ARTIFICIAL NEURAL NETWORK

Unit I
Ann Definition, Taxonomy of neural net classifiers for fixed patterns, Mc-Culloch & Pitts Model, structure and working of human brain & comparison with basic ANN model, single layer network. Perceptron training algorithm, linear separability, Hebb’s learning rule, widrow & Holf’s learning rule / Delta rule, ADALINE, MADALINE, Comparison of ANN with human brain and AI characteristics and application of ANN.

Unit II
Multilayer perception, problem with linear activation function, different activation functions like sigmoidal/squashing function, linear threshold function, hyperbolic tangent and Guassian function. Rumelbart’s error back propogation algorithm (EBPA) with proof, momentum, limitations, characteristics and Application of EBPA, case study : NETTALK, two dimensional pattern recognition etc.

Unit III

Unit IV
Deterministic v/s statistical training, Boltzman training, Cauchy training, Artificial specification methods. Hopfield /recurrent network, configuration, stability constraints, Associative memory characteristics, limitations and applications Hopfield v/s boltzman machine. Competitive learning : concepts, weight change, example 7 characteristics, lateral inhibition : concepts & examples.

Unit V