

Changing How an LLM Thinks About a Problem

LLM Prompt Patterns

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Introduction

I have, by nature, high curiosity. As a technophile, I just “play” with technology to discover its limits, its usefulness and what to be wary of. This article arose from such play with an LLM. I was curious about how the LLM differed from human reasoning and whether there were ways to extend LLM usefulness by bringing it closer to human reasoning. This article is the result and can be regarded as part 2 of my practical guide to using LLMs (<https://blog.boundy.uk/content/pdf/WorkingWithLLMs.pdf>)

LLM Answers

Most advice about using Large Language Models (LLMs) focuses on getting better answers. Common recommendations include being specific, providing context, defining the output format, and giving examples. These techniques are useful, but they all focus on the same thing: shaping the answer.

This article describes a supplementary approach that can be even more powerful. Instead of telling the LLM what answer you want, tell it how to approach the problem. In effect, you can provide the LLM with a reasoning method.

The Difference Between Answers and Approaches

Suppose you ask:

How should I manage recruitment against a fixed budget?

Most LLMs will answer as a recruitment or management problem. They will discuss workforce planning, budgets, succession planning, and organisational priorities.

A human systems thinker, however, might approach the problem differently. They might recognise that the situation is not fundamentally about recruitment at all. Instead, it is a more general problem:

How should limited resources be allocated when the future is uncertain?

Once the problem is framed in this way, examples from many different fields become relevant, for example:

- Military commanders maintain reserves rather than committing all forces.
- Businesses keep cash reserves.

- Warehouses maintain buffer stock.
- Computer systems reserve spare capacity.

The domain changes, but the underlying pattern remains the same. This ability to recognise similar structures in different fields is (according to my knowledgeable LLM!) known as analogical reasoning or pattern transfer.

Why This Matters

Many valuable insights arise when ideas are transferred between domains, so a military concept may improve business management or an engineering concept may improve organisational planning.

Experts often become highly skilled within their own domain. Generalists and systems thinkers often gain an advantage by recognising patterns that occur across domains. LLMs can perform this kind of reasoning, but they generally do not do so automatically. By default, they tend to stay within the domain of the question.

This is where I came across the idea of a “prompt pattern”. Prompt patterns can encourage LLMs to operate at a higher level of abstraction.

What Is a Prompt Pattern?

Prompt patterns are to reasoning what templates are to document creation. A prompt pattern is a reusable set of instructions that guides how the LLM approaches problems. Rather than writing a long explanation every time, you create a named method and reuse it.

For example:

Pattern Transfer Mode

1. Abstract the problem into its underlying structure.
2. Identify the class of problem involved.
3. Identify similar structures in unrelated domains.
4. Test the analogies for genuine structural similarity.
5. Extract reusable principles or invariants.
6. Apply those insights back to the original problem.
7. Clearly distinguish evidence, interpretation, and speculation.

When used consistently, this pattern encourages the LLM to search for deeper structures rather than stopping at the first domain-specific answer.

Discovering Your Own Reasoning Style

Before creating prompt patterns, it is worth considering an important question: *how do you actually think?*

Most experienced people develop ways of analysing problems over many years. Managers, teachers, engineers, historians, researchers, designers and programmers all develop habits of thought that help them make sense of complex situations. The difficulty is that these methods often become unconscious. We know how we think, but we may struggle to describe the process to someone else.

Start with examples

One of the most useful applications of an LLM is helping to make these hidden processes visible. There are many different approaches to reasoning (possibly as many as there are people in the world!) and a practical approach is to examine several examples of problems that you have solved successfully. Ask yourself:

- What questions did I ask?
- What information did I look for first?
- What assumptions did I challenge?
- What made me trust one explanation more than another?
- What did I do that a less experienced person might not have done?

Develop iteratively

You can also use the LLM as a partner in this investigation. Present it with examples of your reasoning and ask:

- What common patterns do you see in my approach?
- What steps do I consistently perform?
- How would you describe my problem-solving method?
- What prompt pattern would reproduce this style of thinking?

The answers will not be perfect, but will provide a useful starting point. Then the process is iterative. Examine the proposed pattern, challenge it, refine it and test it against real problems. Ask yourself whether the pattern genuinely reflects how you think when solving difficult problems.

For example, one person may discover that they naturally begin by gathering evidence and evaluating its reliability. Another may realise that they instinctively search for incentives and stakeholder motivations. A third may recognise that they routinely compare situations with examples drawn from unrelated fields.

Be clear about the result

Over time, the resulting prompt pattern becomes more than an instruction for an LLM. It becomes a description of your own reasoning process.

This can be valuable even if you never use the prompt with an LLM again. The exercise forces you to articulate methods that may previously have been intuitive. In doing so, it often improves your own understanding of how you approach problems and why certain approaches work better than others.

Designing Your Own Prompt Patterns

The most effective prompt patterns usually emerge from observing how you think.

Ask yourself:

- What do I often wish the LLM would do?
- What valuable steps do I perform mentally that the LLM tends to skip?
- What makes a response useful to me?

Once you identify these steps, write them down as a process.

For example, someone who values evidence-based reasoning might create:

Evidence Mode

1. Identify relevant facts.
2. Assess the quality of evidence.
3. Distinguish facts from assumptions.
4. Consider alternative interpretations.
5. Draw conclusions proportional to the evidence.

Someone who wants practical advice might create:

Decision Mode

1. Define the decision to be made.
2. Identify constraints and objectives.
3. Generate alternatives.
4. Assess trade-offs.
5. Recommend an option and explain why.

Someone interested in creativity might create:

Idea Generation Mode

1. Generate many possible ideas.
2. Combine ideas from unrelated fields.
3. Challenge obvious assumptions.
4. Identify unusual possibilities.
5. Evaluate the strongest candidates.

In each case, the prompt is not defining an answer. It is defining a method.

A Useful Design Principle

Good prompt patterns tend to focus on process rather than content.

This is generally weaker: “give me a strategic answer”.

Different people mean different things by “strategic.”. Instead describe a process that can be followed consistently. For example: “Identify objectives, constraints, stakeholders, incentives, risks, and trade-offs before recommending a course of action”.

Distinguishing Strong and Weak Analogies

One danger when searching for patterns is the use of superficial analogies.

For example:

- A company is not an army.
- A computer network is not an ecosystem.
- A school is not a factory.

However, these systems may still share important structural features. The question is not whether two things look alike but whether they share the same underlying relationships. A strong analogy looks at structure, but a weak analogy preserves appearance.

This distinction is why a good prompt pattern includes a step such as: “test the analogies for genuine structural similarity”. Without this step, analogies can become misleading.

Prompt Patterns as Personal Thinking Tools

The most interesting use of prompt patterns may not be improving the LLM, it may be making your own thinking more explicit. Many experienced professionals, managers, teachers, engineers, historians, designers, and researchers develop personal ways of analysing problems. Often these

methods become intuitive and difficult to describe. Creating a prompt pattern forces those methods to be articulated.

Seen in this light, prompt patterns are part of a much older human tradition. Throughout history, experts have sought ways to capture successful methods and pass them on to others. Military doctrine, scientific methods, design patterns, engineering standards and professional procedures all serve this purpose. Prompt patterns do the same thing for reasoning. They allow us to make explicit the mental processes that are often hidden, intuitive and difficult to describe. In doing so, they can improve both the performance of the LLM and our understanding of how we think ourselves.