Recurrent Networks

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 $1.\,$ Go through the Matlab Neural Network Time Series Prediction tutorial available at:

http://uk.mathworks.com/help/nnet/gs/neural-network-time-series-prediction-and-modeling.html

This tutorial uses a recurrent network with delay units (a.k.a. NARX model).

Alternatively, Backpropagation through Time (BPTT) could have been used on the same time series data.

BPTT would use the following derivative function:

http://uk.mathworks.com/help/nnet/ref/bttderiv.html

CHALLENGE: Change the NARX Matlab script, which uses standard backprop., to use BPTT on the time series data.