ARTIFICIAL INTELLIGENCE MASTER CLASS

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What you Learn on this Artificial Intelligence Master Class?

An AI course provides an introduction to the principles, techniques, and applications of Artificial Intelligence. Topics covered include machine learning, natural language processing, computer vision, expert systems, and robotics. Students gain both theoretical knowledge and hands-on experience. The course explores real-world applications and ethical considerations in AI. By completing the course, students develop skills in designing and implementing AI systems, preparing them for AI-related careers or further studies.

Total Duration: 45 Hrs | Modules: 7 | Assignments: 15 | Projects – 12

Related Tags : Python, ML, DL, OpenCV, Algorithms,

Modules and description:

Introduction of AI

Duration: 1 hrs

Module 1: Python for AI

Duration: 3hrs

Python For Artificial Intelligence And Installation

Basic Python data structure- Part I

Python fundamental programming– Part II

Description:

Python for Artificial Intelligence and Installation:

Learn how to install Python and set up your machine learning environment.

Basic Python Programming - Part I:

Master the data structure of Python programming. This content cover data types, list, tuple, set, dictionary, c

Python Programming - Part II:

Explore fundamental Python topics, this content covers conditional statement, looping statement, functions and modules

Module 2: Machine learning Libraries:

Duration: 5 hrs

Pandas Library

NumPy for Prediction

Matplot Visualisation

Seaborn Visualisation

Sklearn Library

Key Description:

Python Pandas: Explore the powerful pandas library in Python for data manipulation and analysis. Pandas provides easy-to-use data structures and data analysis tools, making it ideal for tasks like data cleaning, transformation, filtering, and aggregation.

Python NumPy: Dive into NumPy, a fundamental library for scientific computing in Python. NumPy provides efficient data structures and functions for working with arrays and matrices, enabling advanced mathematical and statistical operations.

Python Matplotlib and Seaborn: Learn to create visually appealing plots and data visualizations using Matplotlib and Seaborn libraries. Matplotlib offers extensive plotting capabilities, while Seaborn provides a higher-level interface with built-in styles and advanced statistical visualization options.

Python Scikit-learn: Explore the Scikit-learn library, a popular machine learning framework in Python. Scikit-learn offers a comprehensive set of tools for various machine learning tasks, including

Module 3: Machine learning overview and projects

Duration: 4hrs

Introduction of machine learning and types:

Training and evaluation the various ML model

Breast Cancer Classification

Employee salary prediction ML system

Movie recommendation system ML system.

Key description:

Introduction of machine learning and types:

This content introduces machine learning, which enables computers to learn from data and make predictions. It covers different types of machine learning, including supervised, unsupervised

Training and evaluation of ML models:

This content focuses on the process of training and evaluating machine learning models. It explains how models are trained using labelled data and algorithms, and how they learn to make predictions or classify new data. It covers techniques for evaluating model performance, such as accuracy, precision, recall, and F1 score.

Module 4: Natural Language process

Duration: 5 hrs

introduction of NLP and its terminology | How to install NLP Libraries

Hate speech detection ML system

Speech emotion recognition in NLP

How to create AI virtual assistant using python

Language translator

Key Description:

Hate speech detection ML system:

This content explores the development of a machine learning system that can identify and classify hate speech in text. It involves training models to recognize offensive language and discriminatory content, enabling the detection and moderation of harmful speech.

Speech emotion recognition in NLP:

This content focuses on using natural language processing (NLP) techniques to recognize and analyse the emotions conveyed in spoken or written text. It involves training models to identify emotions such as happiness, sadness, anger, or fear, which can have various applications in areas like sentiment analysis and customer feedback analysis.

How to create AI virtual assistant using Python:

This content guides learners in building an AI-powered virtual assistant using the Python programming language. It covers the steps to develop conversational agents, integrate speech recognition and synthesis, handle user queries, and provide intelligent responses, enabling the creation of a personalized virtual assistant.

Language translator:

This content explores the development of a language translation system using machine learning. It involves training models to translate text from one language to another, enabling communication and understanding across different languages. The content covers techniques such as sequence-to-sequence models and attention mechanisms to achieve accurate translations.

Module 5: Deep learning overview and Project

Duration: 8 hrs

Introduction of deep learning |How to install DL libraries

Designing your first Neural network.

Object recognition from pretrained model

Image classification using CNN

leaf disease detection using deep learning.

Finger print authentication using deep learning

hand written recognition

traffic sign Recognition using cnn and keras

label reading using OCR

Drowsiness detection using DL

Key Description:

This content provides an overview of deep learning and its applications, with a focus on image classification using Convolutional Neural Networks (CNNs). It includes a real-time project that allows you to apply deep learning techniques to solve a specific problem. By completing this content, you will gain a solid understanding of deep learning, acquire practical experience in image classification, and be prepared to tackle real-world projects in areas like computer vision and natural language processing.

Module 6: Computer Vision overview and real time project

Duration: 6 hrs

Introduction of computer vision Open CV | How to install computer vision libraries

Coloring the Image old to B&W

Face and eye detection in Open CV

Vehicle counting

Object tracking based on colour in opencv

Face recognition using opencv

Face mask detection using opencv

Emotion recognition through the facial express.

Key Description:

This content provides an overview of computer vision, a field that focuses on enabling computers to understand and interpret visual data. It covers the fundamental concepts, techniques, and applications of computer vision, including image processing, object detection, and image classification.

The content also includes a real-time project that utilizes OpenCV (Open Source Computer Vision Library) and Convolutional Neural Networks (CNNs). You will have the opportunity to work on a hands-on project that involves applying computer vision techniques in real-time scenarios. This project may involve tasks such as real-time object detection or video classification using CNNs and OpenCV.

ARTIFICIAL INTELLIGENCE LEARNING PATH:

Python for Artificial Intelligence – Python basics, Python data structures, Python fundamental programming's

Python Libraries – Tools: Pandas, NumPy, Matplotlib, Seaborn, Sklearn

Machine learning – overview of ML, Supervised, Unsupervised projects

Natural Language process – Overview of NLP, projects

Deep learning – overview Of DL and real time projects

Computer vision – overview of computer vision, real time projects