

Abstrakt:

Over the past decade, neural networks have achieved great success in many fields, such as image, text, and audio processing. Over the past few years, we have also seen their use in time series forecasting become more frequent. However, this requires a special approach, as data preparation, system architecture, and even training procedures are, or rather should be, different from those used in other fields.

The work is based on articles from recent years, in which the author proposed improvements to neural networks for time series forecasting. The most important of these improvements are: on-the-fly data preprocessing, hybrid architectures (weaving exponential smoothing into neural network formulas), global context, but with the possibility of adjusting to each series, training quantiles, which are slightly different from the target quantiles, starting time steps at randomly selected moments, to delay the moment of overtraining, "warming up" of recursive networks, global model but with the possibility of local, belonging to the time series, parameters, and finally dynamic neural network assemblies.