I don't use Neural Nets or a time series approach for the signals tournament, but I've seen interesting results in another world with the winning entry of the M4 competition: A hybrid method of exponential smoothing and recurrent neural networks for time series forecasting, Slawek Smyl. It uses Neural Networks to tune exponential smoothing parameters.

If you can't find the paper he has a walkthrough here. There are some semi-accurate python implementations in CPU and GPU, but beware that this approach is compute heavy.

Also, when dealing with equity models, one often uses return series instead of prices. Many people here will have good reasons to dislike E.P. Chan, but if you are new in quant finance you may find his books helpful to get a feel for how to treat financial data.