

Convolutional Neural Networks: computer vision problems, edge detection, padding, strided convolution, pooling layers, fully connected layers, implementation of convolutional neural network, implementing convolutional forward and backward propagation, implementing pooling forward and backward propagation, Implementing a Convolutional Network with TF Keras' Sequential API, Implementing a Convolutional Network with TF Keras' Functional API, LeNet-5, AlexNet and VGG Networks, Resnet Network, Inception network, 1x1 convolutions, MobileNet v1 and v2, depthwise separable convolution, EfficientNet, Implementation of ResNet with Keras, Case Study for Transfer Learning, Object Localization, Landmark Detection, Object Detection, Sliding Windows Detection, YOLO algorithm, Intersection over Union, Non-Max Supression, Anchor Boxes, Region Proposals, Semantic Segmentation, U-Net and Transpose Convolution, Implementation of YOLO and semantic segmentation with UNet, One-shot learning, Triplet loss function, Siamese network, Neural Style Transfer, 1D and 3D generalization of convolutional models, Implementing FaceNet and DeepFace models for face verification and recognition, Implementing Neural Style Transform