

Practical guide to Neural Networks (Michail Smyrnakis / Hartree)

Monday, 15 July 2024 10:30 (2 hours)

This session will guide the participant through some of the practical considerations to make when looking at how neural networks can be used. You will also complete practical exercises where you will be introduced to the two main python libraries that are used with neural networks namely Pytorch and Tensorflow. You will gain some hands-on experience of applying existing libraries and pretrained neural networks to various small-scale problems.

Learning Objectives

- Understand the concept of Artificial Neural Networks and Deep Neural Networks.
- Gain familiarity to different types of advanced neural networks and areas of application for each type.
- have hands on experience with using the two main python libraries for Deep Neural Nets (Pytorch and Tensorflow).
- learn how to load data using Tensorflow and Pytorch
- understand if your trained models have underfit or overfit the data
- learn how to define a Convolutional Neural Network in both Pytorch and Tensorflow
- explore the effects of hyperparameters

Pre-requisites

- Understanding of basic mathematical concepts e.g. functions, matrices and derivatives.
- Minimal experience with Python

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