ID de Contribution: **133**   Type: **Non spécifié**

Introduction to Deep learning

Deep learning is leading the artificial intelligence revolution allowed by the world of data we are living in. It is a powerful method that automatically learns to address tasks from the data, with minimal preprocessing. This "Introduction to deep learning"lecture aims to give an insight on the fundamentals of deep learning. From the artificial neuron to famous deep architectures via the learning process, we will give an overview of the essential components of deep learning. We will also open the black box of neural networks to better understand their behavior. A substantial part of the lecture will be dedicated to practical hands on exercises. Key concepts studied:

• Deep learning fundamentals
◦ architecture building blocks, from the neuron to convolution
◦ learning to address tasks, the gradient descent and the backpropagation algorithms
• Going (a bit) deeper
◦ famous architectures
◦ transfer learning
• Introduction to explainability of the neural networks (GradCam)
• Some useful tools for deep learning (PyTorch, Lightning and Tensorboard)

Classification de Session: Machine Learning