

## **Ole Winther, DTU Compute**

### **Recurrent neural networks**

*Recurrent neural networks (RNNs) are neural network models for sequential data such as time series or biological sequences. This session will provide an introduction to RNN architectures and models including the long short-term memory model (LSTM). Practical concerns for parameter tuning such as vanishing/exploding gradients will be discussed and a number of recent successful applications within speech recognition, machine translation, computer program interpretation and biological sequence analysis are given in order to highlight the versatility of the recurrent models.*

*Reading: Alex Graves, Supervised Sequence Labelling with Recurrent Neural Networks, Chapters 1-4, available from <http://www.cs.toronto.edu/~graves/preprint.pdf>*