ROLASOFT PROFESSIONAL COMPUTER & IT COURSES VERSION 2.O LATEST

# Diploma in Certified Artificial Intelligence Engineer

*Become a job-ready AI Engineer in 6 months!*

# Benefits of Studying Diploma in AI Engineer with RolaSoft

✅ **1. Industry-Relevant Curriculum**

Stay ahead with a syllabus designed by industry experts, focused on real-world applications of AI.

✅ **2. Hands-On Training**

Learn by doing — build real-time projects, develop applications, and gain practical experience.

✅ **3. Experienced Instructors**

Gain insights from certified professionals and senior software engineers with years of teaching and industry experience.

✅ **4. Placement Assistance**

Access job support services including resume building, mock interviews, and direct placement opportunities with partner companies.

✅ **5. Flexible Learning Modes**

Choose between: **Online**, **Offline (at our center)**, or **Hybrid Classes**

# Benefits of Studying Diploma in AI Engineer with RolaSoft

✅ **6. Mini & Major Projects**

Work on individual and group projects to strengthen your portfolio and impress future employers.

✅ **7. Certification Upon Completion**

Earn a **Diploma Certificate** from **RolaSoft Technologies**, recognized by IT recruiters and employers.

✅ **8. Small Batch Size**

Personalized attention and better interaction in small groups for an enhanced learning experience.

✅ **9. Affordable Fees & Installment Plans**

Top-tier training at a reasonable cost, with flexible payment options.

✅ **10. Career-Oriented Skills You'll Gain at RolaSoft Technologies**

RolaSoft ensures you're job-ready with the right tech stack and practical knowledge.

# Diploma in AI Engineer Course Details

- ✅ **Duration**
  Six (6) Months

- ✅ **Schedule**
  Weekdays / Weekends

- ✅ **Learning Modes**
  Online, Offline (at our center), or Hybrid Classes

- ✅ **Start Date**
  New batches start every month — enroll now!

- ✅ **Eligibility**
  No prior experience required

# AI Engineer Prerequisites

- ✅ Basic knowledge of mathematics and logical reasoning
- ✅ Basic programming knowledge (Python recommended)
- ✅ Understanding of mathematics (linear algebra, probability, and statistics)
- ✅ Familiarity with data structures and algorithms (helpful but not required)

# Diploma in AI Engineer – Program Details

## Program Overview

The **Artificial Intelligence (AI)** course at ***Rolasoft Technologies*** is a 6-month program designed to take students through a hands-on journey of understanding, developing, and implementing AI applications. The course covers key areas of AI, including machine learning (ML), deep learning (DL), computer vision, natural language processing (NLP), and reinforcement learning. In this course, students will gain practical knowledge of how AI models work, from the theoretical underpinnings to the practical application of AI algorithms using Python and popular libraries like **TensorFlow**, **Keras**, **PyTorch**, and **Scikit-Learn**. Students will also learn to solve real-world challenges using AI technologies in fields like robotics, healthcare, finance, and autonomous systems.

By the end of the course, students will be prepared to design, train, and deploy AI systems, with a strong foundation in both the theoretical aspects and practical applications of AI.

# Diploma in AI Engineer Course Curriculum

## Month 1: Introduction to Artificial Intelligence and Python for AI

✅ **What is Artificial Intelligence?**

(Overview of AI and its history, AI vs Machine Learning vs Deep Learning, Major milestones and applications of AI)

✅ **Python for AI Development**

(Introduction to Python for AI and data science, Working with libraries: NumPy, Pandas, Matplotlib, and Seaborn, Setting up a development environment (Jupyter Notebooks, Anaconda, etc.), Data manipulation and visualization techniques in Python)

✅ **Introduction to AI Algorithms**

(Overview of search algorithms (BFS, DFS), Problem-solving techniques in AI (heuristic search, A* algorithm))

✅ **Hands-On:** Write Python code to implement basic search algorithms and visualize data using Python libraries

# Diploma in AI Engineer Course Curriculum

## Month 2: Machine Learning Fundamentals

✅ **Introduction to Machine Learning (ML)**
(Understanding supervised, unsupervised, and reinforcement learning, Types of machine learning algorithms: Regression, Classification, Clustering, etc.)
✅ **Regression Algorithms**
(Linear and Polynomial Regression, Evaluating model performance with metrics like MSE, RMSE, and R-squared)
✅ **Classification Algorithms**
(K-Nearest Neighbors (KNN), Decision Trees, Support Vector Machines (SVM), Evaluating classifiers with metrics like accuracy, precision, recall, and F1-score)
✅ **Clustering Algorithms**
(K-Means, DBSCAN, Agglomerative Clustering, Evaluating clustering performance)

✅ **Hands-On:** Implement linear regression, KNN, and decision trees on real-world datasets (e.g., Iris dataset, Titanic dataset)

# Diploma in AI Engineer Course Curriculum

## Month 3: Deep Learning and Neural Networks

✅ **Introduction to Deep Learning**
(Understanding the difference between machine learning and deep learning, Overview of artificial neural networks (ANNs) and their architecture)

✅ **Neural Networks Basics**
(The architecture of a neural network: Layers, weights, and activation functions, Forward and backward propagation, Introduction to the Perceptron and Multilayer Perceptron (MLP))

✅ **Training Neural Networks**
(The role of loss functions and optimization techniques (Gradient Descent), Overfitting and underfitting, regularization techniques, Hyperparameter tuning and model evaluation)

✅ **Deep Learning Frameworks**
(Introduction to TensorFlow, Keras, and PyTorch, Building and training a simple neural network using Keras/TensorFlow)

✅ **Hands-On:** Train a neural network to classify images from the **MNIST** dataset

# Diploma in AI Engineer Course Curriculum

## Month 4: Advanced Deep Learning – CNNs and RNNs

✅ **Convolutional Neural Networks (CNNs)**
(Understanding the architecture of CNNs and their application in image processing, Convolutional layers, pooling layers, and fully connected layers, Building CNNs for image classification (e.g., CIFAR-10 dataset))

✅ **Recurrent Neural Networks (RNNs)**
(Introduction to sequence data and RNNs, Architecture of RNNs, LSTM (Long Short-Term Memory) networks, and GRUs (Gated Recurrent Units), Applications of RNNs in NLP, time-series prediction, and speech recognition)

✅ **Transfer Learning**
(Using pre-trained models for efficient deep learning (e.g., VGG16, ResNet, Inception), Fine-tuning models for specific tasks)

✅ **Hands-On:** Build a CNN for image classification and an RNN for text generation

# Diploma in AI Engineer Course Curriculum

## Month 5: Natural Language Processing (NLP)

✅ **Introduction to Natural Language Processing**
(Overview of NLP and its applications (chatbots, sentiment analysis, etc.), Text preprocessing techniques (tokenization, stop-word removal, stemming, lemmatization))

✅ **Vectorizing Text Data**
(Bag of Words (BoW), TF-IDF, and Word Embeddings (Word2Vec, GloVe), Handling imbalanced datasets and vectorizing text data)

✅ **NLP with Deep Learning**
(Using RNNs, LSTMs, and GRUs for NLP tasks, Text classification, sentiment analysis, and Named Entity Recognition (NER))

✅ **Advanced NLP Techniques**
(Introduction to Transformers, BERT, and GPT, Pre-trained models for various NLP applications)

✅ **Hands-On:** Build a sentiment analysis model using **Keras** and a text summarization model using **Transformers**

# Diploma in AI Engineer Course Curriculum

## Month 6: Reinforcement Learning and AI Applications

✅ **Reinforcement Learning (RL)**
(Introduction to RL and the agent-environment paradigm, Understanding reward functions, policies, and value functions, Key RL algorithms: Q-Learning, Deep Q-Networks (DQN), Policy Gradient methods)

✅ **Advanced RL Topics**
(Actor-Critic methods, Monte Carlo methods, Temporal Difference learning, Applications of RL in robotics, gaming (AlphaGo, OpenAI), and autonomous vehicles)

✅ **AI Applications**
(AI in healthcare, finance, robotics, and autonomous systems, Developing intelligent agents and self-learning systems)

✅ **Hands-On:** Final Project – Build a reinforcement learning agent to play a simple game (e.g., CartPole)

# Tools & Technologies Used

Tools & Technologies Used for **AI Engineer** Course are:

- ✅ Programming Language: Python
- ✅ AI/ML Libraries: TensorFlow, Keras, PyTorch, Scikit-Learn, OpenCV
- ✅ NLP Tools: NLTK, spaCy, Transformers
- ✅ Data Handling: Pandas, NumPy, Matplotlib, Seaborn
- ✅ Deep Learning Platforms: Google Colab, Jupyter Notebooks

# Final Capstone Project (End of 6 Months)

Students will complete an **industry-level project** in **AI Engineer** :

✅ Build a reinforcement learning agent to play a simple game (e.g., CartPole) (Capstone Project)

# AI Engineer Learning Outcomes

By the end of this course, students will be able to:

✅ Understand the core concepts and algorithms in **Artificial Intelligence**

✅ Develop **machine learning models** for regression, classification, and clustering

✅ Build **deep learning models** for image and speech recognition using CNNs, RNNs, and LSTMs

✅ Implement **NLP techniques** for text classification, sentiment analysis, and language translation

✅ Design **reinforcement learning agents** for decision-making tasks

✅ Apply AI technologies in real-world applications such as healthcare, finance, and autonomous systems

✅ Prepare for AI-related roles like **Machine Learning Engineer**, **AI Researcher**, and **Data Scientist**

# Certification Obtain

After completion of the program, the student will be awarded with a certificate:

## Diploma in Certified Artificial Intelligence Engineer

The program also prepares students for industry certifications such as:

- ✅ Microsoft Certified: Azure AI Engineer Associate
- ✅ IBM AI Engineering Professional Certificate
- ✅ Google Cloud Professional Machine Learning Engineer
- ✅ AWS Certified Machine Learning – Specialty
- ✅ Artificial Intelligence (AI) Certification by Stanford Online

# AI Engineer Career Opportunities

- ✅ AI Engineer
- ✅ Machine Learning Engineer
- ✅ Data Scientist
- ✅ Deep Learning Engineer
- ✅ AI Research Scientist
- ✅ Robotics Engineer (AI-Powered Robots)
- ✅ AI Product Manager

# Who Should Take This **AI Engineer ?**

## Who Should Take This **Certified AI Engineer ?**

✅ **Software developers** and **engineers** interested in AI and machine learning

✅ **Data scientists** seeking to deepen their knowledge of AI algorithms and techniques

✅ **Students** interested in pursuing a career in AI, ML, or data analytics

✅ **Professionals** working in technology or business domains looking to leverage AI for automation and decision-making

✅ **Entrepreneurs** looking to integrate AI into their products or services

# Rolasoft Technologies Services

## Rolasoft Technologies – Services Offered

✅ **SOFTWARE DEVELOPMENT COMPANY**
(MOBILE APPLICATION, WEB APPLICATION, DESKTOP APPLICATION, CUSTOMIZED APPLICATION, E-COMMERCE WEBSITE)

✅ **PROFESSIONAL COMPUTER AND IT EDUCATION**
(TOP-UP PROGRAMS, DIPLOMA PROGRAMS, CERTIFICATE PROGRAMS, TECH @ SCHOOL, CORPORATE PROGRAMS, SIWES PROGRAMS, CUSTOMIZED PROGRAMS)

✅ **DIGITAL ADVERTISING AND BUSINESS BRANDING**
(SOCIAL MEDIA MARKETING, EMAIL MARKETING, CONTENT MARKETING, WEBSITE SEO, BRANDED CLOTHING, STICKERS AND TAG, CUSTOM BRANDING, AND MANY MORE)

✅ **INTERNATIONAL UNIVERSITY ADMISSION PROCESSING**
(AMERICA, UK, CANADA, EUROPE, AFRICA, AND MANY MORE)

# Contact & Registration

 Phone: +234 8032867212, +234 8082171242

 Email: info@rolasofttech.com

 Website: www.rolasofttech.com

 Address: 2, Martins Street Off Ojuelegba Road, Yaba, Lagos State.

**Enroll Today & Start Your AI Engineer Journey!**

*Shape your future with AI Engineer.*