



Prof. R. Wattenhofer

## Towards More Realistic Neural Networks

Artificial Neural Networks (ANN) are often compared to our brain. Especially in the popular media, the question of when ANNs can model a humans brain comes up regularly. Deep Learning practitioners and Neuroscientists know that this is far from a fair comparison, as ANNs do not aim at mimicking the human brain. However, many inspirations from Neuroscience have shaped the development of Deep Learning (just take the Perceptron as an example).

In ANNs, the activation of a neuron is a single scalar. Biological neurons on the other hand are not that simple, as there is an element of uncertainty involved. So, instead of using a single scalar, one can use a random variable to model a neurons activation in order to closer mimick its biological counterpart. We have many ideas relating to this topic that will help us to better understand certain aspects of Deep Learning. If this sounds interesting to you, do not hesitate to contact us so we can have chat.

**Requirements:** Interest in and willingness to study Machine Learning and Deep Learning. The student(s) should be able to work independently!



**Interested? Please contact us for more details!**

### Contacts

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