USEEU6 - Applied Artificial Intelligence

Présentation

Prérequis

- Working knowledge of Python.
- Working knowledge of standard Python ML/DL libraries (sklearn, pytorch).
- Understanding of core ML/DL concepts (model, methods, training, performance evaluation, overfitting etc.).

Objectifs pédagogiques

This course introduces students to the practical applications of artificial intelligence (AI) across various industrial domains. Through a combination of lectures, hands-on projects, and case studies, students will gain the knowledge and skills necessary to develop and deploy AI solutions to solve real-world problems. Topics covered will include AI models and methods, practices for operating ML-powered solutions, usage of LLMs and ethical considerations in AI.

Programme

Contenu

The course covers the following topics:

- Introduction to Applied Artificial Intelligence
 - · Overview of AI applications in different industries.
 - Ethical considerations and responsible AI practices.
- Brief recap: Foundations of Machine Learning/Deep Learning
 - Supervised, unsupervised, and reinforcement learning.
 - $\circ~$ Classification, regression, forecasting.
 - Training, fine tuning and overfitting.
 - Performance evaluation of ML/DL models.
- Domains: computer vision, natural language processing, sequential data.
- Al Deployment and Integration
 - Model deployment strategies.
 - Introduction to cloud-based AI services.
 - Integrating AI models into applications and systems.
- Case Studies and Project Work
 - Analysis of real-world AI applications across industries.
 - Team project: Design and implementation of an AI solution for a specific use case.
- Project Presentation and Wrap-Up.
 - Final project presentations by student groups.
 - $\circ~$ Reflection on key learnings and future directions in applied AI.

Modalités de validation

Projet(s)

Description des modalités de validation

Project work; a project assignment to perform after the STC execution will also be evaluated.



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Code : USEEU6

Unité spécifique de type cours 3 crédits

Responsabilité nationale : EPN05 - Informatique / Stefano SECCI