**Zero-Shot Prompting**

**-By Divyanshu Gupta**

1. **Overview**

**Zero-shot prompting** is a powerful capability of modern Large Language Models (LLMs) such as **GPT-3.5 Turbo**, **GPT-4**, and **Claude 3**, which enables them to perform tasks **without being provided with any examples or demonstrations** in the prompt. This method relies on the model's pre-trained knowledge and its ability to generalize from massive amounts of training data.

Zero-shot prompts directly **instruct the model** to perform a task, if it understands the task based on how it is phrased.

1. **Key Concept**

* **Definition:**  
  A zero-shot prompt provides **no task-specific examples**. The model must infer the expected behaviour **solely based on the instructions or question**.
* **Benefit:**  
  Allows for rapid prototyping and interaction with LLMs, especially for well-understood tasks, **without requiring prior examples**.

1. **Example – Text Classification**

**Prompt:**

A screenshot of a computer

AI-generated content may be incorrect.

**Explanation:**  
Despite the lack of labelled examples, the model correctly identifies the sentiment as *Neutral*. This demonstrates the **zero-shot capability**, where the model interprets “Sentiment:” as a cue to perform sentiment analysis.

* Recognize task instructions embedded in natural language.
* Understand implicit objectives like “classify,” “summarize,” or “translate.”
* Generate coherent outputs even when no examples are provided.

1. **When Zero-Shot Prompting Fails**

**While zero-shot prompting works well for many tasks, it may not be sufficient for complex, ambiguous, or domain-specific tasks.**

**Solution:  
In such cases, we can use few-shot prompting by including a few labelled examples or demonstrations in the prompt to guide the model.**

1. **Summary Points**

* **Zero-shot prompting requires no examples—just clear instructions.**
* **Relies on the pre-trained knowledge of the model and instruction-following capabilities.**
* **Powered by instruction tuning and RLHF techniques.**
* **Best suited for simple or well-known tasks like classification, summarization, or translation.**
* **If zero-shot results are unsatisfactory, use few-shot prompting instead.**