



Mastering Prompt Engineering

Unlock the full potential of AI with effective communication.

The Foundation: Fundamental Prompting Techniques

Explore essential methods to guide AI responses, from direct questions to structured examples.

01

Zero-Shot Prompting

Direct queries without examples for simple, clear tasks.

02

One-Shot Prompting

A single example to define desired response format.

03

Few-Shot Prompting

Multiple examples to establish complex patterns and nuanced outputs.

Zero-Shot Prompting: The Direct Approach

The simplest way to interact: ask directly when the AI already possesses clear domain knowledge.

Classify this movie review as positive, negative, or neutral:

"The film was visually stunning but the plot felt rushed."

When to Use:

- Simple, well-defined tasks
- When the model has clear knowledge of the domain
- Quick, one-off requests



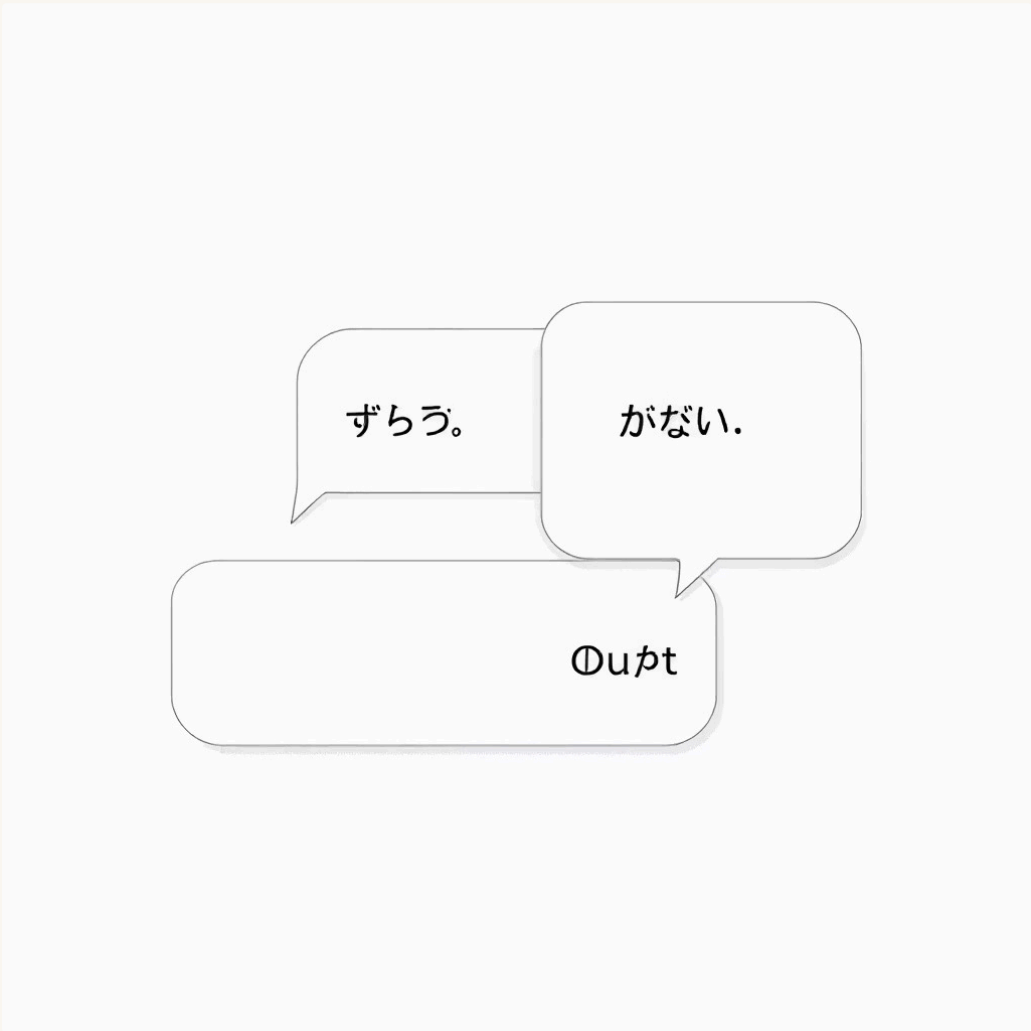
One-Shot & Few-Shot Prompting: Learning from Examples

Guide the AI's understanding and response format by providing illustrative examples.

One-Shot: Single Example Clarity

Provide one example to define the desired output format or task.

Translate English to French: English: "Hello, how are you?"
French: "Bonjour, comment allez-vous?" English: "Where is the library?" French:

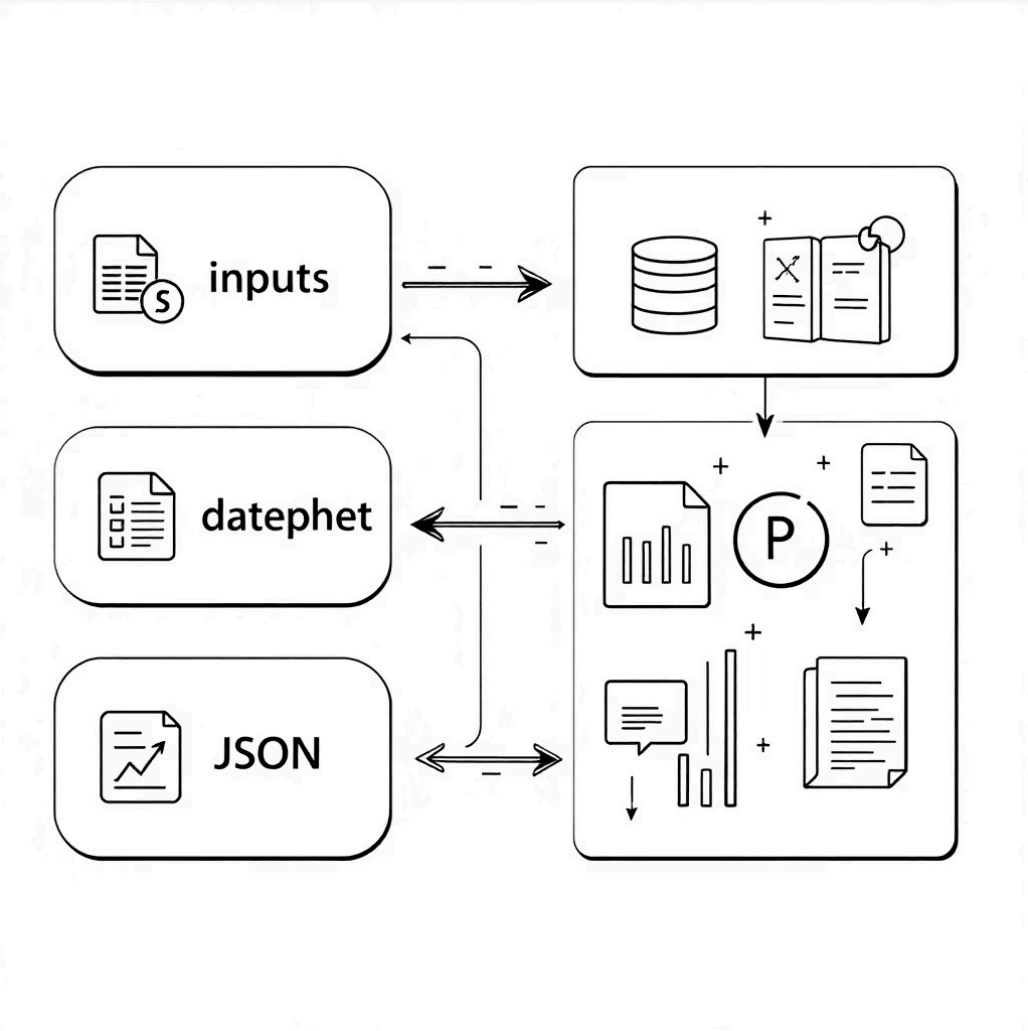


Few-Shot: Pattern Recognition

Use multiple examples to establish a clear pattern for more complex tasks.

Convert customer feedback to structured data: Feedback: "Great service, but food was cold" JSON: {"service": "positive", "food": "negative", "overall": "mixed"} Feedback: "Terrible food and rude staff" JSON:

- Use 3-5 high-quality, diverse examples.
- Ensure consistency and mix up classes for classification.



Shaping AI Behavior: System & Role Prompting

Define the AI's persona, overall context, and behavioral guidelines for consistent interactions.



System Prompting

Set overall context and persistent behavior guidelines.

You are a helpful travel guide. Provide practical, accurate information about destinations.



Role Prompting

Assign a specific character or expertise to the AI.

Act as an experienced software architect. I need help designing a scalable web application.

Contextual Prompting: Guiding with Background

Provide specific background information to ensure the AI's response is relevant and tailored.



Example Scenario:

Context: You're writing for a tech blog aimed at beginners who have never coded before. Write a 200-word explanation of what an API is, using simple language and practical examples.

This technique grounds the AI's output, making it highly applicable to the specified audience or situation.

Advanced Strategies: Reasoning for Complex Problems

Tackle intricate challenges by encouraging the AI to think step-by-step or explore multiple solutions.



Chain of Thought (CoT)

Encourage step-by-step reasoning for math, logic, and multi-step processes.

Self-Consistency

Generate multiple reasoning paths and select the most common answer for reliability.

Step-Back Prompting

Ask a general question first to establish context, then specific questions.

Chain of Thought (CoT): Thinking Step-by-Step

Break down complex problems, guiding the AI through logical progression for accurate solutions.

Solve this step by step: If I was 6 when my sister was half my age, how old is my sister when I'm 40? Let me think through this step by step:

Best Practices:

- Use phrases like "Let's think step by step."
- Set temperature to 0 for consistent reasoning.
- Extract final answers separately from reasoning.



ReAct & Tree of Thoughts: Combining Action and Exploration

These powerful strategies enable AI to reason, act on external information, and explore diverse solutions.

ReAct (Reasoning + Acting)

Interleaves reasoning (Thought), actions (Action), and observations (Observation) to solve problems.

Tree of Thoughts (ToT)

Explores multiple reasoning branches simultaneously, evaluating each for creative problem-solving.



Action

Utilizes tools or external data (e.g., web search) based on reasoning.

Observation

Processes the results from actions to refine subsequent steps.

Prompt Engineering: Best Practices for Impact

Craft effective prompts to maximize AI utility and ensure precise, desirable outputs.



instructions.

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Active listening is thear

Be Specific & Clear

Provide precise instructions, avoiding vague language.

Use Action Verbs

Explicitly state the desired action (e.g., Analyze, Summarize, Generate).

Provide Examples

Illustrate expectations with clear, consistent examples.

Structure Your Prompts

Use clear formatting: Task, Context, Format, Example.

Iterate & Document

Refine prompts based on results and keep a record of successful patterns.