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This paper got favorable results from running a Wavelet Transform + ANFIS (Adaptive neuro-fuzzy inference system) predictive model on stock market time series data. In fact, it found that the Wavelet + ANFIS method outperformed Wavelet + ANN and pure ANN methods implemented in recent papers. As such, I feel that ANFIS models may warrant further study in general.

The paper splits, scales, and uses a level-3 discrete wavelet transform to separate each X series (open, high, low, and volume) into approximation/smooth series and detail series. It then uses these approximation and detail series as input for an ANFIS model in order to generate one-day-ahead predictions about closing price.

ANFIS is a type of artificial neural network that integrates ANN and fuzzy logic principles, and has been viewed as a “best-of-both-worlds” approach that combines the advantages of both types of models. It consists of a "fuzzification layer" to convert numeric values into fuzzy values, then generates a series of fuzzy if-then rules with the fuzzified inputs in order to generate predictions. ANFIS models can learn much more quickly, adapt to changes in model distributions, and capture more nonlinear structures of a time series. Combined with a wavelet transform to break the data into smooth and detailed components, this feels like a very promising model.