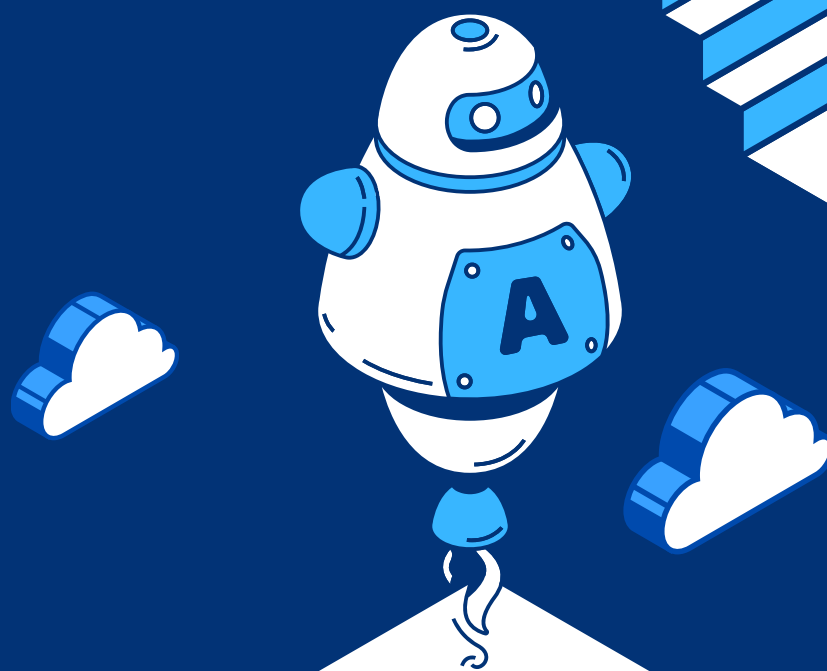


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Know your future as data scientist & artificial intelligence professional

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Data Scientist

Machine Learning Engineer

Deep Learning Engineer

Data Mining Specialist

AI/ML Model Validator

AI Search Scientist

Data Analyst

Data Visualisation Specialist

AI Product Manager

AI Chatbot Designer

Big Data Engineer

AI Consultant

Quantitative Analyst

AIOps Specialist

NLP Engineer

Computer Vision Engineer

Business Intelligence Analyst

Algorithm Developer

Conversational AI Developer

AI Solution Architect

Skillset Covered



Data Analytics /
Business Analytics



Ensemble
Techniques



Data Visualisation



Natural Learning
Processing



Machine Learning
Algorithms



Forecasting
Analytics



Statistics



Generative
AI

Learning path flow



Course Module Information

Module 1

Excel

In this module, we will dive into the significance of Excel as a powerful data management tool, emphasizing the importance of structured data organization and efficient data manipulation techniques. Our exploration will cover Excel's data structures, including tables and named ranges, alongside best practices for enhancing data accessibility and analysis.

Module 2

MySQL

In this module, we will go through the importance of MySQL as a relational database management system, examining its architecture and the essential role of data types in optimizing database performance. We will navigate through the various data types supported by MySQL, including numeric, string, and date/time types, while also highlighting the importance of efficient data storage and retrieval techniques.

Module 3

PowerBI

In this module, we are going to cover the significance of Power BI for data visualization and business intelligence, focusing on its capabilities in data modelling, interactive reporting, and efficient data management techniques. Through this exploration, we will highlight the importance of utilizing star schemas for optimal data organization and the role of DAX (Data Analysis Expressions) in enhancing data analysis and reporting efficiency.

Module 4

Python

Now, in this module, we will delve into the significance of Python programming, focusing on its role in algorithmic thinking and the development of efficient coding practices. Our exploration will encompass essential data structures and algorithms, alongside effective memory management techniques tailored for Python.

Module 5

Data Structures and Algorithms (DSA) using Python

In this module, we will dive into the significance of Data Structures and Algorithms (DSA) using Python, emphasizing the importance of efficient coding practices. Our exploration will cover various data structures, algorithmic strategies, and essential memory management techniques to optimize performance and resource utilization in Python applications.

Module 6

Pandas

In this module, we are going to cover the significance of Pandas for data manipulation and analysis, emphasizing its role in handling structured data efficiently. We will navigate through its key functionalities, including data frames, series, and data cleaning techniques, while also exploring the integration of Pandas with other libraries for enhanced data processing capabilities.

Module 7

NumPy

In this module, we will go through the importance of NumPy in scientific computing, emphasizing its role in efficient data manipulation and numerical analysis. We will navigate through its powerful array structures, explore vectorized operations, and understand memory management techniques that enhance performance in large-scale computations.

Module 8

Data Visualization

In this module, we will dive into the significance of data visualization and the necessity of effective graphical representation, focusing on three powerful libraries: Matplotlib, Seaborn, and Plotly. We will navigate through their unique features, exploring how Matplotlib serves as a foundational tool for static plots, Seaborn enhances aesthetic appeal for statistical graphics, and Plotly enables interactive visualizations that engage users in data exploration.

Module 9

Probability

In this module, we will go through the importance of Probability, examining its fundamental concepts and applications. We will navigate through key topics such as probability distributions, conditional probability, and statistical inference.

Module 10

Statistics

In this module, we are going to cover the importance of Statistical Analysis and the necessity of data interpretation, exploring Descriptive and Inferential Statistics along with Probability Theory and Hypothesis Testing.

Module 11

Supervised Machine Learning

Now, in this module, we will delve into the significance of Supervised Machine Learning, examining its role in predictive modelling and classification tasks. We will navigate through key concepts such as labelled data, training and testing processes, and various algorithms used for supervised learning.

Module 12



Ensemble Learning

In this module, we will dive into the significance of Ensemble Learning and its role in enhancing predictive accuracy. By combining multiple models, we can effectively address the limitations of individual learners, thereby improving performance across various applications, including classification and regression tasks. Through techniques such as bagging, boosting, and stacking, we will explore how ensemble methods leverage diverse algorithms to minimize bias and variance, resulting in more robust and reliable predictions.

Module 13



Feature Selection and Parameter Tuning

In this module, we are going to cover the significance of feature selection and parameter tuning, emphasizing their roles in enhancing model performance. We will navigate through various techniques for feature selection, including filter, wrapper, and embedded methods, while also exploring effective strategies for parameter tuning to optimize our machine learning models.

Module 14

Unsupervised Learning

In this module, we will go through the importance of Unsupervised Learning, exploring its applications in pattern recognition and data clustering, while examining key techniques such as k-means clustering and hierarchical clustering.

Module 15

Recommendation System

Now, in this module, we will delve into the significance of Recommendation Systems, emphasizing their role in personalizing user experiences. This exploration will cover the underlying principles of collaborative filtering and content-based filtering, alongside the implementation of machine learning algorithms to enhance prediction accuracy and user satisfaction.

Module 16



Neural Network and Deep Learning

In this module, we will dive into the significance of Neural Networks and the transformative role of Deep Learning in modern AI, examining how these technologies enable machines to learn from vast amounts of data, recognize patterns, and make informed decisions across various applications.

Module 17



Computer Vision

In this module, we are going to cover the significance of Computer Vision, emphasizing its role in transforming visual data into actionable insights. Our exploration will encompass key techniques such as image acquisition, feature extraction, and object recognition, alongside advanced methodologies like deep learning and convolutional neural networks (CNNs). Additionally, we will address the challenges of scene understanding and motion analysis, highlighting the necessity of robust algorithms for effective visual interpretation and real-world applications.

Module 18



Natural Language Processing (NLP)

In this module, we will go through the importance of Natural Language Processing (NLP) and its vital role in understanding and generating human language. We will navigate through key concepts such as linguistic models, machine learning techniques, and the intricacies of semantic analysis, all while emphasizing the importance of effective communication and data interpretation in NLP applications.

Module 19



Generative AI

In this module, we are going to cover the significance of Generative AI and its transformative impact on various industries, exploring its capabilities in content creation, automation, and decision-making processes. Additionally, we will examine how Generative AI enhances productivity and fosters innovation by leveraging advanced machine learning techniques and data synthesis.

In this module, we will dive into the significance of Prompt Engineering and its critical role in optimizing interactions with generative AI models. This exploration will encompass the techniques for crafting effective prompts, the impact of structured instructions on AI output quality, and the necessity of understanding user intent to enhance AI responsiveness and relevance.

Tools List



Projects



Retail Project

Build an end to end real time data processing application using spark streaming and Kafka

AWS

Spark

Spark Streaming

Apache Kafka

Adv. ML Case Study - Telecom Churn

Help a telecom company identify customers that are likely to churn and make data-driven strategies to retain them from the perspective of a data scientist.

Logistic Regression

Tree Models

Boosting

Model Selection

Classification

Regularization

Feature Engineering

Model Evaluation

Business Problem Solving

ML Modelling

Certification after Completion



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