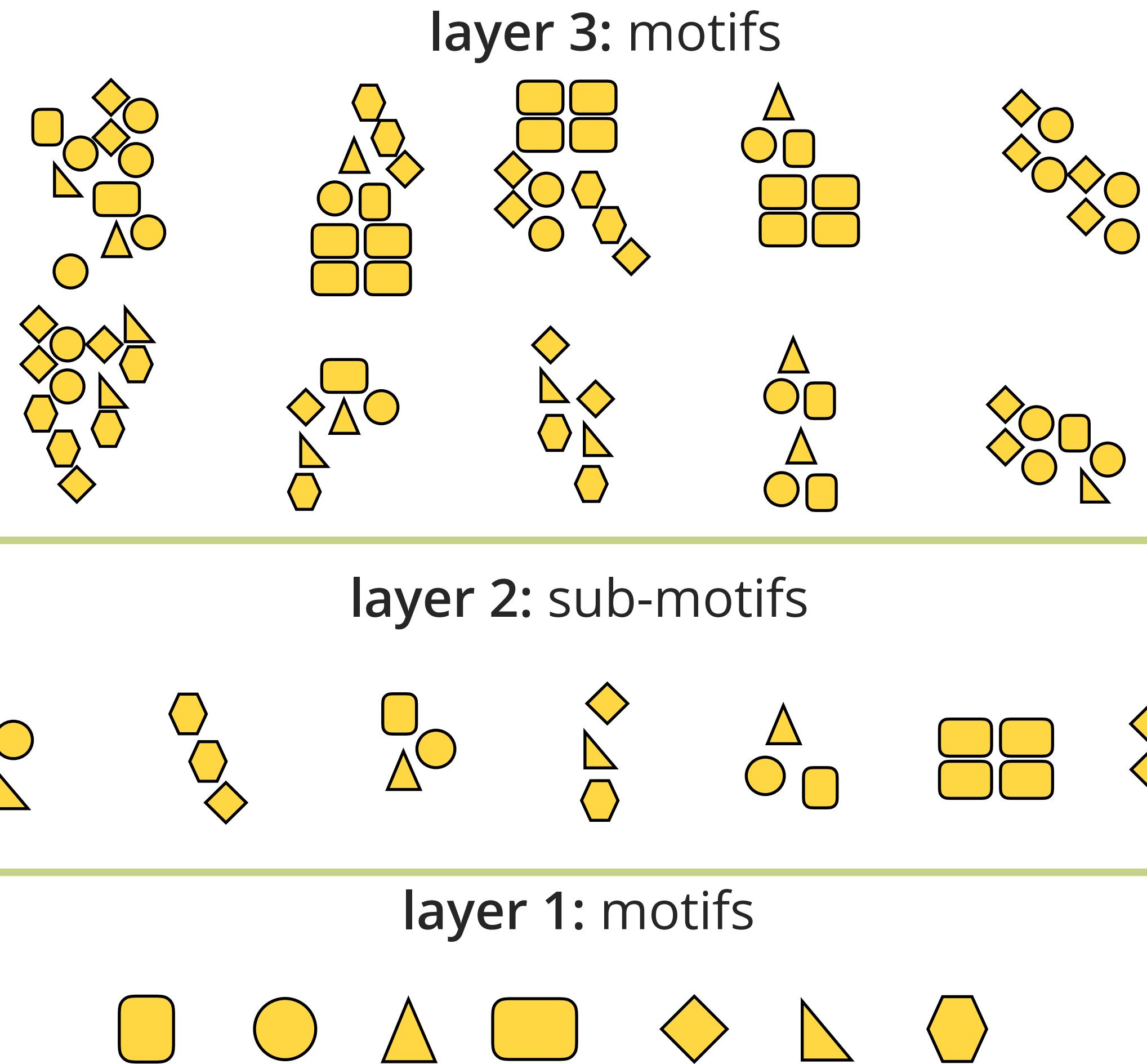
layer 2: sub-motifs



layer 1: motifs



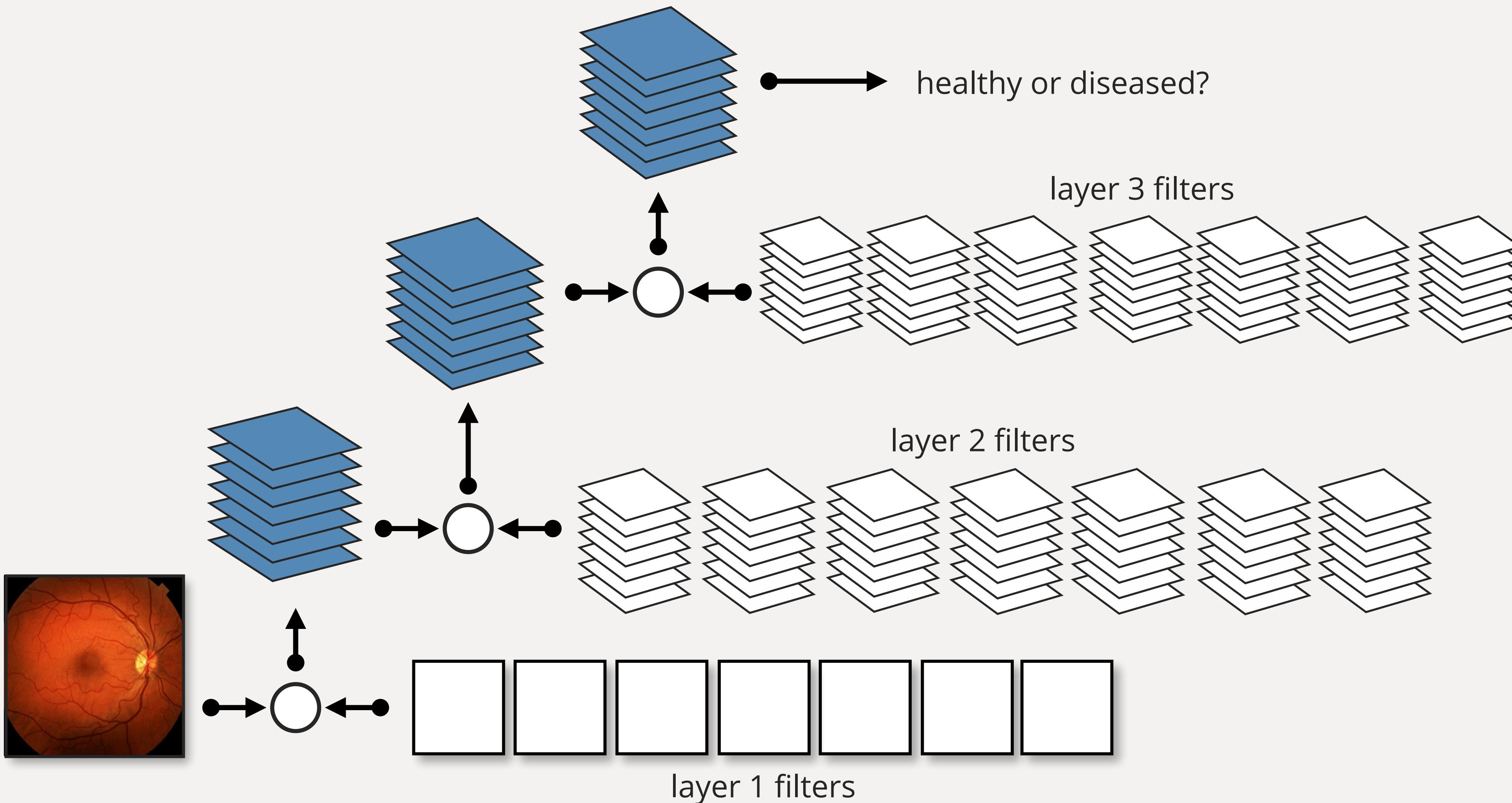


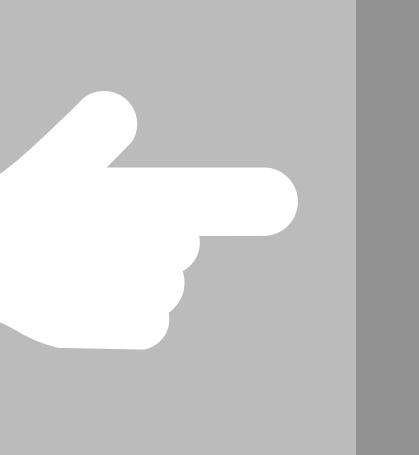


Advantages of Hierarchical Features

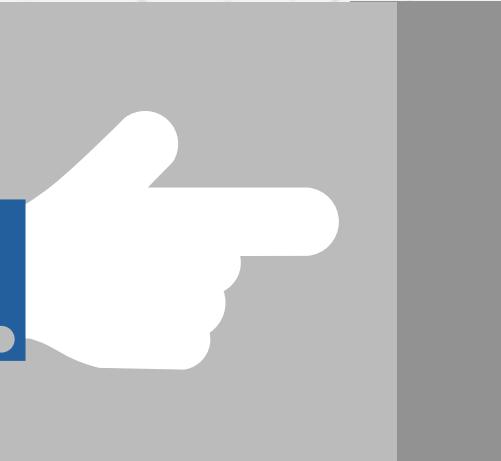
- Better leverage of all training data
- Helps aid in the classification of top-level motifs

Transfer Learning



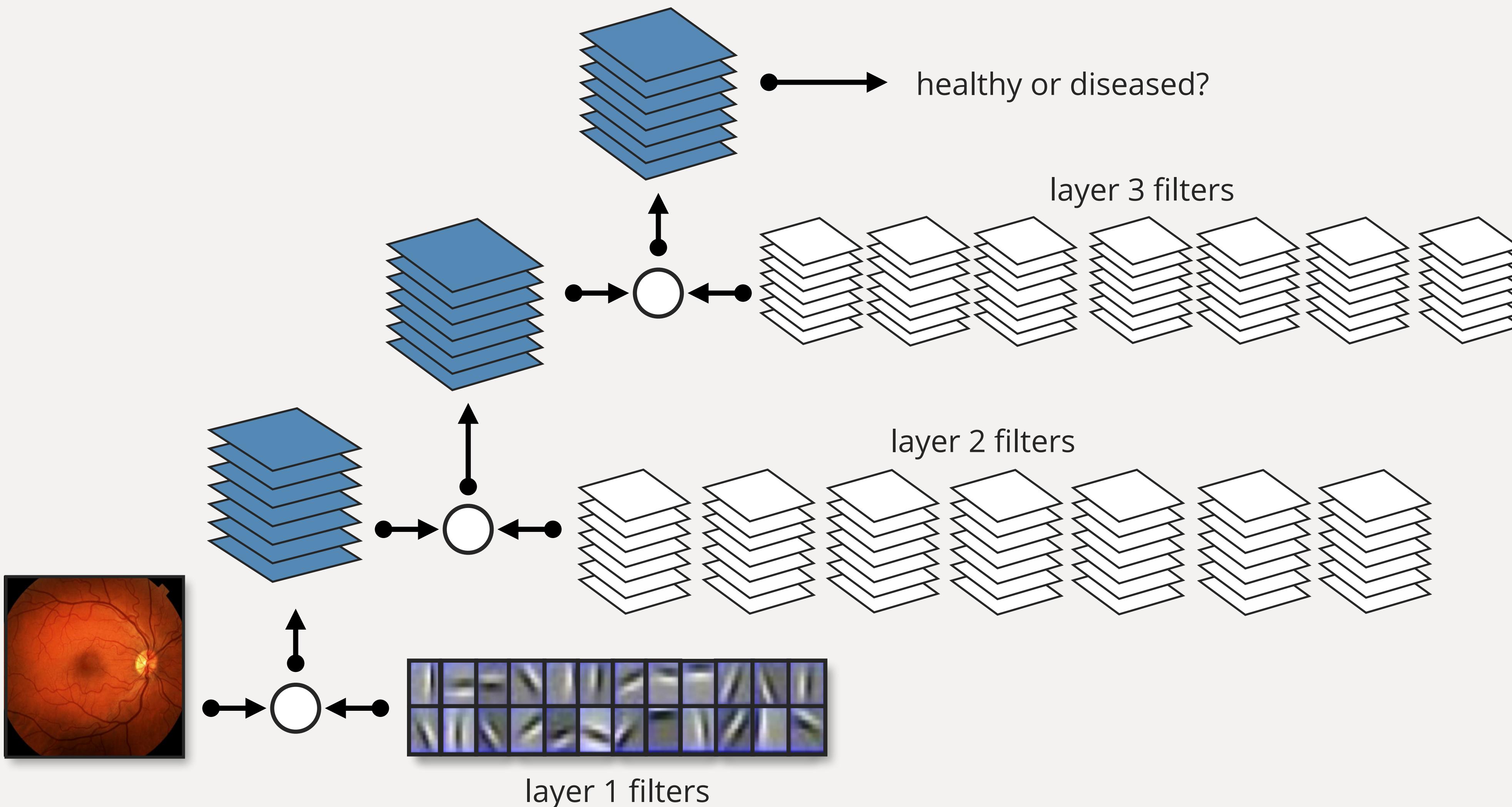


Top-level features are typically
specialized for a particular task



Low-level features are
universal to all images

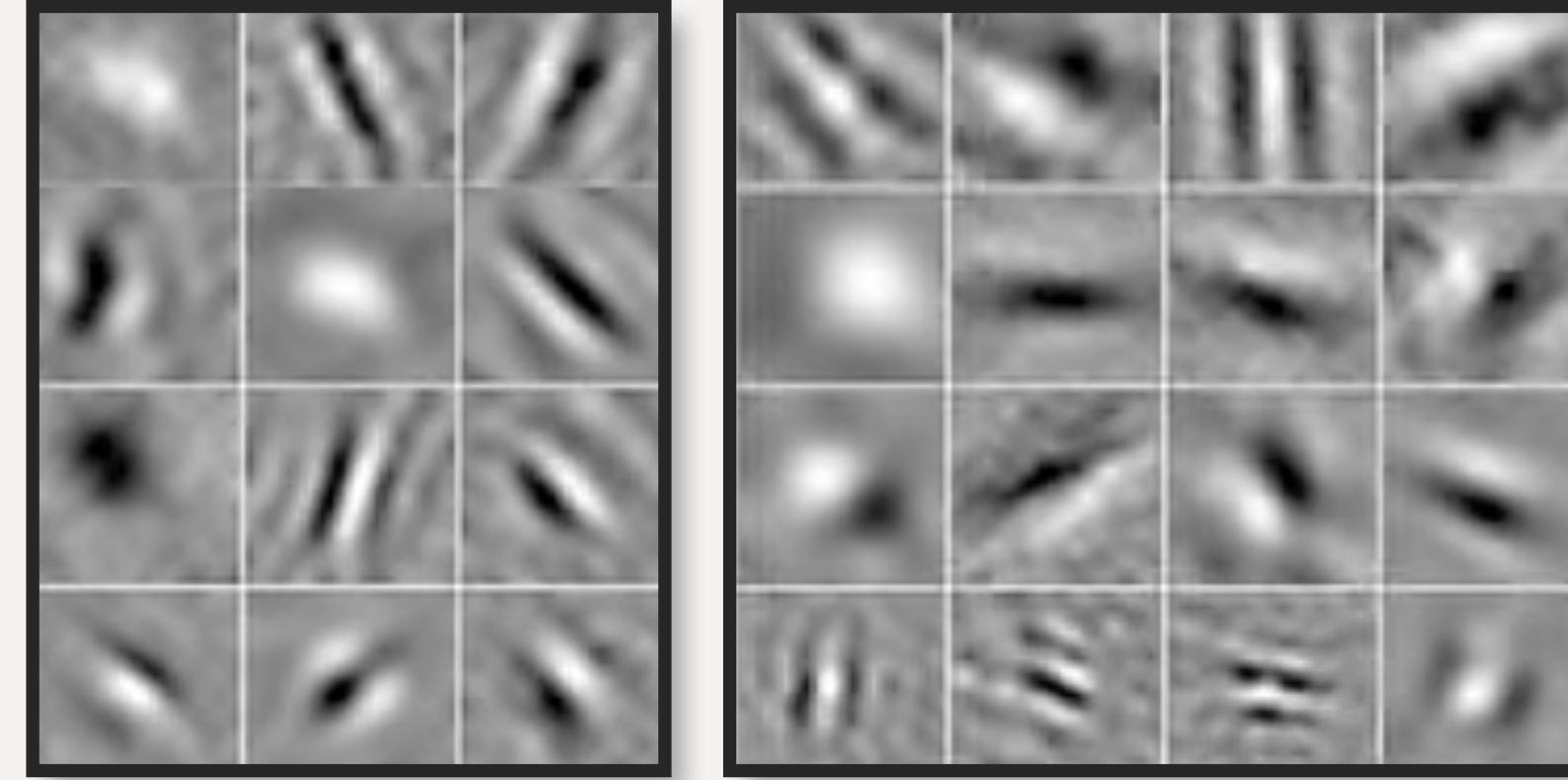
Transfer Learning



layer 1 filters:
convolutional neural network



neuron receptive fields:
macaque visual cortex



Credits

ImageNet Images

Krizhevsky et al. (2012) ImageNet Classification with Deep Convolutional Neural Networks <http://papers.nips.cc/paper/4824-imagenet-classification-with-deep-convolutional-neural-networks.pdf>