Artificial Intelligence Tasks & Instructions — CodeAlpha

ia Artificial Intelligence — Internship Overview

This internship program offers real-world experience in **Artificial Intelligence**. CodeAlpha is a leading software development company dedicated to driving innovation and excellence across emerging technologies. The Al internship provides students with hands-on experience in Al model development, machine learning workflows, and real-time data processing. Interns will work in a dynamic environment, receive expert mentorship and contribute to projects that reflect the latest advancements in artificial intelligence.

🎁 Internship Perks

- Internship Offer Letter
- Completion Certificate (QR Verified)
- Unique ID Certificate
- Letter of Recommendation (based on performance)
- Job Opportunities / Placement Support
- Resume Building Support

r Instructions for Interns

- 1. Share your internship status on LinkedIn, tagging @CodeAlpha.
- 2. Complete the **assigned projects** within the mentioned time frame.
- 3. Upload your complete source code to **GitHub** in a repository named: CodeAlpha_ProjectName
- 4. Post a video explanation of your project on LinkedIn with GitHub repo link.
- 5. Submit your completed task using the **Submission Form**.
- 6. Complete any 3 or 2 out of the 4 tasks listed below (from your domain).

Artificial Intelligence Task List

(Complete any 2 or 3 of the following tasks)

TASK 1: Language Translation Tool

- Create a user interface where user can enter text and select source & target languages.
- Use a translation API like Google Translate API or Microsoft Translator to process the input.
- Send the text to the API and get the translated response.
- Display the translated text clearly on the screen.
- Optional: Add a copy button or text-to-speech feature for better usability.

▼ TASK 2: Chatbot for FAQs

- Collect FAQs related to a topic or product (questions and their answers).
- Preprocess the text using NLP libraries like NLTK or SpaCy (tokenize, clean, etc.).
- **Match user questions** with the most similar FAQ using techniques like cosine similarity or intent matching.
- **Display the best matching answer** as a chatbot response.
- Optional: Create a simple chat UI for user interaction.

▼ TASK 3: Music Generation with AI

- Collect MIDI music data to train your Al model (classical, jazz etc.).
- Preprocess the data into note sequences suitable for training (e.g., using `music21`).
- Build a deep learning model using RNNs (like LSTM) or GANs to learn music patterns.
- Train the model on the dataset to generate new music sequences.
- Convert generated sequences to MIDI and play or save them as audio.

TASK 4: Object Detection and Tracking

- Set up real-time video input using a webcam or video file (OpenCV).
- Use a pre-trained model like YOLO or Faster R-CNN for object detection.
- Process each video frame to detect objects and draw bounding boxes.
- Apply object tracking using algorithms like SORT or Deep SORT.
- Display the output with labels and tracking IDs in real time.

Important Note

Internship Completion Criteria:

To be eligible for the internship certificate, participants must complete a minimum of **two or three tasks**. Submitting only one task will be considered **incomplete** and certificates will **not** be issued in such cases.

📤 Submission Details

A submission form will be shared in your respective **WhatsApp group**. You are required to submit your completed task only through that form. Please follow the instructions mentioned in the form carefully to ensure your submission is accepted.

Contact Information

Website: www.codealpha.tech
WhatsApp: +91 8052293611
Email: services@codealpha.tech