Assignment: Custom AI Model Deployment Pipeline

Objective: Develop a simple AI model and set up a deployment pipeline using Docker and Kubernetes. The candidate will also need to create a basic web service (using either Python or Go Lang) that interacts with the AI model and stores results in a MySQL database.

Task Details:

1. **AI Model Development:**
   - Develop a simple AI model. This could be a basic image classifier or a text sentiment analysis model using publicly available datasets (e.g., MNIST for image classification, IMDB reviews for sentiment analysis).
   - The model should be developed in Python using a machine learning framework of the candidate's choice (e.g., TensorFlow, PyTorch).
2. **Web Service Creation:**
   - Create a web service in Python or Go Lang that serves the AI model. The service should expose an API endpoint where users can submit **data (e.g., text snippets mentioned below) and receive the model's predictions i.e. paraphrased positive version examples below.**
   - The service should log prediction requests and results in a MySQL database.
3. **Containerization with Docker:**
   - Containerize the AI model and web service using Docker. This involves writing a Dockerfile that specifies the environment, dependencies, and how the application should run.
4. **Deployment with Kubernetes:**
   - Write a Kubernetes deployment configuration to manage the deployment of the Docker containers. This should include basic configurations for scaling and managing the application.
5. **Documentation:**
   - Provide a README file explaining how to set up and run the model, web service, and the Kubernetes deployment. Include any necessary scripts or commands.
6. **Bonus (Optional):**
   - Implement basic authentication for the API.
   - Add a simple front-end interface for interacting with the model.

Submission Requirements:

- Source code for the AI model, web service, Dockerfile, and Kubernetes configuration files.
- A README file with setup and execution instructions.
- Any scripts or additional resources used in the project.

Evaluation Criteria:

- Correctness and efficiency of the AI model.
- Quality and clarity of the code.
- Functionality of the web service and its interaction with the AI model and MySQL database.
- Proper use of Docker and Kubernetes for deployment.
- Completeness and clarity of the documentation.

This assignment is comprehensive and tests a wide range of skills relevant to the job description. It's also unique enough to discourage candidates from finding ready-made solutions online, as it requires integration of several different technologies and a custom approach to the problem.

Input	Paraphrased (Positive Language) (Just an Example)
XXXX Text Input Positive Say (And they lived happily ever after..)	Same input in More Positive / Poem type text.
XXXX Text Input Positive Say (And they lived happily ever after..)	Same input in More Positive / Poem type text. (With Variation)
YYYY Text Input Neutral Say (They were okey friends but their friendship kept growing with time)	Paraphrase conveying same o/p in more positive way.

Evaluation Criteria:

Deadline for this assignment is **Dec 10**. However, if you complete earlier, better. Just Ping us in Linked In As soon as you are done. Also for some reason if you are not able to complete but have invested significant time and reached to certain point by **Dec 10**, Please send us update. And we will most likely Jump onto call to discuss based on update.