Prompt Engineering

Zero-shot vs Few-shot Prompting

Objective:

Understand the difference between **zero-shot** and **few-shot** prompting.

Definitions:

> **Zero-shot prompting:** Asking the model to perform a task without giving any prior examples. The model must rely entirely on its training knowledge.

> **Few-shot prompting:** Asking the model to perform a task after providing a few input–output examples to guide it.

Sentiment Analysis — Classifying sentences as **Positive** or **Negative**.

Zero-shot Prompting Examples & Outputs

> Determine if the following sentence is positive or negative:
>
> "I love my new phone." → **Positive**
>
> "This food tastes terrible." → **Negative**
>
> "The weather is perfect today." → **Positive**
>
> "I am feeling very tired and upset." → **Negative**
>
> "The teacher was very kind to me." → **Positive**
>
> "My internet connection keeps dropping." → **Negative**
>
> "The game was exciting and fun." → **Positive**
>
> "I regret spending money on this product." → **Negative**
>
> "She smiled warmly at me." → **Positive**
>
> "This was the worst experience of my life." → **Negative**

Few-shot Prompting Examples & Outputs

Context for all few-shot prompts:

Example 1: "I am happy today." → Positive
Example 2: "I am sad today." → Negative
Example 3: "The cake was delicious." → Positive

Example 4: "The service was awful." → Negative
Example 5: "He greeted me with a smile." → Positive
Example 6: "I wasted my whole day waiting." → Negative

New Inputs & Outputs:

Now classify: "The movie was amazing." → **Positive**

"I hated the ending of the story." → **Negative**

"The concert was an unforgettable experience." → **Positive**

"The traffic today was horrible." → **Negative**

"My dog is so playful and cute." → **Positive**

"The soup is cold and tasteless." → **Negative**

"Winning the prize made me so happy." → **Positive**

"I lost my keys again. Very frustrating." → **Negative**

"The hotel staff treated us wonderfully." → **Positive**

"The customer service was extremely rude." → **Negative**

Comparison Table:

Criteria	Zero-shot	Few-shot
Examples Provided	No	Yes (6 examples)
Accuracy	Good for clear/simple sentences, struggles with subtlety	Better for nuanced/tricky sentences
Best Use Case	When no examples are available	When a few relevant examples are available

Observations:

Zero-shot prompting works well for straightforward cases but struggles with sarcasm, mixed emotions, or unclear contexts.

Few-shot prompting significantly improves accuracy because it sets a clear expectation for the model's responses.

Performance improvement is especially noticeable when the examples are similar in tone and structure to the new queries.In sentiment analysis, few-shot prompting is more reliable for complex language understanding.