

## Check Points: Neural Systems Part 1

If you are not able to answer some of these questions, first check the slides and lecture notes. If you still do not understand the question, send me an e-mail at [Dario.Floreato@epfl.ch](mailto:Dario.Floreato@epfl.ch)

- What are the advantages of nervous systems?
- Describe main elements of a biological neuron
- Describe membrane dynamics
- Describe types of biological neurons
- What is firing rate and firing time?
- What are the principles of synaptic plasticity in biology (Hebb and STDP)?
- What are hidden units?
- Describe McCulloch-Pitts neuron
- Different types of output functions
- What does a neuron signal? Why?
- Describe the separation of input space
- What is a bias unit?
- Describe 4 types of neural architectures
- What is local and distributed encoding?
- What is learning in an artificial neural network?
- What does Oja's rule do?
- What is a receptive field?
- What is pattern of interconnection weights in Self-Organising Maps?