INTRODUCTION

- **The Animal Recognition Project** integrates advanced AI technologies to provide accessible information about various animal species, available in both Arabic and English.

- It identifies animals in images, generates descriptive captions, and offers insightful information.

- This project serves to apply the AI tools and techniques acquired during the bootcamp

TABLE OF CONTENTS

PROJECT OBJECTIVES :

Allow users to upload images for animal recognition

Translate captions and insights into Arabic.

Create descriptive captions for recognized animals.

Convert captions into audio format.

Provide detailed insights about the identified animals.

PIPELINE IMPLEMENTATION :

The project utilizes various pre-trained models to create a seamless workflow for animal recognition and information dissemination.

- Image Captioning:
  - Generates captions from images using (**BLIP**).
    Salesforce/blip-image-captioning-base

- Translation:
  - Translates English captions and insights into Arabic.
    Helsinki-NLP/opus-mt-en-ar

- Question Answering:
  - Provides detailed answers about the identified animals based on a set of context data using (**RoBERTa base**)
    deepset/roberta-base-squad2

- Text-to-Speech:
  - Converts generated captions into audio format for improved accessibility using (**VITS**)
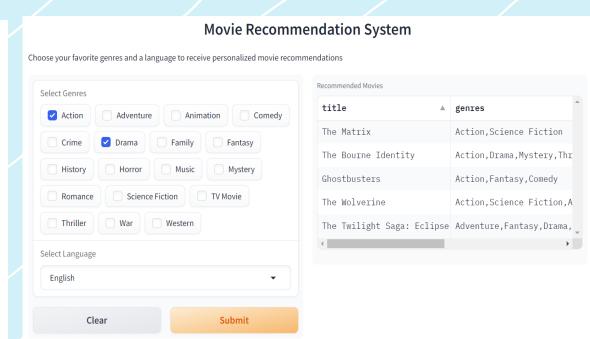   kakao-enterprise/vits-ljs

PREVIOUS WORK:

- ## MOVIE RECOMMENDATIONS

- Overview: The System allows users to select their preferred movie genres and spoken language to receive tailored movie recommendations based on a dataset of movies.

  - Developed with:
  - **Pandas** for data manipulation
  - **Matplotlib** for data visualization
  - **Gradio** for an interactive user interface

Movie Recommendation System

Choose your favorite genres and a language to receive personalized movie recommendations

Select Genres

- [x] Action
- [ ] Adventure
- [ ] Animation
- [ ] Comedy
- [ ] Crime
- [x] Drama
- [ ] Family
- [ ] Fantasy
- [ ] History
- [ ] Horror
- [ ] Music
- [ ] Mystery
- [ ] Romance
- [ ] Science Fiction
- [ ] TV Movie
- [ ] Thriller
- [ ] War
- [ ] Western

Select Language

English

Clear   Submit

Recommended Movies

title ▲	genres
The Matrix	Action,Science Fiction
The Bourne Identity	Action,Drama,Mystery,Thr
Ghostbusters	Action,Fantasy,Comedy
The Wolverine	Action,Science Fiction,A
The Twilight Saga: Eclipse	Adventure,Fantasy,Drama,

MODEL CHOICES :

Image Captioning

Salesforce/blip-image-captioning-base

This model is able to produce relatable and engaging captions enhances user interaction significantly, making it preferable to simpler models that might generate more generic or less descriptive outputs.

Question Answering

deepset/roberta-base-squad2

It is specifically fine-tuned on the SQuAD dataset, making it highly effective for question-answering scenarios, unlike more general models that may not perform as well in this specific application

MODEL CHOICES :

Translation

Helsinki-NLP/opus-mt-en-ar

Being open-source, it allows for easier customization and integration, enabling us to modify it if needed, unlike some proprietary models.

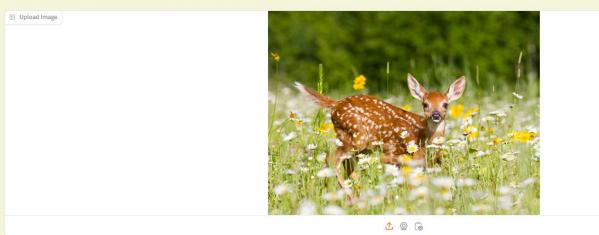**Text-to-Speech**

kakao-enterprise/vits-ljs

This model produces high-fidelity audio that sounds natural, unlike some other TTS systems that can sound robotic or mechanical.
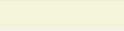
OUTPUTS:

Animal Recognition

Upload an animal image to generate a caption and insights about the identified animal.

Generated Results | Translations

Caption

a deer in a field of flowers

Animal Insight

white-tailed deer

♫ Audio

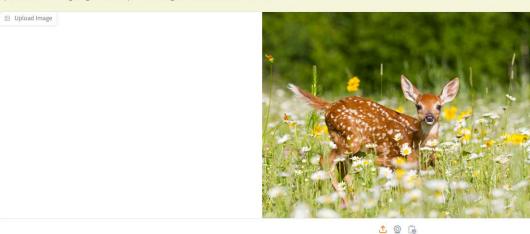0:00   0:02

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OUTPUTS:

Animal Recognition

Upload an animal image to generate a caption and insights about the identified animal.

Translations

Translated Caption

في حقل من الأزهار

Translated Animal Insight

الأيل الأبيض الذيل

CONCLUSION:

- The project applied the AI tools and techniques acquired during the bootcamp

- Users can identify animals via images and receive descriptive insights, promoting inclusive wildlife education.

- Future work could include:
- Expanding the animal species database.
- Enhancing the question-answering capabilities to provide more interactive and informative responses.

SPACE & REPOSITORY

- Git Hub Repository :
NSALHI1
github.com

- Hugging Face Space:
Norahsal
huggingface.co/spaces

- Google colab:
colab.research.google.com

THANKS !

any questions?