

Prompt Engineering: The art and science of designing effective LLM prompts

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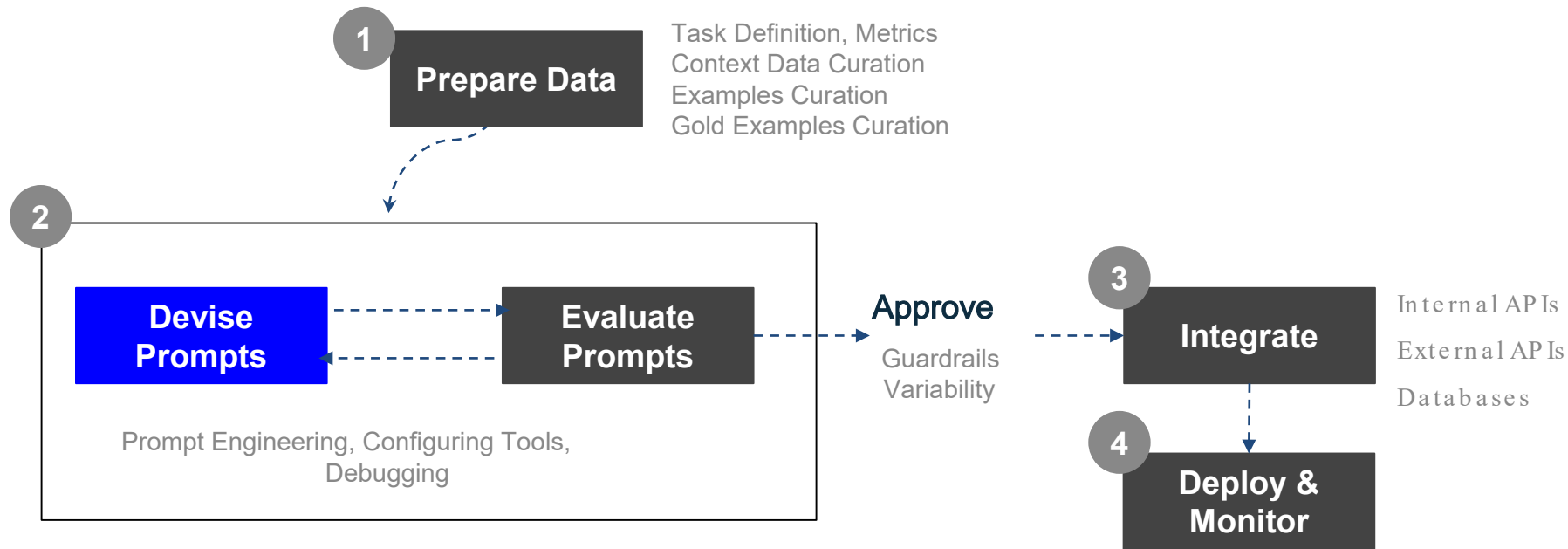
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Agenda

In this session, we'll discuss:

- Introduction to Large Language Models (LLMs)
- Models and Deployments
- Fundamentals of Prompt Engineering

Operationalizing Generative AI

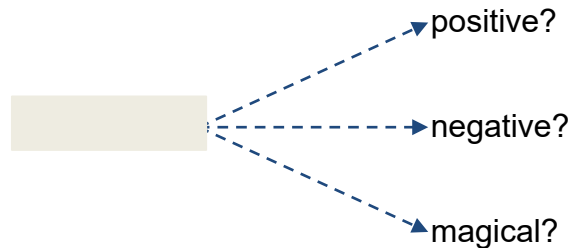


Large Language Models (LLMs)

LLMs are trained using language modeling, that is, predicting the next word in a sequence.

Masked Sample

The movie was awesome. Overall, the experience was

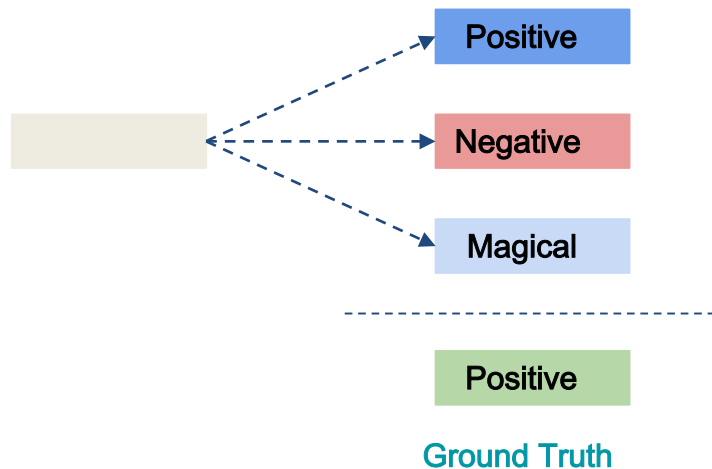


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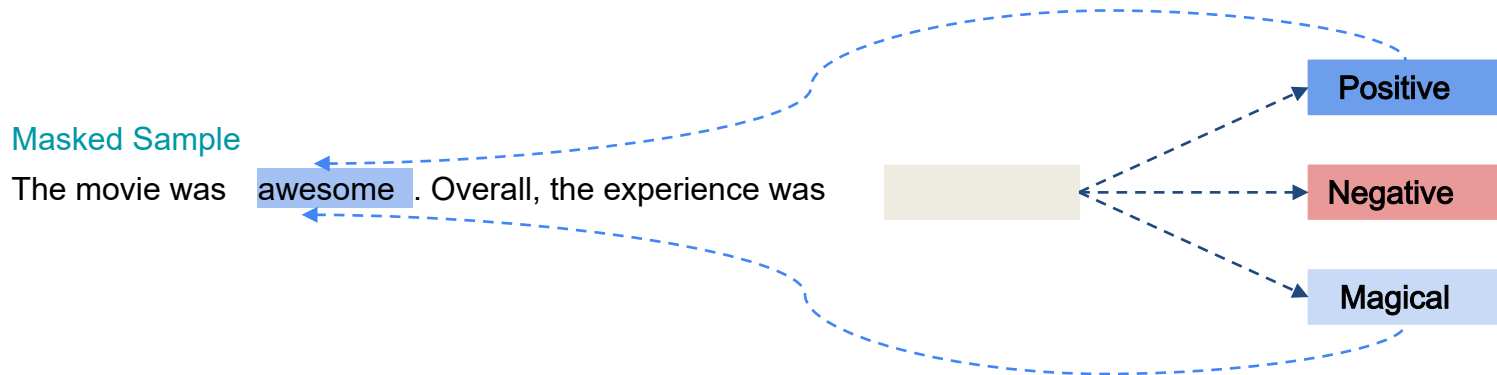
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positive $p = .03$

negative $p = .00001$

...

magical $p = .83$

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positive $p = .03$

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match

...

magical $p = .83$

Large Language Models (LLMs)

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Original Sentence

The movie was awesome. Overall, the experience was positive.

Training Samples

The [REDACTED]

The movie [REDACTED]

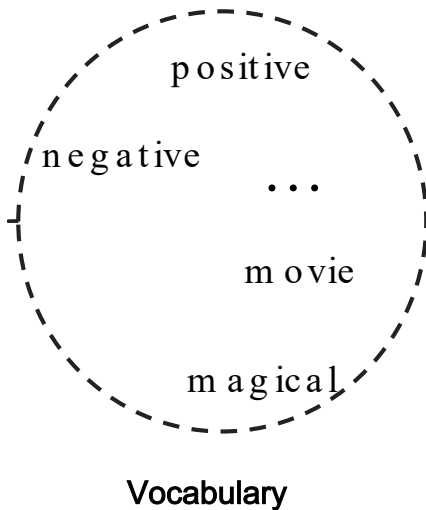
The movie was [REDACTED]

The movie was awesome. [REDACTED]

The movie was awesome. Overall, [REDACTED]

The movie was awesome. Overall, the [REDACTED]

⋮



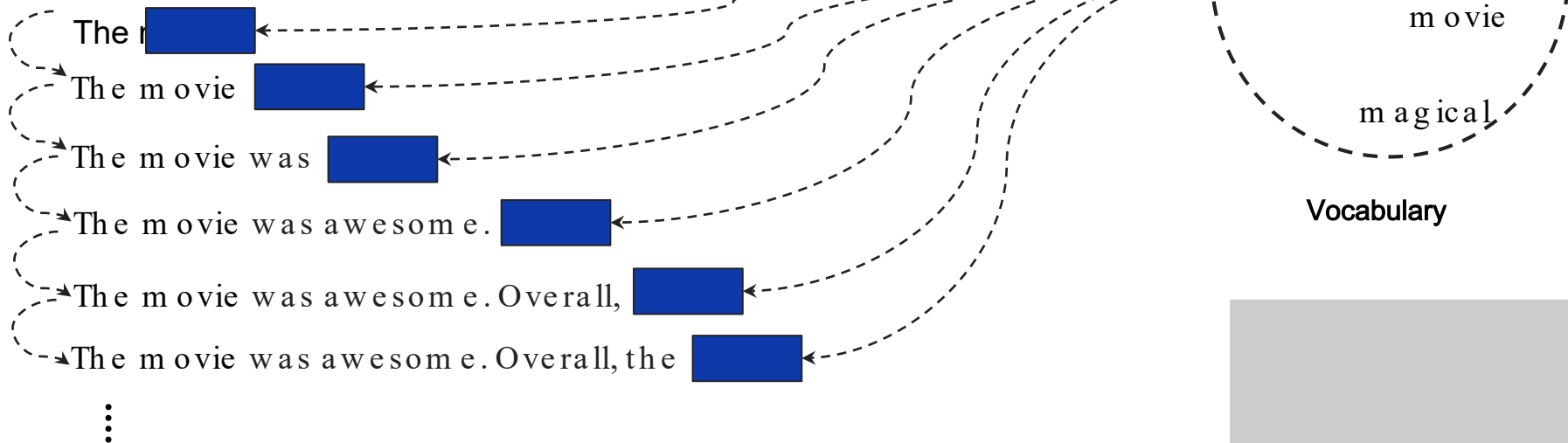
Large Language Models (LLMs)

During **inference**, the LLM predicts the next word in the input sequence.

Input Word = Prompt

The

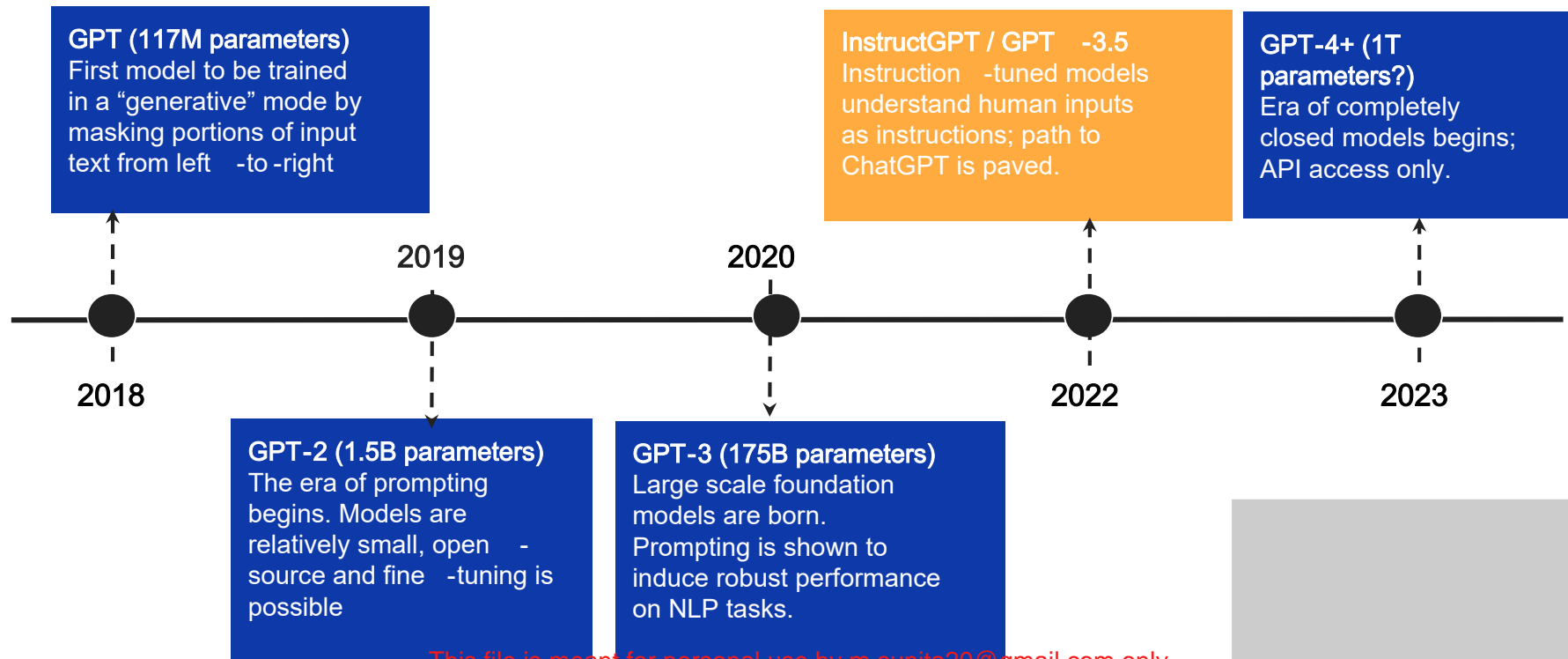
Output, Word -by -Word



Large Language Models (LLMs)

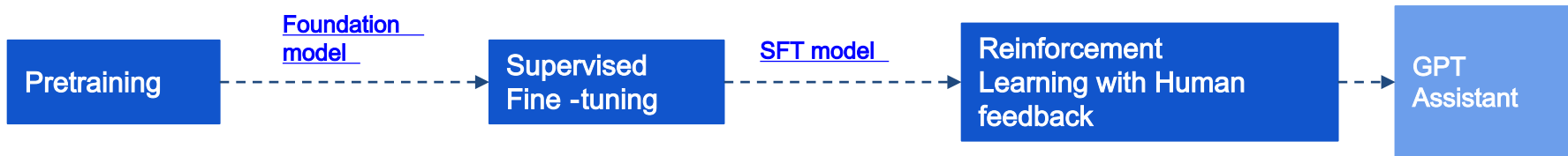
Over the last 2 years, LLMs like ChatGPT have evolved to become

Conversational AI assistants.



Large Language Models (LLMs)

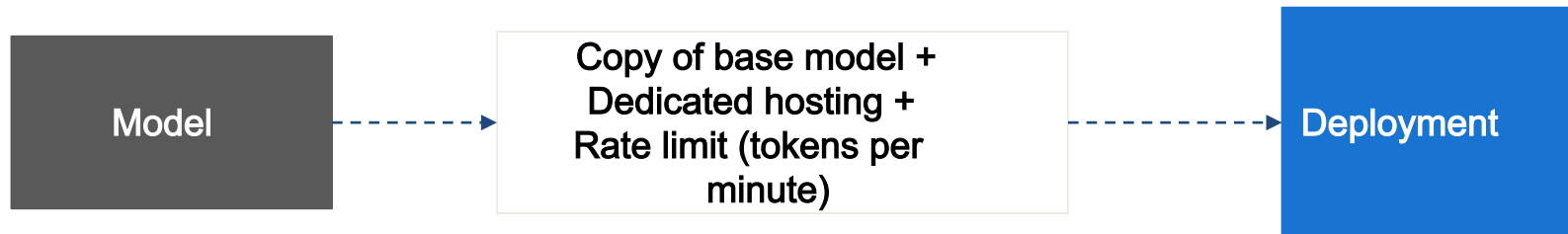
How are LLMs trained today?



Data

Large corpus of internet data	Curated high quality prompt -response pairs	Ranking of prompt responses on quality
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Models and Deployments



Tokens

Token = Sequence of characters found in text

GPT-3 Codex

The movie was awesome. Overall, the experience was positive.

Clear

Show example

Tokens

12

Characters

60

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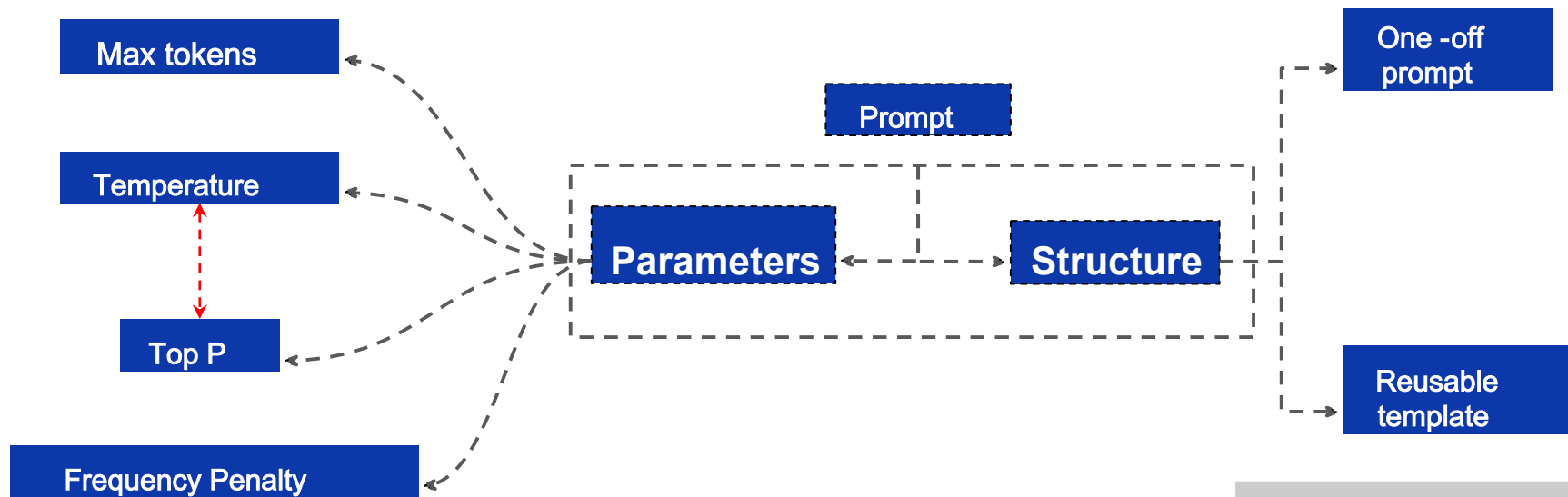
LLM

Parses sentences
as tokens

Prompt Engineering

Prompt = Specific set of instructions sent to a LLM to accomplish a task

Engineering = Iteratively deriving a specific prompt for the task

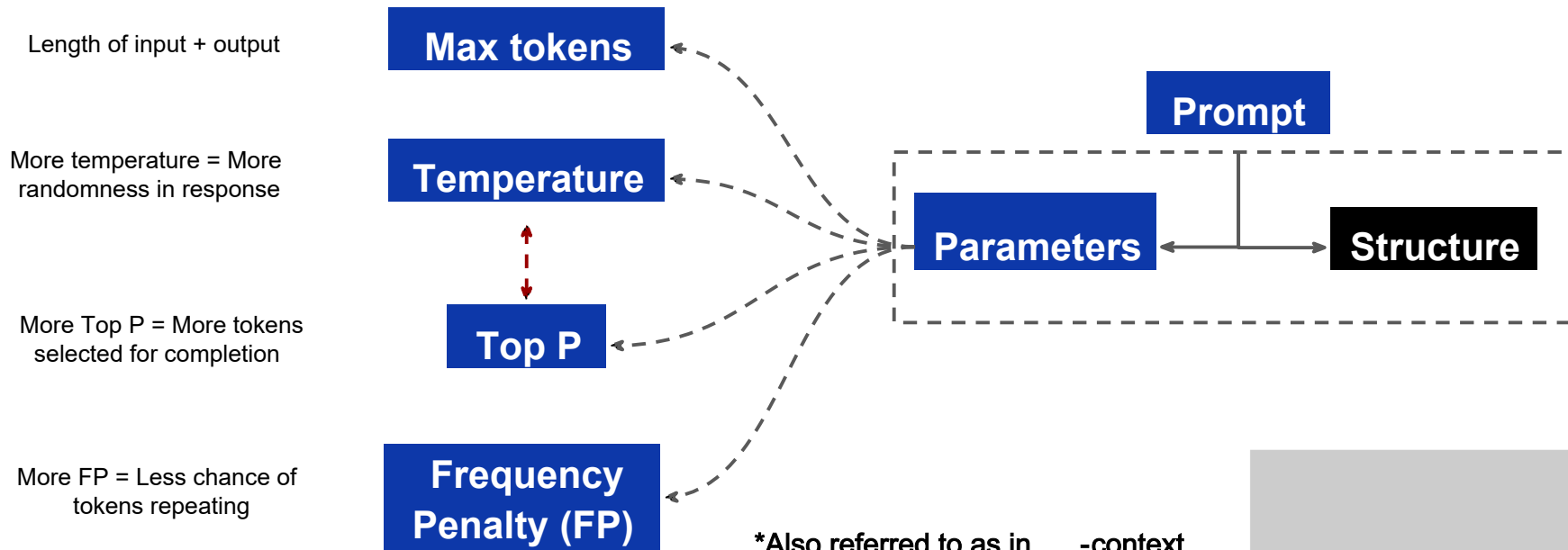


*Also referred to as in-context learning

Prompt Engineering

Prompt = Specific set of instructions sent to a LLM to accomplish a task

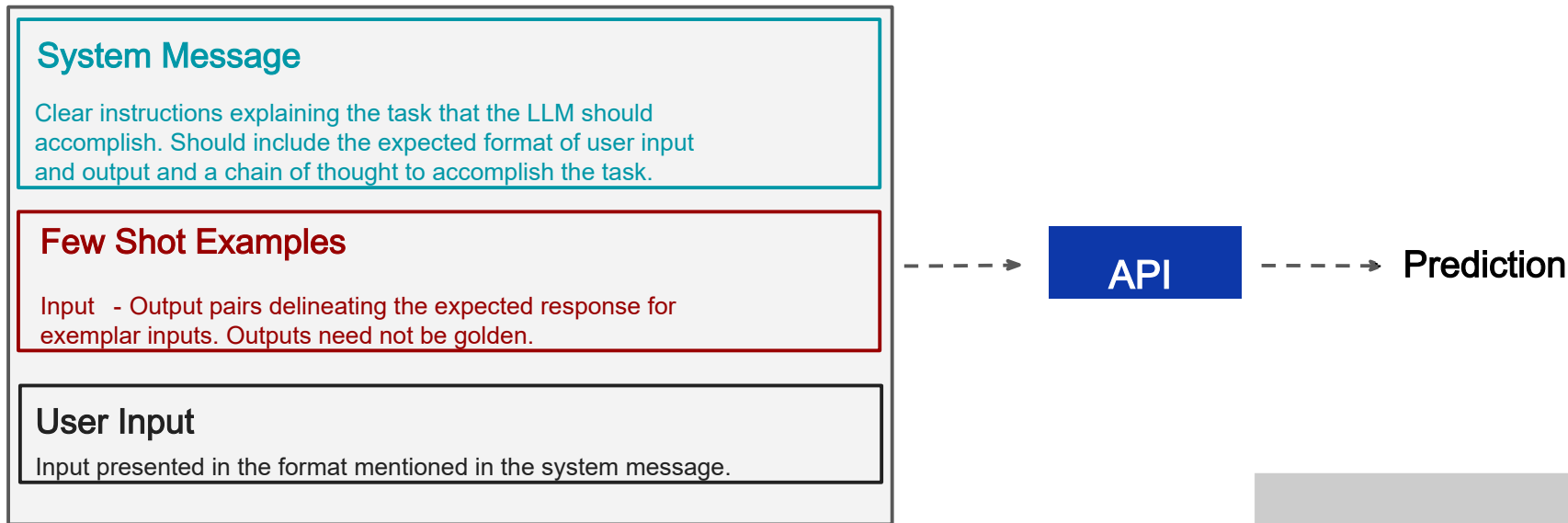
Engineering = Iteratively deriving a specific prompt for the task



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Prompt Engineering

Components of a Prompt Template



Summary

