



Categories of Natural Language Problems

Modern AI Pro: Level 1



High level categories



1. Text Classification
2. Text Summarization
3. Text Embedding Generation
4. Machine Translation
5. Question Answering
6. Visual Question Answering (VQA)
7. Document Question Answering
8. Tabular Question Answering
9. Sentiment Analysis
10. Text Generation
11. Information Retrieval
12. Chatbots

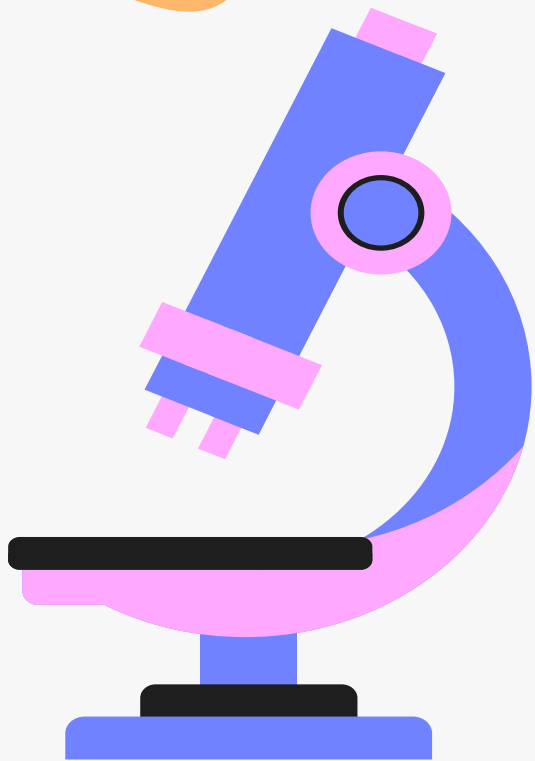
1. Image Classification
2. Speech Recognition
3. Video Classification






How will you use this?

Choose or train the right models and strategy based on your business application.



Hugging Face Pipelines



 **Hugging Face**

Models Datasets Spaces Posts Docs Pricing

Tasks Libraries Datasets Languages Licenses Other

Multimodal

Image-Text-to-Text

Visual Question Answering

Document Question Answering

Computer Vision

Depth Estimation

Image Classification

Object Detection

Image Segmentation

Text-to-Image

Image-to-Text

Image-to-Image

Image-to-Video

Unconditional Image Generation

Video Classification

Text-to-Video

Zero-Shot Image Classification

Mask Generation


Zero-Shot Object Detection


Text-to-3D


Image-to-3D


Image Feature Extraction


Models 529,115 new Full-text


 **google/gemma-7b**
Text Generation • Updated 1 day ago • ⬇ 179k • ❤ 1.65k


 **ByteDance/SDXL-Lightning**
Text-to-Image • Updated 3 days ago • ⬇ 226k • ❤ 848

 **google/gemma-7b-it**
Text Generation • Updated 6 days ago • ⬇ 85.6k • ❤ 786

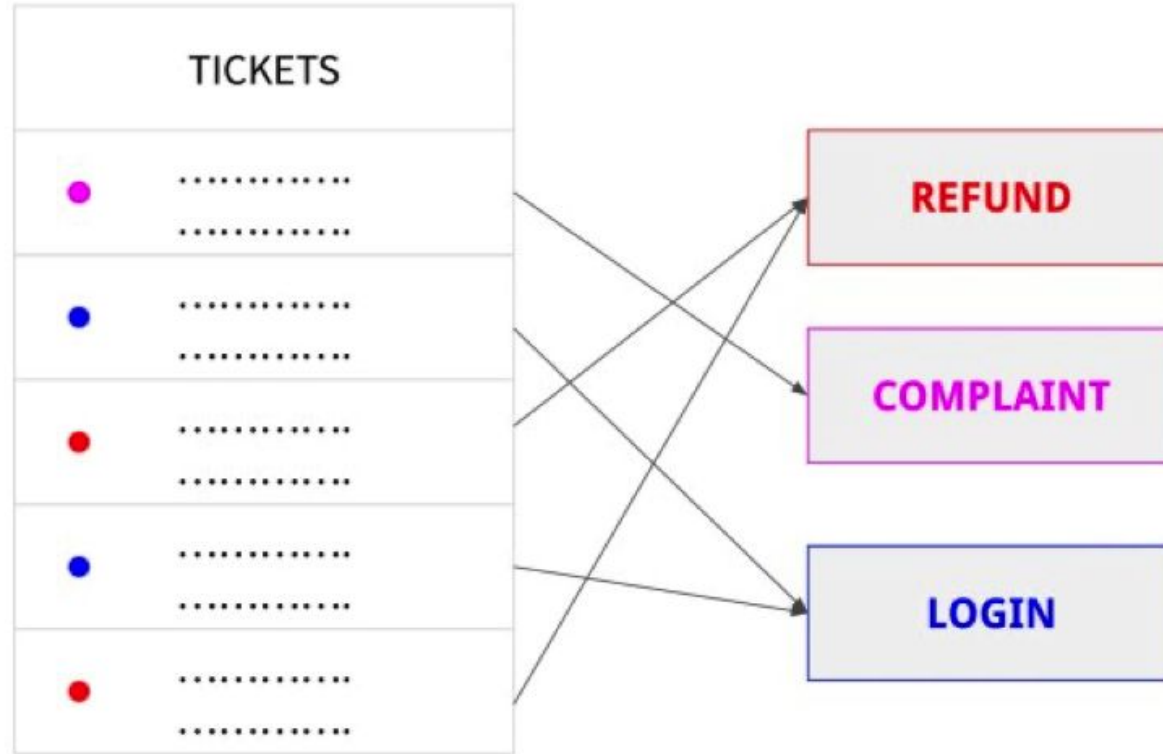
 **google/gemma-2b**
Text Generation • Updated 8 days ago • ⬇ 58.5k • ❤ 450

 **playgroundai/playground-v2.5-1024px-aesthetic**
Text-to-Image • Updated 1 day ago • ⬇ 16.1k • ❤ 191

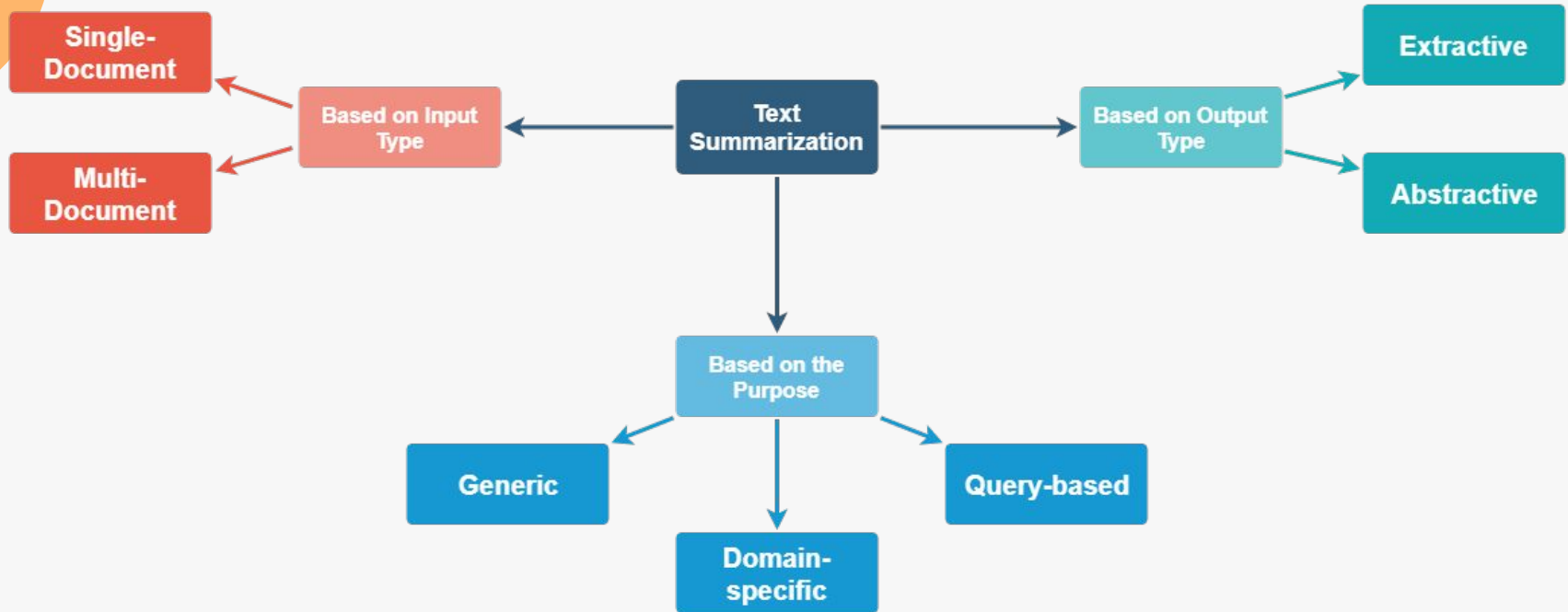
 **bigcode/starcoder2-15b**
Text Generation • Updated 1 day ago • ⬇ 1.42k • ❤ 172

 **stabilityai/stable-cascade**
Text-to-Image • Updated 10 days ago • ⬇ 412k • ❤ 954

1. Text Classification



2.Text Summarization



3. Text Embeddings



A 4-dimensional embedding

cat =>

1.2	-0.1	4.3	3.2
-----	------	-----	-----

mat =>

0.4	2.5	-0.9	0.5
-----	-----	------	-----

on =>

2.1	0.3	0.1	0.4
-----	-----	-----	-----

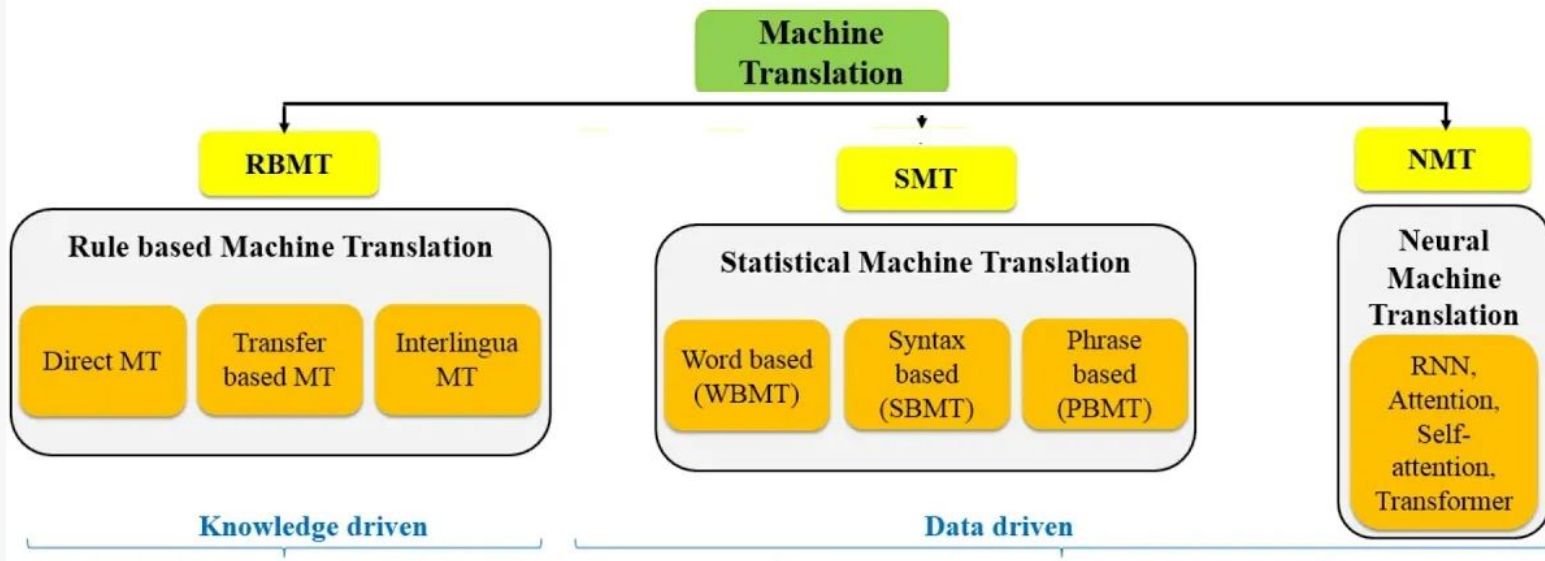
...

...

4. Machine Translation



Approaches to MT



5. Question Answering



This can be on:

1. Text
2. Tabular content such as Pandas Dataframes
3. Image Content
4. Documents with text, tables etc.

6. Sentiment Analysis



WHAT ARE THE CHALLENGES IN SENTIMENT ANALYSIS?

TONE
POLARITY

SARCASM
EMOJIS

IDIOMS
NEGATIONS

COMPARATIVES
EMPLOYEE BIAS

MULTILINGUAL DATA
AUDIO-VISUAL DATA

