Assignment 1

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- **Hugging face agents :**

An agent is a system that has access to functions known as tools and runs on an LLM as its engine.These tools are functions for carrying out a task, and they come with all the instructions an agent needs to use them correctly.The agent can be programmed to run tools at the same time or run tools by sequence or as needed.

An agent solve a problem in using normal models, it gives the model clear instructions and tools to use as neede combining AI with coding.

Use cae example:

If have a model designed for a specific purpose like answer medical quistions of patients using thair medical records as tools to aid in the conclusion

- **Hugging face pipeline for text generation:**

Firstly what is a pipeline it is defined as objects that provide a straightforward API for a number of tasks, such as Named Entity Recognition,Sentiment Analysis, Feature Extraction, and Question Answering. They abstract the majority of the difficult code from the library.

Specifically what the text generation pipeline dose is that it anticipates the words that will appear in response to a given text query. In the event that the conversational model underpinning the pipeline is able to receive one or more chats, in which case the pipeline will function in chat mode and add its response to the ongoing chat. Every chat is represented as a list of dicts with the keys "role" and "content" in each dict.Simply put it finishish your sentence.

- **Hugging Face inference endpoints :**

We find Hugging Face Inference Endpoints to be a very simple and convenient way to deploy transformer (and sklearn) models into an endpoint so they can be consumed by an application. Whilst they cost a little more than the ECS approach we were using before, it’s well worth it because it saves us time on thinking about deployment, we can concentrate on the thing we want to: building NLP solutions for our clients to help solve their problems.

- **Give feedback on the image generation and explore different models available on the Hugging Face website:**

Image generation in my opinion is the visualization of machine vision, the conversion of text to image truly showed the machine thinking process using algorithms and deep learning models to create realistic and novel images, it can have a great impact on the world whether in entertainment, art, or even mathematics.

These are some models i found on hugging face :

- The diffusion model with more than 5 million downloads :

The most popular model currently used to generate images, the Diffusion Model is a Probabilistic Generative Model that uses random noise vectors to create realistic images through learnable transformations and noise injections. With all that range of creativity it can generate unrealistic images.

- The photo maker model used for headshots and avatars:

Users enter one or more face photos and a text prompt to get started.it generates photos as guided through the propt adding another element of image + text ->image. It hase some disadvanteds with recognizing certain ethnicity but non the less isee a grat use for such model.

- The stability ai mode that is built on top of the diffuser mode :

It is a quick text-to-image or image-to-image model that can create realistic images from a text input in just one network evaluation. It hase a big drawback of generating images in a fixed resolution.