UE Introduction to Artificial Intelligence

Level
Baccalaureate +4

ECTS
3 credits

Component
UFR IM2AG (informatique, mathématiques et mathématiques appliquées)

Semester
Automne

> **Teaching language(s):** English

> **Open to exchange students:** Yes

> **Code d'export Apogée:** GBX7MO10

Presentation

Description

This course aims to introduce to students the basics of and a large overview on Artifical Intelligence, including Machine Learning, Deep Learning and Symbolic AI.

Objectives

Providing a solid background in AI, understanding the principles in AI, developing the skills to model, implement and deploy simple AI models in different contexts, analysing the advantage and the limits of AI

Course parts

CM	Lectures (CM)	19,5h
TP	Practical work (TP)	13,5h

Recommended prerequisites

Very basic notions in Linear Algebra (Matrices), Analysis and Probability, basic programming in Python

Syllabus

The course contains three parts. 1. Machine Learning: Basics, Supervised ML, Unsupervised ML, Regularization, Evaluation of ML. 2. Deep Learning: Dense neural networks, Convolution Neural Networks, Recurrent Neural Networks, Gradient Descent, Backpropagation, Large Language Model (it time permits). 3. Symbolic AI: Logic-based Knowledge, Rule-based Reasoning.

Skills

Understanding the notions and principles, manipulating simple analysis, implementing AI models

Bibliography

An introduction to Statistical Learning, very good book with online version: https://www.statlearning.com/

Useful info

Contacts

Responsables pédagogiques

Kim Thang Nguyen

✉ kim-thang.nguyen@univ-grenoble-alpes.fr

Responsables pédagogiques

Sylvain Bouveret

✉ sylvain.bouveret@univ-grenoble-alpes.fr

Campus

❯ Grenoble - University campus