

urbancode>

Training & Solutions



PYTHON WITH CHAT GPT COURSE

Course Curriculum

PYTHON PROGRAMMING 101

Module 1: Introduction to Python

- Installing Python and necessary libraries (e.g., Anaconda)
- Running Python code (interpreters, IDEs)
- Basic syntax and data types (numbers, strings, lists, dictionaries)

Module 2: Control Flow and Functions

- Conditional statements (if, elif, else)
- Loops (for, while)
- Functions (defining, calling, parameters, return values)

Module 3: Python Data Structures

- Lists, tuples, and sets
- Dictionaries and their applications
- Working with arrays (NumPy)

Module 4: File Handling and Input / Output

- Reading from and writing to files
- CSV, JSON, and other common file formats
- Standard input and output

Module 5: Data Manipulation with Pandas

- Introduction to pandas library
- Loading and exploring data
- Data cleaning, filtering, and transformation
- Aggregation and grouping operations

ChatGPT: A Comprehensive Overview of OpenAI's Chatbot & Its APIs

Required Knowledge:

- Proficiency in Python programming, encompassing core Python and data science packages.

Course Goals:

- Explore the landscape of Generative AI, discussing various models along with their pros and cons.
- Utilize reinforcement learning to enhance GenAI controls and performance.
- Analyse and measure the quality of algorithms, employing metrics for model performance assessment.
- Recognize and address potential risks within the Trustworthy AI framework.
- Delve into Long-Lived Models (LLMs), emphasizing their functions and optimal applications.

Level 1: Introduction

- Module Introduction
- ChatGPT, GPT Models & Large Language Models (LLMs)
- LLMs & Neural Networks
- The ChatGPT Training Data & Understanding Tokens
- It's All About Word Prediction!
- Model Finetuning & Moderation
- ChatGPT Limitations
- Limited Context & Token Limits
- A Tour Through The ChatGPT Interface
- GPT Model Versions & ChatGPT Plus
- Writing Prompts - The Basics
- Editing Prompts & Regenerating Responses
- Beware of Hallucinations
- Continuing Output Generation
- Turning On ChatGPT Web Browsing
- Introducing ChatGPT Plugins
- The Code Interpreter
- Working with Third Party Plugins

Level 2: Prompt Engineering

1. Intro to Prompt Engineering

- What's a Prompt?
- Why we need it.
- Using the Prompt List.
- Chat GPT's limitations.
- Role of a Prompt Engineer.

2. Understanding LLM's

- Understand GenAI
- Understanding of Large Language Models & Importance
- Overview : to AI Text Generation (ChatGPT, Google's BARD, GPT4 etc.)
- Basics of ChatGPT & Prompt Engineering

3. Prompt Engineering (Design, Writing, & QC of Prompts)

- Prompts List & How to use it?
- Common prompt mistakes.
- Types of Prompts (e.g., Standard, Role, Zero-shot, Few-shot, Thought Chain).
- Design effective prompts that elicit meaningful responses from LLMs (ChatGPT)
- Understand prompt quality control to ensure prompts to train LLMs are high quality
- Tips & challenges in prompting.

4. ChatGPT – Productivity Prompts

- Email Copy Writer/Email Marketer
- English – Translation, Vocabulary, and Grammar
- Programming Assistant/Web Developer
- Digital Product Creator
- Research

Level 3: Using GPT API

- Comparing ChatGPT & The OpenAI APIs
- GPT 3.5 vs GPT 4: Choosing the Right API Model
- Understanding Tokens & API Pricing
- Prerequisites to Use the API (Jupyter notebook, subscription to OpenAI API)
- Understanding Chat Completion Endpoints
- Creating our First Python App Using the API
- Understanding the API Request
- Adding Parameters
- Understanding the API Response Object
- Creating a Text Summarization Tool
- Processing Text From Files & Create New Files with API Generated Content

Level 4: Introduction to Langchain