ENSAM
ÉCOLE NATIONALE SUPÉRIEURE D'ARTS ET MÉTIERS
UNIVERSITÉ HASSAN II DE CASABLANCA

Soutenance : Stage d'initiation

NUMERIC WAY
way ahead ...

Société d'accueil : **Numeric Way**

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Spécialité : **Génie Informatique & Intelligences Artificielles**

Plan

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Organisme d'accueil

Numeric Way, une agence e-commerce établie à Casablanca, élargit son influence avec la présence d'une autre agence, Numeric Way Mauritius, aux îles Maurice. Spécialisée dans la réalisation, le développement et la modernisation de sites web ainsi que de sites e-commerce, l'agence opère sous diverses plateformes et solutions open source, notamment Magento. Conseils et mise en place de stratégies, E-marketing, Maintenance, Hébergement et Infogérance.

NUMERIC WAY
way ahead ...

02

Présentation du projet

Problématique

ChatBot pour se documenter ? En local ?

Développeur

Documentation (REST API)

Magento®
An Adobe Company

Magento est une plateforme open source de commerce électronique qui permet aux entreprises de créer et de gérer des boutiques en ligne.

Piste :

LLM : LLAMA : -2-7B

POURQUOI ?

- Compréhension Contextuelle
- Polyvalence
- Génération de Texte Naturel
- Réduction du Temps de Développement
- Capacité à Gérer la Diversité Linguistique
- Traitement de Diverses Intentions
- Adaptabilité aux Évolutions du Langage
- Meilleure Gestion de l'Ambiguïté

Fine Tune : LLAMA

Etapes :

- Définition de la tâche
- Collecte de données d'entraînement
- Prétraitement des Données
- Fine-tuning du Modèle
- Évaluation du Modèle
- Implementation

01

Situation du problème & Documentation

- Rest API
- LLM
- Libraries

02

Data Processing & Modelisation

- Comprendre le jeu de données
- Nettoyer & Transformer les données en fonction de LLAMA
- Stocker les données

03

Realisation

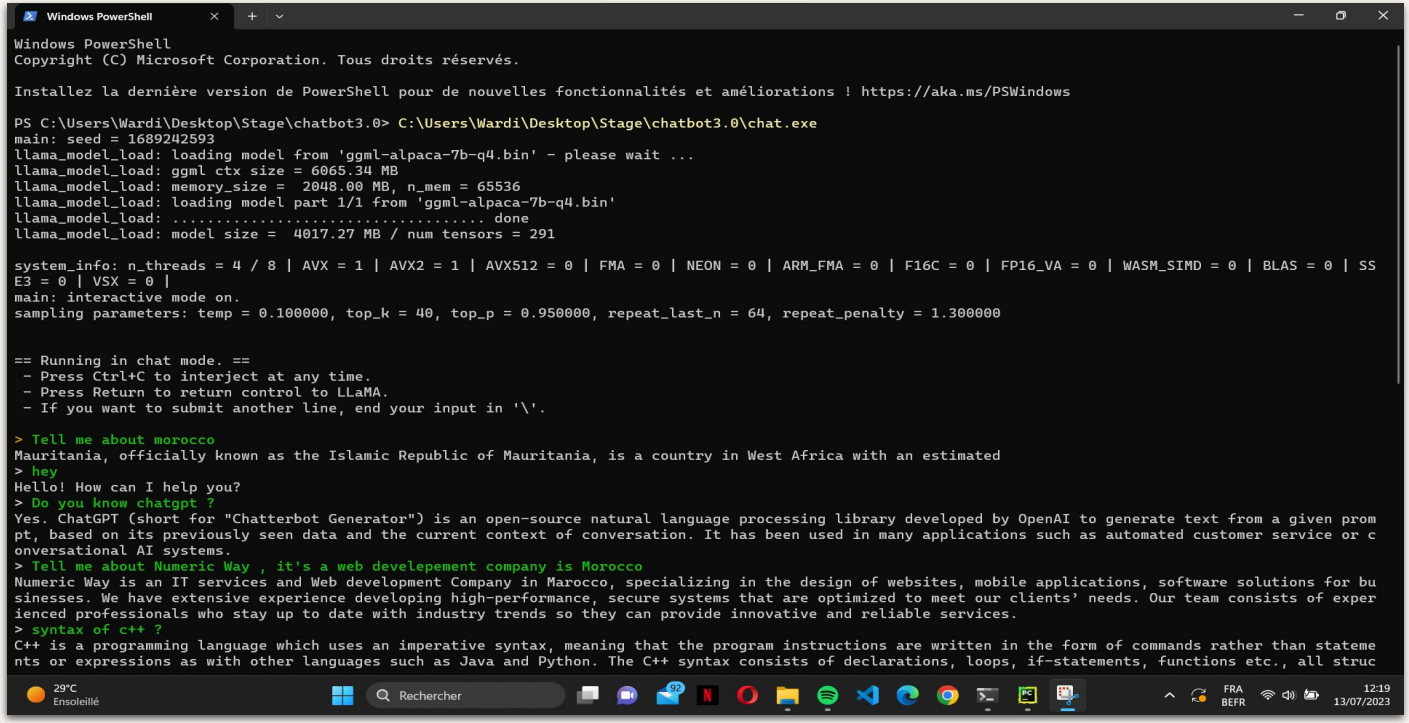
- Chatbot en local , non fine tuned.
- Fine tuner le model , outils :
  - ❖ Google Collab
  - ❖ Kaggle
  - ❖ Gradient

X

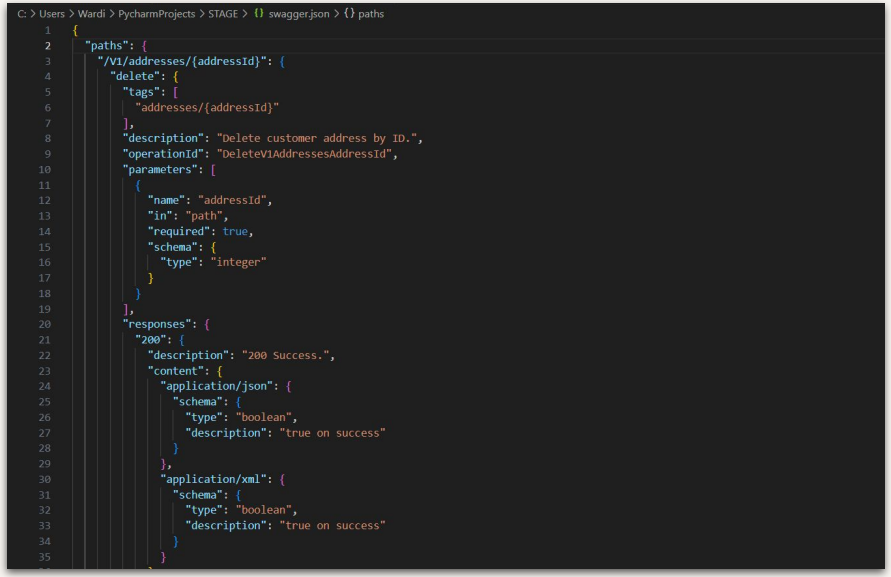
03

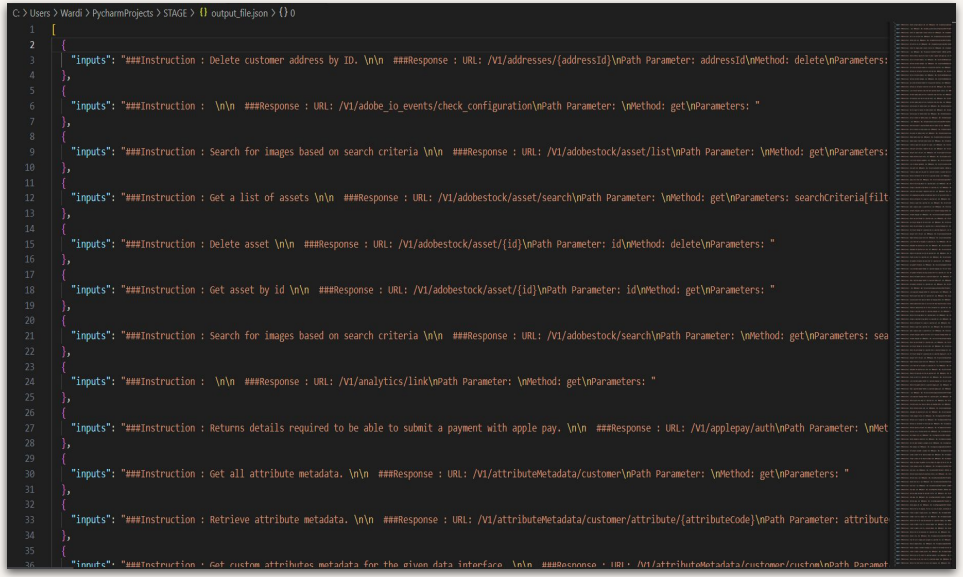
Outils & Réalisation

Exécution en local : LLAMA 7B



Fine Tuning : Données





Rest API Doc comptant plus que 65k lignes

Format final : Input data pour Fine Tuning v2

Fine Tuning :

Process -1

+ Code + Texte

Notebook

```
from gradientai import Gradient

def main():
  with Gradient() as gradient:
      base_model = gradient.get_base_model(base_model_slug="llama2-7b-chat")

      new_model_adapter = base_model.create_model_adapter(
          name="TEST4"
      )
      print(f"Created model adapter with id {new_model_adapter.id}")
      sample_query = "### Instruction: Hey , can you show me how to Search for images based on search criteria ? \n\n### Response:"
      print(f"Asking: {sample_query}")

      # before fine-tuning
      completion = new_model_adapter.complete(query=sample_query, max_generated_token_count=100).generated_output
      print(f"Generated (before fine-tune): {completion}")

      samples = [
          {
    "inputs": "### Instruction : Search for images based on search criteria \n\n### Response : URL: /V1/adobestock/asset/list\nPath Parameter:
  },
      ]

      # this is where fine-tuning happens
      # num_epochs is the number of times you fine-tune the model
      # more epochs tends to get better results, but you also run the risk of "overfitting"
      # play around with this number to find what works best for you
      num_epochs = 20
      count = 0
```

+ Code + Texte

Notebook

```
      samples = [
          {
    "inputs": "### Instruction : Search for images based on search criteria \n\n### Response : URL: /V1/adobestock/asset/list\nPath Parameter:
  },
      ]

      # this is where fine-tuning happens
      # num_epochs is the number of times you fine-tune the model
      # more epochs tends to get better results, but you also run the risk of "overfitting"
      # play around with this number to find what works best for you
      num_epochs = 20
      count = 0
      while count < num_epochs:
          print(f"Fine-tuning the model, iteration {count + 1}")
          new_model_adapter.fine_tune(samples=samples)
          count = count + 1

      # after fine-tuning
      completion = new_model_adapter.complete(query=sample_query, max_generated_token_count=100).generated_output
      print(f"Generated (after fine-tune): {completion}")

      new_model_adapter.delete()

if __name__ == "__main__":
    main()
```

```
Created model adapter with id 7a32eb58-e237-4042-b8eb-986b67d87d77_model_adapter
Asking: ### Instruction: Hey , can you show me how to Search for images based on search criteria ?
```

Fine Tuning :

Process -2

```
Created model adapter with id 7a32eb58-e237-4042-b8eb-986b67d87d77_model_adapter
Asking: ### Instruction: Hey , can you show me how to Search for images based on search criteria ?

### Response:
Generated (before fine-tune):  Of course! There are several ways to search for images based on specific criteria. Here are a few methods you ca

1. **Google Images**: Google Images is a powerful tool for searching for images based on specific criteria. You can use keywords, phrases, or e
Fine-tuning the model, iteration 1
Fine-tuning the model, iteration 2
Fine-tuning the model, iteration 3
Fine-tuning the model, iteration 4
Fine-tuning the model, iteration 5
Fine-tuning the model, iteration 6
Fine-tuning the model, iteration 7
Fine-tuning the model, iteration 8
Fine-tuning the model, iteration 9
Fine-tuning the model, iteration 10
Fine-tuning the model, iteration 11
Fine-tuning the model, iteration 12
```

```
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Fine-tuning the model, iteration 13
Fine-tuning the model, iteration 14
Fine-tuning the model, iteration 15
Fine-tuning the model, iteration 16
Fine-tuning the model, iteration 17
Fine-tuning the model, iteration 18
Fine-tuning the model, iteration 19
Fine-tuning the model, iteration 20
Generated (after fine-tune):  Of course! To search for images based on search criteria, you can use the search function on the image hosting we

1. Go to the image hosting website: URL: https://www ######/v1/adobestock/asset/list
Path Parameter:
Method: get
Parameters: searchCriteria[requestName], searchCriteria[filterGroups][0][filters][0][field], searchCriteria[filterGroups
```

Conclusion

Merci pour votre attention !