Artificial Neural Networks: Basic Concepts of Artificial Neurons, Single and Multi-Layer Perceptron, Perceptron Learning Algorithm, Bias, Variance, overfitting, underfitting, Activation Functions, Backpropagation learning algorithm

Optimization Approaches – GD,SGD, Mini batch GD, Momentum based GD, NAG, Adagrad, RMSprop, ADAM, Loss Functions

Regularization- L1, L2, Dataset Augmentation, Dropout, Batch-Norm

Convolutional Neural Networks: Basic Concepts of Convolutional Neural Networks. Convolution and Pooling Operation, CNN Architectures,