Artificial Neural Networks/Curve Fitting

Curve Fitting

Curve-fitting problems represent an attempt for the neural network to identify and approximate an arbitrary input-output relation. Once the relation has been modeled to the necessary accuracy by the network, it can be used for a variety of tasks, such as series prediction, function approximation, and function optimization.

Function Approximation

Function approximation or modeling is the act of training a neural network using a given set of input-output data (typically through supervised learning) in order to deduce the relationship between the input and the output. After training, such an ANN can be used as a black box with an input-output characteristic approximately equal to the relationship of the training problems. Because of the modular and non-linear nature of artificial neural nets, they are considered to be able to approximate any arbitrary function to an arbitrary degree of accuracy. More accuracy in this case represents a tradeoff with system complexity, and the ability to generalize.

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