

Prompt Labs

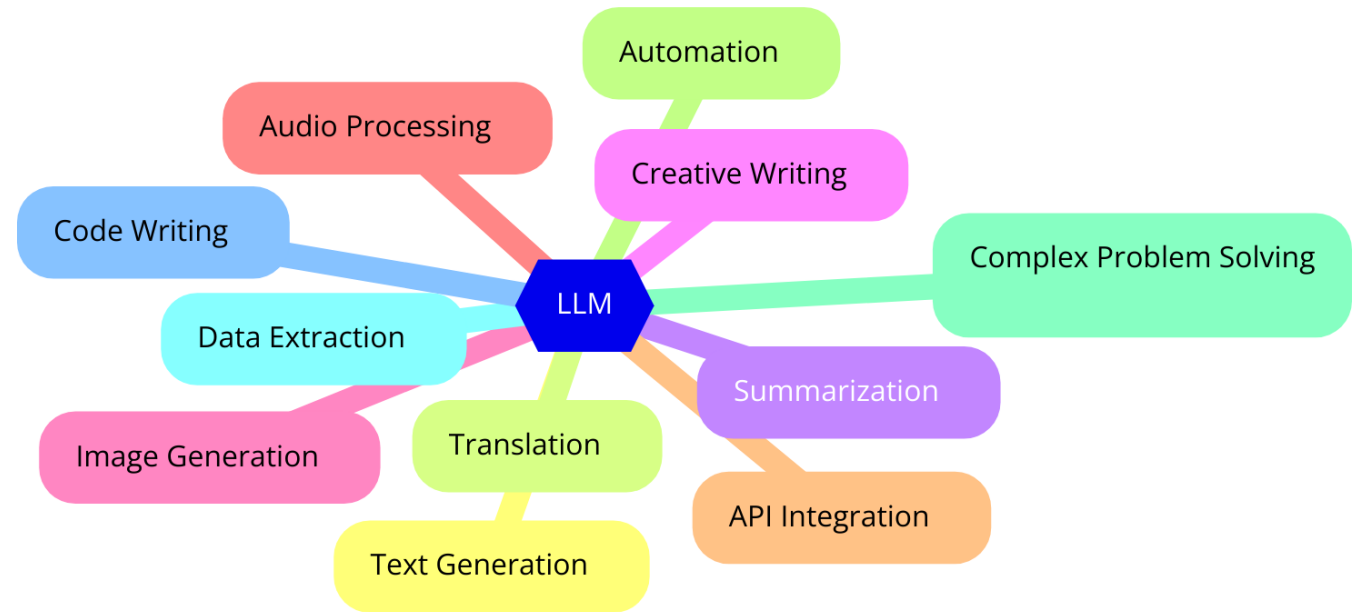
STAT 5350 Spring 2025

Ivan Portilla

3/12/25

What we know so far

- LLMs can be used for:



What we know so far

- LLMs can be used for:

Natural Language Processing



Text Classification



Token Classification



Table Question Answering



Question Answering



Zero-Shot Classification



Translation



Summarization



Feature Extraction



Text Generation



Text2Text Generation



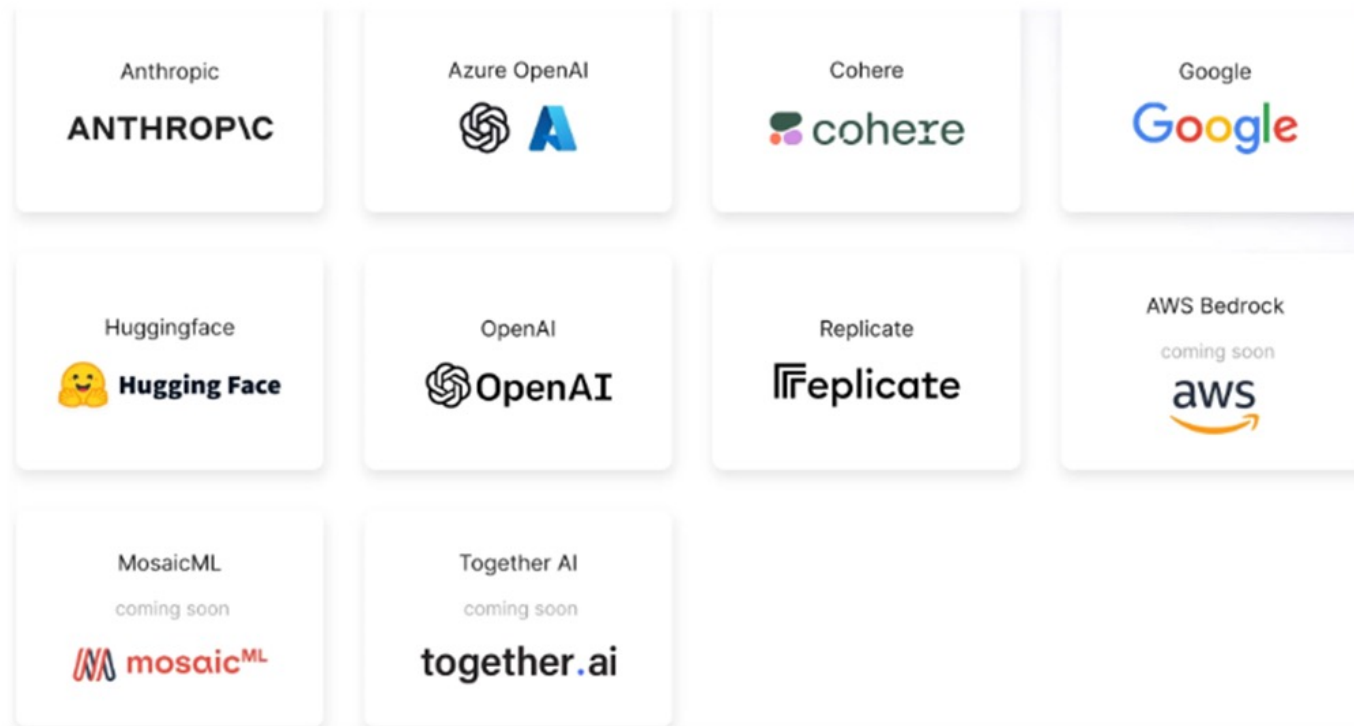
Fill-Mask



Sentence Similarity

What we know so far


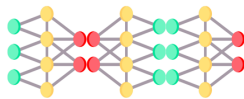
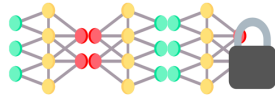
- LLMs are available from:



What we know so far

- LLMs model card features

Open-Source Vs. Close-Source LLMs

Features	Open-Source LLMs	Close-Source LLMs
		
Cost	Lower initial cost but possibly higher maintenance.	Higher initial cost but lower maintenance.
Innovation	Collaborative and fast innovation from a global community.	Slower innovation directed by a single entity.
Support	Reliant on community-based support, which can be extensive but inconsistent.	Consistent and quality support offered through dedicated channels.
Customization	Highly customizable with access to source code.	Customization possible within the platform's limits.
IP	Shared IP under open-source licenses.	IP is closely held, providing competitive advantage.

What we know so far

- LLMs model card features

Competitive Differentiation of Gen AI Foundation Models

LLM Edition – Select Models



November 2023; List Not Exhaustive

www.TheStrategyDeck.com

What is Hugging Face?

Hub for open-source
ML



| **Hugging Face: Models, Datasets, and Spaces**



Datasets

Thousands of curated datasets for ML tasks

Saves time in data collection and pre-processing

Some include a dataset viewer for interacting with data



Models

Pre-trained ML models

Can be used to perform diverse ML tasks across including text, audio, and image

Supports dozens of libraries, including Transformers



Spaces

Built, host, and share ML apps in a single, organized workspace

Thousands of ML-powered demo apps

Hosted with built-in Python frameworks (Streamlit or Gradio) or JS and HTML (static).

What is Hugging Face?

UI Demo

<https://huggingface.co/>

FLUX.1 [dev]

12B param rectified flow transformer guidance-distilled from [FLUX.1 \[pro\]](#)
[\[non-commercial license\]](#) [\[blog\]](#) [\[model\]](#)

an astronaut on a horse in mars

Run



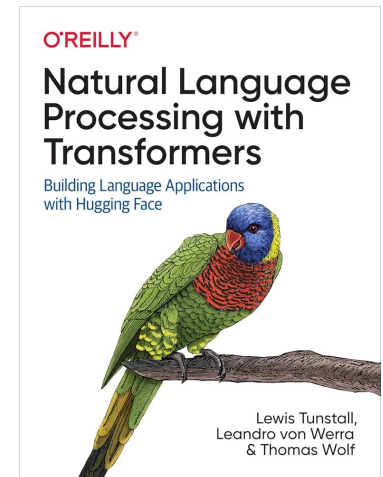
Hugging Face Transformers

Python library that helps downloading & training ML models easy

```
Pipeline(task="sentiment-analysis")("love this!")
```

Other tasks: Summarization, translation, question-answering, feature extraction, text generation & more

<https://colab.research.google.com/drive/1NYGOIm59r4RgRKE7dUtzbrRTEvYcVyLP?usp=sharing>



Hugging Face Transformers

LAB

1. Summarization,
2. Translation,
3. Question-answering,
4. Text generation

<https://huggingface.co/models>

<https://colab.research.google.com/drive/1NYGOIm59r4RgRKE7dUtzbrRTEvYcVyLP?usp=sharing>