

# Prompt Ensembling - Combining Multiple Prompts

Source: Conversation with OpenAI ChatGPT - September 11 2024

 **You:**

Let us talk about what is called prompt-ensembling, right, I mean suppose I have a legal problem, which is not too complicated after all. I consider different approaches in asking you about such details.

What comes to my mind is to cumulate a couple of single prompts by means of what is called an ensemble, which means to group certain items viewed as a whole rather than individually.

Is this my idea in accordance with your idea? And if so, could you give me a pretty good example of such a prompt-ensembling approach with regard to a legal question?

 **ChatGPT:**

Indeed, what you're describing as prompt-ensembling aligns with the concept of combining multiple prompts or queries into an ensemble to address a particular problem. This approach is often used in natural language processing tasks where different prompts may provide complementary information or perspectives.

In the context of a legal question, let's say you're trying to determine the legality of a contract clause regarding non-compete agreements. You could formulate several prompts to gather insights from a language model like me:

1. "Are non-compete agreements enforceable in [jurisdiction]?"
2. "What are the factors that courts consider when evaluating the enforceability of non-compete agreements?"
3. "Can you provide examples of cases where non-compete agreements were upheld?"
4. "What are the arguments typically raised against the enforceability of non-compete agreements?"

Each of these prompts may yield different insights or examples that, when combined, provide a comprehensive understanding of the legal landscape surrounding non-compete agreements.

By ensembling the responses to these prompts, you can gain a more nuanced perspective and potentially uncover nuances that wouldn't be apparent from a single prompt alone.

 **You:**

So your approach presented here is basically about eliciting complementary information by means of such an ensemble about non-compete agreements within a certain jurisdiction, while you try to enable me as the one who is eliciting such information to consider the subject (i.e. non-compete agreements) from different perspectives, right?



ChatGPT:

Exactly! Your understanding is spot on. By using an ensemble of prompts, you can gather a variety of perspectives and insights on the topic of non-compete agreements within a specific jurisdiction.

This approach enables you to consider the subject from multiple angles, helping you to better understand the nuances, complexities, and potential outcomes related to non-compete agreements in that jurisdiction.

Each prompt may highlight different aspects of the topic, providing a more comprehensive understanding when combined. This method can be particularly useful when dealing with complex legal issues where various factors and considerations come into play.



You:

From what I notice, there are different sub-approaches in generating prompt-ensembles in the course of a smart prompt-design:

\*common ensembling

\* results of different prompts are cumulated in a usual way

\*weighted ensembling

\* results of different prompts are assigned a certain weight and

\*active ensembling\* calling up the model to dynamically answer in accordance with such an assigned weight.

That is what I heard from a source considering itself familiar with the matter. What is your idea about such sub-approaches in generating prompt-ensembles?



ChatGPT:

The sub-approaches you've mentioned for generating prompt ensembles indeed represent different strategies for combining the results of multiple prompts. Let's delve into each one:

1. **Common Ensembling:** In this approach, the results of different prompts are simply aggregated or combined in a conventional manner, such as averaging the scores or merging the outputs. This method treats all prompts equally without assigning any specific weights or considering their relative importance.
2. **Weighted Ensembling:** Weighted ensembling involves assigning a certain weight or importance to each prompt before combining their results. This allows you to emphasize the contribution of certain prompts over others based on factors like relevance, reliability, or the specific aspect of the problem they address. For example, if one prompt is known to yield more accurate results or

covers a critical aspect of the problem, it can be assigned a higher weight.

3. **Active Ensembling**: Active ensembling takes the concept a step further by dynamically adjusting the weights assigned to each prompt based on the model's responses. This approach involves iteratively querying the model, evaluating the responses, and updating the weights accordingly. It enables adaptive behavior where the ensemble evolves over time based on the model's performance and the evolving nature of the problem.

Each of these sub-approaches has its own strengths and weaknesses, and the choice depends on factors like the complexity of the problem, the availability of data, and the desired level of adaptability. Experimentation and empirical evaluation are often necessary to determine the most effective approach for a specific task.