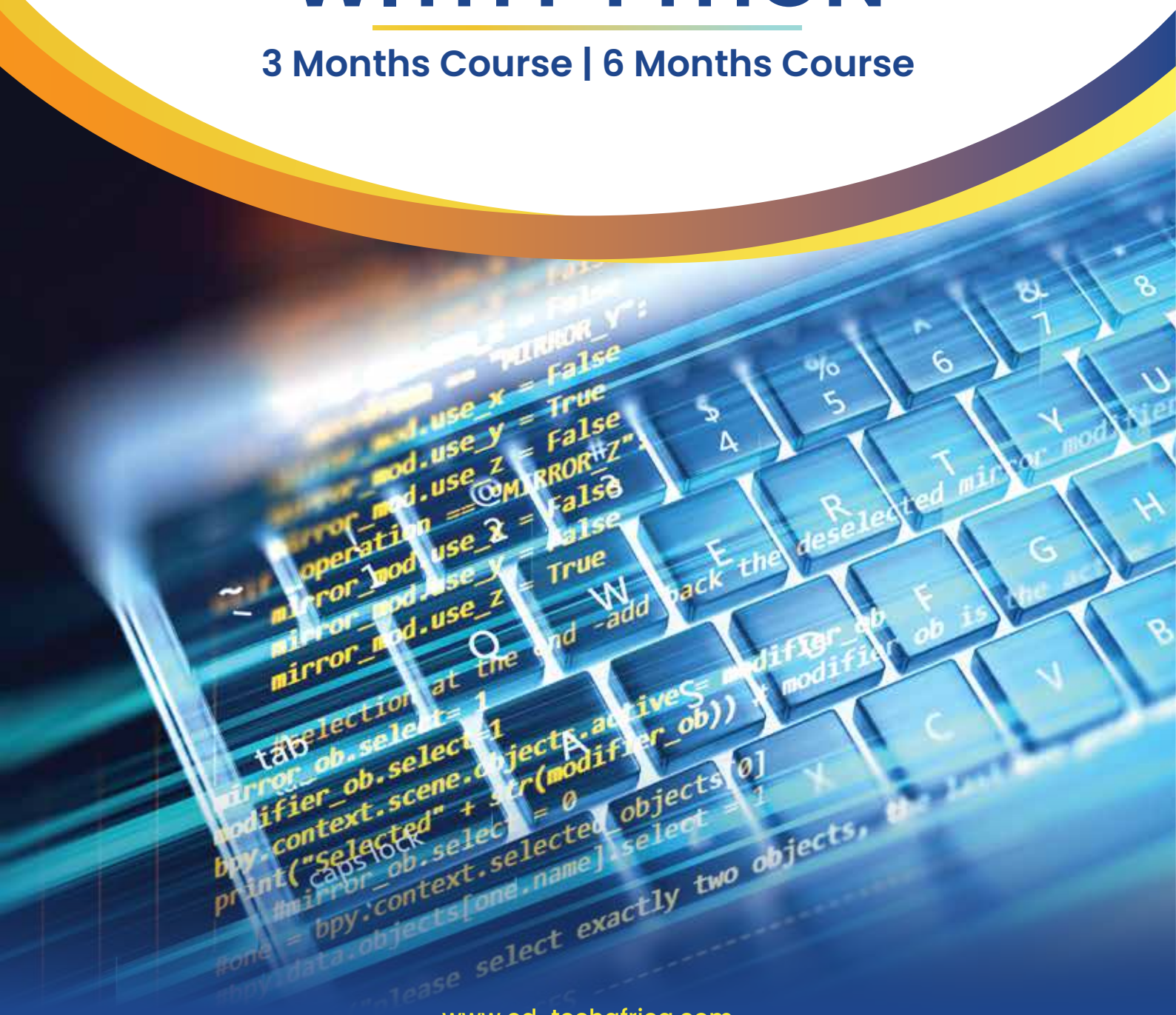# Ed-Tech
AFRICA

AI & ML
WITH PYTHON

3 Months Course | 6 Months Course

Ed-Tech
A F R I C A

Transforming education
through technology

AI & ML with Python

A course designed for a comprehensive and a focused approach towards overall development and learning with all powerful Python.

Curriculum Index

✳ MODULE –1 PYTHON
1. Introduction and Basics of Python
2. Operators
3. Conditional Statements
4. While Loops
5. Lists
6. Strings
7. For Loop
8. Functions
9. Dictionary
10. Tuples
11. Set
12. Object-Oriented Programming
13. File Handling
14. Exception Handling
13. Git and GitHub

3 WEEK

✳ Module – 2 Python Toolkit & Data Visualization
1. NumPy
2. Pandas
3. Matplotlib

1 WEEK

✳ Module – 3 Mathematics for Machine Learning
1. Fundamentals of Probability
2. Fundamentals of Statistics

1 WEEK

✳ Module – 4 Artificial Intelligence
1. Introduction
2. Applications
3. Types of Artificial Intelligence

1 WEEK

✳ Module – 5 Machine Learning Introduction
1. Introduction of Machine learning
2. Environment setup
3. Application
4. Types of Machine learning

1 WEEK

❋ Module – 6 Data Preprocessing

1. Data wrangling
2. Importing Libraries and Dataset
3. Handling Missing Data
4. Encoding Categorical Data
5. Splitting Datasets
6. Normalizing the Data
7. Finding Machine learning Database
8. Exploratory Data Analysis
9. Plotting Graphs
10 Distribution models

2 WEEK

❋ Module – 7 Supervised Learning

1. Logistic Regression
2. Naive Bayes
3. K Nearest Neighbors (KNN)
4. Support Vector Machine (SVM)
5. Model Performance AUC & ROC
6. Decision Trees
7. Random Forest

2 WEEK

❋ Module – 8 Regression Algorithms

1. Simple Linear Regression
2. Multi Linear Regression
3. Support Vector Regressors
4. Decision Tree Regressor
5. Regressor Model Selection
6. Evaluating Regression Model Performance

2 WEEK

❋ Module – 9 Unsupervised learning

1. Introduction & types
2. Distance Metrics
3. K-Mean Clustering
4. Hierarchical Clustering
5. Divisive Clustering
6. DBscan Spatial Clustering

1 WEEK

❋ Module – 10 Association Rule Mining

1. Association Rule Mining
2. Apriori
3. FP Growth

1 WEEK

❋ Module –11 Reinforcement Learning

1. Reinforcement Learning Theory
2. Upper Confidence Bound
3. Thompson Sampling
4. Q Learning

1 WEEK

❋ Module – 12 Dimensionality Reduction

1. Overview
2. Principal Component Analysis
3. Linear Discriminant Analysis.

1 WEEK

❋ Module – 13 Regularization and Optimization

1. Basics of Regularization and Optimization
2. Cross Validation
3. Hyper-parameter Tuning
4. Sampling Methods
5. Under-fitting and Over-fitting in models
6. Variance and Bias

1 WEEK

❋ Module – 14 Feature Modeling and Model Deployment

1. Feature Engineering
2. Machine Learning Pipelining Concepts
3. Model Performance Measure
4. Introduction to Flask
5. Introduction to Web Programming
6. Implementation of Flask over AWS

3 WEEK

❋ Module – 15 Projects

1. Hotel Prediction
2. Minist Dataset
3. Social Network Ads
4. Teach a Taxi
5. Loan prediction

1 WEEK

Aims and Objectives

To build a basic understanding and learn Artificial Intelligence, Deep Learning, Machine Learning with a comprehensive course that enables you to use ML and AI for practical approach.

This course will help you fulfill your dream of learning and will prepare for the opportunity of being a leading choice for any job that requires you to be a professional in the provided course.

Since this course makes you learn from basics, be prepared to explore and express the newest of knowledge and feel the motivation and desire to learn something new with this course.

JOB OPPORTUNITIES

* **Robotics Scientist**
* **AI Data Analyst**
* **Software Engineer**
* **Big Data Engineer**
* **Research Scientist**
* **Business intelligence Developer**

What is AI & ML?

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

AI systems will typically demonstrate at least some of the following behaviors associated with human intelligence: planning, learning, reasoning, problem solving, knowledge representation, perception, motion, social intelligence.

Machine learning (ML) is a discipline of artificial intelligence (AI) that provides machines with the ability to automatically learn from data and past experiences while identifying patterns to make predictions with minimal human intervention.

AI & ML examples :
* Goggle Maps
* Smart Assistant
* Snap chat Filters
* Self-driving Cars
* Wearables
* Facial recognition
* Product recommendations
* Email automation and spam filtering

ARTIFICIAL INTELLIGENCE

"Artificial intelligence is not a replacement for human intelligence, but a tool to enhance it."

MACHINE LEARNING

"Machine learning is the key to unlocking the vast potential of big data."

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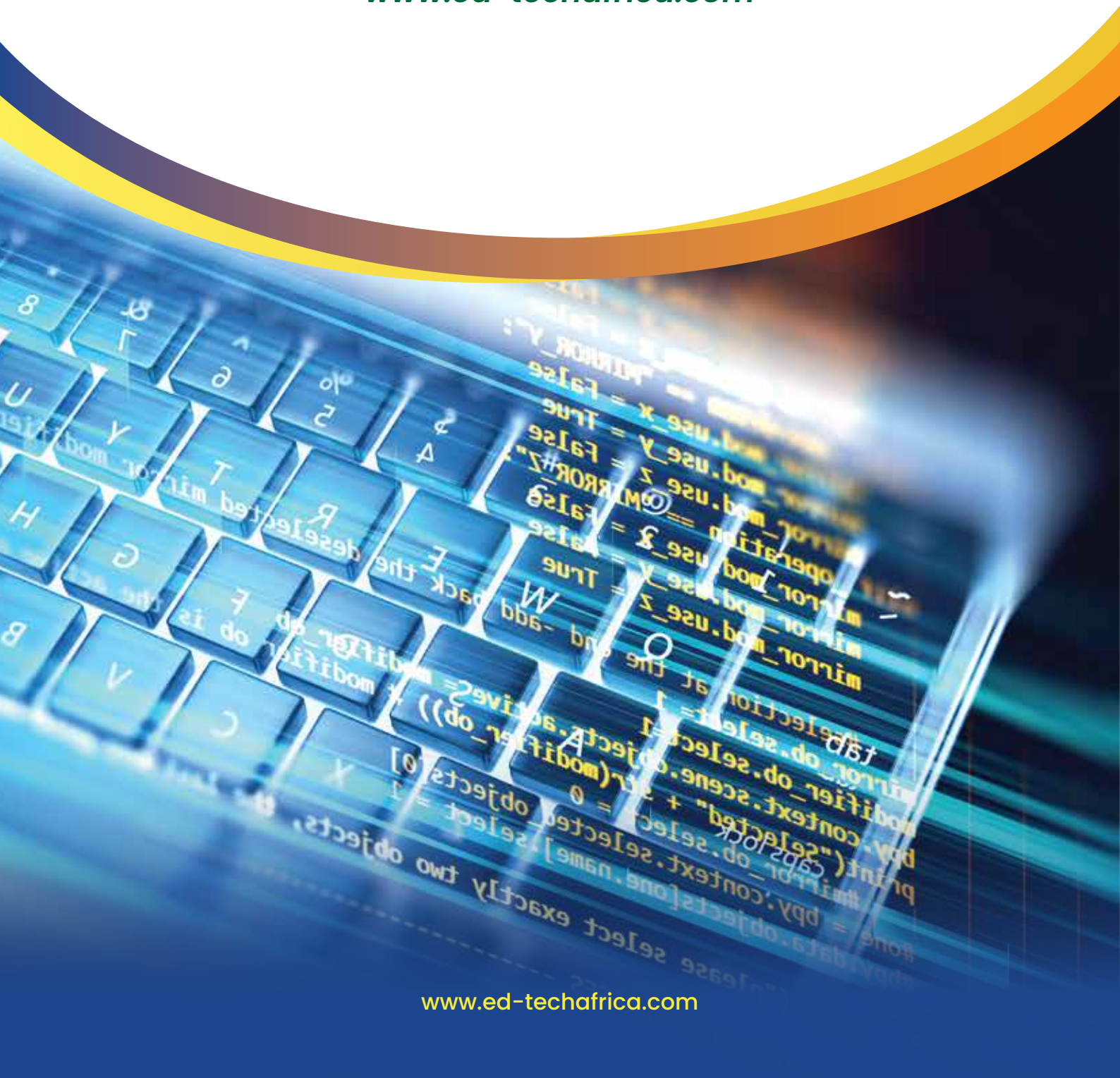💬 **+267 75 546 649**

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