



Computer Science CEA EDF INRIA Summer school 2019

“Hands-on tour to deep learning with PyTorch”

June 24 - June 28, UPMC - Sorbonne Universités – 75005 Paris, France

Recent developments in neural network approaches (more known now as "deep learning") have dramatically changed the landscape of several research fields such as image classification, object detection, speech recognition, machine translation, self-driving cars and many more. Due its promise of leveraging large (sometimes even small) amounts of data in an end-to-end manner, i.e. train a model to extract features by itself and to learn from them, deep learning is increasingly appealing to other fields as well: medicine, time series analysis, biology, simulation.

This course is a deep dive into practical details of deep learning architectures, in which we attempt to demystify deep learning and kick start you into using it in your own field of research. During this course, you will gain a better understanding of the basis of deep learning and get familiar with its applications.

By the end of this course, you will have an overview on the deep learning landscape and its applications to traditional fields, but also some ideas for applying it to new ones. For the implementations we will be using the PyTorch library in Python.

In addition to the basics of deep learning, this course will focus on two topics: graph neural networks and Bayesian deep learning.

Professeurs presentis:

- Marc LELARGE - ENS
- Andreï BURSUC - Valeo
- Timothée LACROIX - Facebook