Artificial Neural Networks/Series Prediction

ANN can be trained to match the statistical properties of a particular input signal, and can even be used to predict future values of time series. There are a number of applications of feature prediction that have received significant research attention. Among these are financial prediction, meteorological prediction, and electric load prediction. ANN have shown themselves to be very robust in predicting complicated series, including non-linear non-stationary chaotic systems.

Financial prediction is useful for anticipating events in the economic system, which is considered to be a chaotic system. ANN have been used to predict the performance and failure rate of companies, changes in the exchange rate, and other economic metrics.

Meteorological prediction is a difficult process because current atmospheric models rely on highly recursive sets of differential equations which can be difficult to calculate, and which propagate errors through the successive iterations. Using neural nets for meteorological prediction is a non-trivial task, and there have been many conflicting reports of the efficacy of the technique.