Training Course on Data Science for Artificial Intelligence

Professional Development Training Course Outline

Category	Artificial Intelligence And Block Chain	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today's rapidly evolving technological landscape, the convergence of **Data Science** and **Artificial Intelligence (AI)** is driving unprecedented innovation across industries. This intensive training course is meticulously designed to equip participants with the fundamental and advanced skills necessary to excel in this dynamic field. By mastering the core principles of **data manipulation**, **statistical analysis**, **machine learning algorithms**, and **deep learning techniques**, learners will gain the practical expertise to develop and deploy intelligent systems. This program emphasizes a hands-on approach, blending theoretical knowledge with real-world case studies to foster a deep understanding of how **data-driven insights** power the next generation of AI applications.

This comprehensive curriculum addresses the growing demand for professionals who can effectively bridge the gap between raw data and actionable intelligence. Participants will learn to navigate the entire **data science lifecycle**, from data acquisition and preprocessing to model building, evaluation, and deployment. Through engaging modules and practical exercises, this course empowers individuals to contribute meaningfully to the development of cutting-edge **AI solutions**, enabling them to leverage the power of **big data analytics** and **predictive modeling** to solve complex business challenges and drive future innovation.

Programme Curriculum

Training Course on Data Science for Artificial Intelligence

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Course Duration

5 days

Course Objectives

Upon completion of this Data Science for Artificial Intelligence training course, participants will be able to:

1. Understand the fundamental concepts and applications of **Data Science in AI**.
2. Master essential techniques for **data acquisition and preprocessing** using industry-standard tools.
3. Apply various **statistical methods** for exploratory data analysis and inference.
4. Develop and implement a range of **machine learning algorithms** for classification and regression tasks.
5. Build and evaluate **deep learning models** using frameworks like TensorFlow and PyTorch.
6. Perform effective **feature engineering and selection** to optimize model performance.
7. Utilize **data visualization techniques** to communicate insights effectively.
8. Understand the principles of **model evaluation and selection** for real-world applications.
9. Deploy **machine learning models** into production environments.
10. Apply **ethical considerations** and best practices in data science and AI development.
11. Work with **big data technologies** and distributed computing frameworks.
12. Understand the role of **natural language processing (NLP)** in AI applications.
13. Explore advanced topics such as **reinforcement learning** and **generative models**.

Organizational Benefits

Organizations that invest in this training course can expect to realize several key benefits:

- Equip teams with the skills to develop and implement AI-driven solutions, fostering innovation across departments.
- Empower employees to leverage data insights for more informed and strategic business decisions.
- Enable the automation of tasks and processes through intelligent systems, leading to greater operational efficiency.
- Develop in-house expertise in a rapidly growing field, providing a significant competitive edge.

- Foster a data-driven culture with professionals who understand how to effectively manage and analyze large datasets.
- **:** Demonstrate a commitment to employee development in cutting-edge technologies, attracting and retaining skilled professionals.
- Build a team capable of tackling complex business challenges using advanced analytical techniques.
- Optimize resource allocation and identify cost-saving opportunities through data-driven insights.

Target Audience

This training course is ideal for individuals in the following roles or with the following backgrounds:

1. Data Analysts and Business Intelligence Professionals
2. Software Developers and Engineers
3. IT Professionals seeking to transition into AI
4. Researchers and Scientists
5. Business Managers and Leaders interested in AI strategy
6. Graduates and Post-graduates in STEM fields
7. Individuals with a foundational understanding of programming and mathematics
8. Anyone passionate about the intersection of data and artificial intelligence

Course Outline

Module 1: Fundamentals of Data Science and AI

- Introduction to Data Science: Concepts, Workflow, and Applications
- Overview of Artificial Intelligence: History, Types, and Future Trends
- The Synergy Between Data Science and AI: Enabling Intelligent Systems
- Essential Mathematical and Statistical Concepts for Data Science and AI
- Introduction to Programming Languages for Data Science (e.g., Python)

Module 2: Data Acquisition, Preprocessing, and Exploration

- Data Sources and Collection Techniques: APIs, Databases, Web Scraping
- Data Cleaning and Handling Missing Values and Outliers
- Data Transformation and Feature Scaling Techniques
- Exploratory Data Analysis (EDA): Visualization and Summary Statistics
- Introduction to Data Management and Storage Solutions

Module 3: Statistical Methods for Data Analysis

- Probability Theory and Distributions
- Hypothesis Testing and Statistical Inference
- Regression Analysis: Linear and Polynomial Regression
- Time Series Analysis and Forecasting
- Dimensionality Reduction Techniques (e.g., PCA)

Module 4: Machine Learning Algorithms

- Supervised Learning: Classification Algorithms (e.g., Logistic Regression, SVM, Decision Trees)

- Supervised Learning: Regression Algorithms (e.g., Linear Regression, Random Forests, Gradient Boosting)
- Unsupervised Learning: Clustering Algorithms (e.g., K-Means, DBSCAN)
- Unsupervised Learning: Association Rule Mining
- Model Evaluation and Selection Metrics

Module 5: Deep Learning Techniques

- Introduction to Neural Networks: Architecture and Activation Functions
- Convolutional Neural Networks (CNNs) for Image Recognition
- Recurrent Neural Networks (RNNs) for Sequential Data
- Deep Learning Frameworks: TensorFlow and PyTorch
- Training and Optimizing Deep Learning Models

Module 6: Feature Engineering and Model Development

- Feature Selection and Extraction Techniques
- Handling Categorical and Numerical Features
- Building End-to-End Machine Learning Pipelines
- Model Interpretability and Explainability (e.g., SHAP, LIME)
- Hyperparameter Tuning and Optimization

Module 7: Model Deployment and Productionization

- Deployment Strategies: Cloud, Edge, and On-Premise
- Containerization and Orchestration (e.g., Docker, Kubernetes)
- Model Monitoring and Maintenance
- Building Scalable AI Applications
- APIs and Web Services for Model Integration

Module 8: Advanced Topics and Ethical Considerations in AI

- Natural Language Processing (NLP) Fundamentals and Applications
- Reinforcement Learning Concepts and Algorithms
- Generative Models (e.g., GANs, VAEs)
- Ethical Implications of Data Science and AI (Bias, Fairness, Privacy)
- Future Trends and Research Directions in Data Science and AI

Training Methodology

This training course will employ a blended learning approach, combining:

- **Interactive Lectures:** Engaging presentations covering theoretical concepts and real-world examples.
- **Hands-on Labs and Exercises:** Practical coding sessions using Python and relevant libraries.
- **Case Studies:** Analysis of real-world AI applications and data science projects.
- **Group Discussions and Collaborative Projects:** Opportunities for peer learning and teamwork.
- **Quizzes and Assessments:** Regular evaluations to track progress and understanding.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com