

Course Syllabi

1. TICS-00062 NEURAL NETWORKS

2. 96 credits hours.

3. Bibliography

- Deep Learning with Python: Learn Best Practices of Deep Learning Models with PyTorch, Nikhil KetkarJojo Moolayil, 2021

4. Specific Course Information

- This subject aims to make the student aware of the central aspects of artificial intelligence and more precisely about artificial neural networks. Additionally, the aim is to define what deep learning (deep learning) is, which extends the range of most artificial intelligence problems such as voice recognition, image classification, question response, optical character recognition, text transformation into voice.
- Prerequisites:
 - TICS-00063 KNOWLEDGE REPRESENTATION
 - TICS-00064 COMPUTER SECURITY
 - TICS-00061 COMPUTER NETWORKS
 - TICS-00066 MULTI-AGENT SYSTEMS
 - TICS-00044 EMPIRICAL SOFTWARE ENGINEERING

5. Learning Objectives of the Course

- Understand the nature of neural networks and their applicability in the modern world.
 - Know in detail the artificial neural networks
 - Understand where these techniques are applied today and how they are implemented
 - Explain the main trends that drive the boom of deep learning.
 - Examine the concepts about the main characteristics of deep neural networks, their application in supervised learning and the relevance of using these techniques
 - Know the ap more common lications in the field of deep learning
- Learning Outcomes
 - Learn the difference between machine learning and deep learning
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 - Analyzes and designs systems using neural networks
 - Knows the utility of neural convolution networks
 - Know the utility of recurrent neural networks
 - Knows the utility of neural convolution networks
 - Acquires a general perspective on what artificial intelligence is
 - Acquires a general perspective on what artificial intelligence is
 - Know the utility of recurrent neural networks

6. Course Topics

- Introduction to the course
- Introduction to automatic learning and learning
- Artificial neural networks
- Automatic differentiation in deep learning
- Training models of deep learning
- Convolutional neural networks

- Recurrent neural networks
- Advances in deep learning