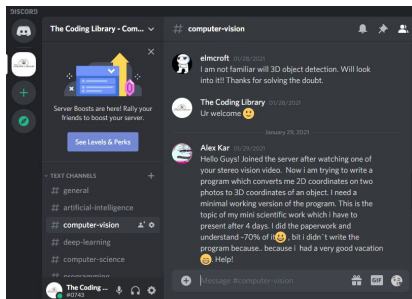


Neural Networks

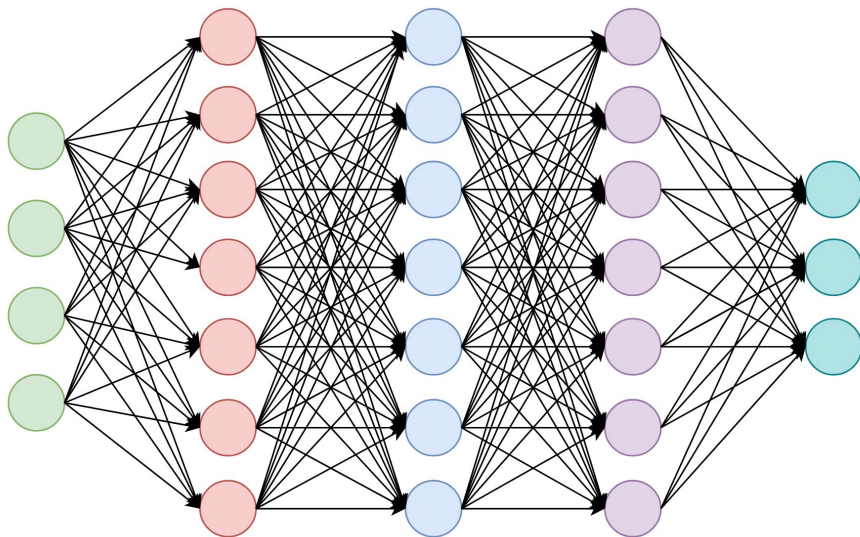
Transfer Learning and Fine-Tuning



Discord Link in Description

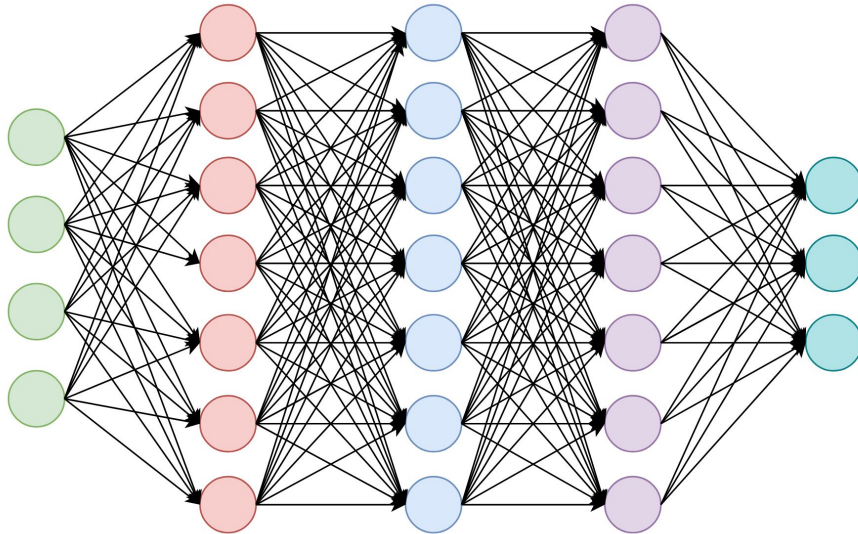
Transfer Learning

- Pretrained model used for new and similar problem
- Usually done when dataset is too small to train a full-scale model from scratch



Fine-Tuning of a Neural Network

- Retrain whole new model with dataset
- Can incrementally adapt the pretrained features to the new data



Fine-Tuning in Keras

Keras Applications

- Xception
- EfficientNet B0 to B7
- VGG16 and VGG19
- ResNet and ResNetV2
- MobileNet and MobileNetV2
- DenseNet
- NasNetLarge and NasNetMobile
- InceptionV3
- InceptionResNetV2

VGG19 function

```
tf.keras.applications.VGG19(  
    include_top=True,  
    weights="imagenet",  
    input_tensor=None,  
    input_shape=None,  
    pooling=None,  
    classes=1000,  
    classifier_activation="softmax",  
)
```