

# Bio-inspired deep learning

Rhine Valley

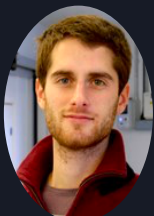
21-24 March 2023



## Interested in understanding and applying biological principles to machine learning?

This workshop introduces PhDs and PostDocs from various scientific backgrounds to “bio-inspired deep learning”. Deep learning (DL) dominates most facets of society, but its power is often based on adding more parameters to the network leading to energy requirements that far exceed the resources of research groups. To avoid these limitations, neuroscientists seek inspiration from the brain. Despite relying on slow processes, the brain outclasses most artificial neural networks regarding many tasks. To transfer the insights from this inherently biological system to the numerical nature of DL requires a fundamentally interdisciplinary approach: biological, mathematical, and computational tools must be combined. This workshop provides an introduction to all these diverse tools and their application to challenging research problems.

### Main speaker



Dr. Rui Ponta Costa leads the Neural and Machine learning group at the University of Bristol. His group works to understand the principles underlying learning in the brain. To this end, they bring neural and machine learning together across multiple levels.

### Teaching methodology

Active engagement through hands-on examples, teamwork and learning-by-doing. Small research topics will be posed to students in the form of group projects.

### Who can apply

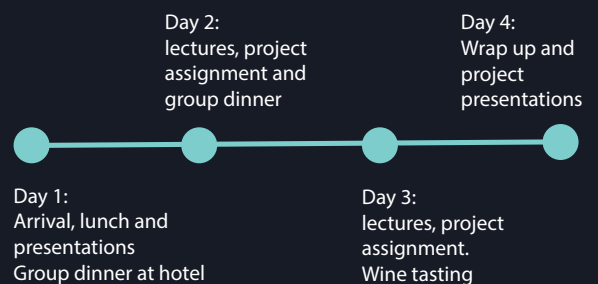
PhDs and PostDocs from any scientific background can apply. We encourage applications from both biological and computational fields. However, we expect some basic coding experience.

### The venue

Workshop and accommodation will take place at the Winery Weingut Domhof (Guntersblum). The location is ideal for distraction-free work within a relaxed but stimulating atmosphere. It can be easily reached by public transport from the city of Mainz. The accommodation, meals and venue are all paid for by the JH Foundation.



### Overview of the program



Apply before January 23

Please, fill the form:  
<https://forms.gle/zSDN2wjZgn2ET9xdA>



Questions? Contact us:

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