Prompt Engineering

LLM course, UW, Seattle

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ChatGPT use cases for NLP

LLM

- **Prompt Engineering for information retrieval** → very common use-case
- **Data Augmentation**
- **Transfer Learning to smaller models**

ChatGPT use cases for NLP

(LLM)

- Prompt Engineering for information retrieval
- **Data Augmentation**
- Transfer Learning to smaller models
-

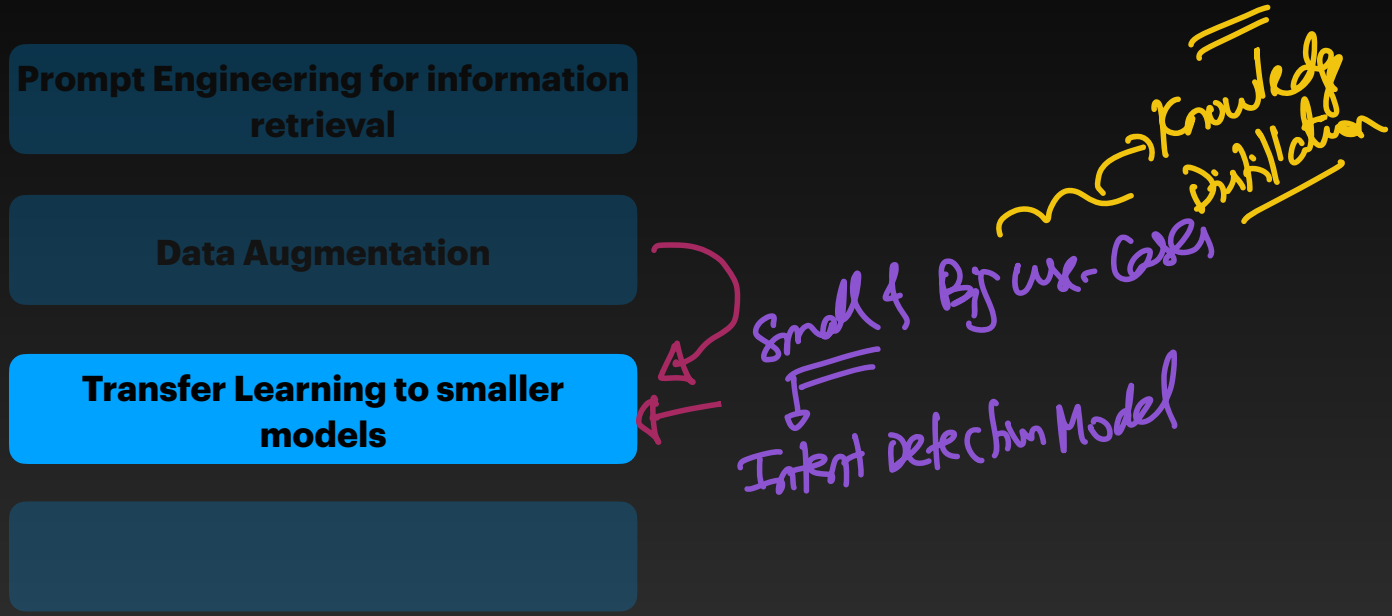
← very useful in industry setting

↖ Gathering "Ground Truth" Labels

"I am not doing good today"

↳ Sad (Label)

ChatGPT use cases for NLP



ChatGPT use cases for NLP

Prompt Engineering for information retrieval

Data Augmentation

Transfer Learning to smaller models

ChatGPT use cases for NLP

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More use cases!

ChatGPT use cases for NLP

LLM

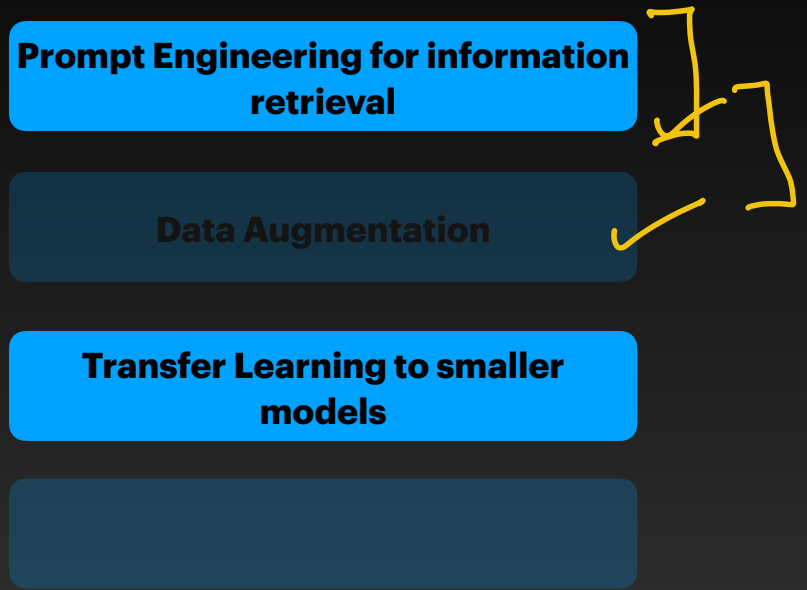
Prompt Engineering for information retrieval

Data Augmentation

Transfer Learning to smaller models

Open AI embeddings for Semantic Search

Today's Focus



Prompt Engineering - Notebook Demo

Let's go take a look!

Pointers for effective prompt engineering

- **Clarity in Instructions, Goals**
- **Providing context**
- **Specificity/Conciseness**

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Specificity/Conciseness

Example from the notebook

The key word doesn't have to be present in the text. Also the key word shouldn't have a space in it.

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Specificity/Conciseness

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Specificity/Conciseness

Example from the notebook

One question should be something a five year old would ask. Another second should be something a mature adult would ask.

Pointers for effective prompt engineering

- Clarity in Instructions, Goals
- Providing context
- **Specificity/Conciseness**

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Specificity/Conciseness

Example from the notebook

Generate 3 distinct key words that capture the most important topics in the text.

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Specificity/Conciseness

Chain of Thought Prompting

Example from the notebook

Explain step by step. Use of <think> tags and <answer> tags

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Chain of Thought Prompting

Specificity/Conciseness

In-Context Learning

ICL

Zero-shot vs Few-short in-context learning

Pointers for effective prompt engineering

Clarity in Instructions, Goals

Providing context

Chain of Thought Prompting

Specificity/Conciseness

In-Context Learning vs RAG Models

ICL vs RAG

In In-context Learning - All data is provided within the context window.

In RAG - First a database of docs is searched before generation from a single relevant doc