



Interaction with Large Scale Models

Practical Sheet 5

Prompt Debugging

For each exercise below, make sure to explain why the original prompt could be problematic. Rewrite each prompt and describe the reasoning behind the changes made. Test the new prompt (if possible) to ensure the changes lead to a more accurate, clear, and consistent model output.

1. Ambiguity in Prompts

Task: Identify the ambiguity in the following prompt and rewrite it to be more specific.

Prompt: *"What is the fastest animal?"*

Issues to address: Consider that "fastest" could refer to speed in flight, land, or water. Be specific about the context.

2. Dealing with Bias in Prompts

Task: The following prompt may lead to biased output. Rewrite it to remove any bias.

Prompt: *"Why are electric cars better than traditional gas-powered cars?"*

Issues to address: The framing assumes electric cars are better without a balanced comparison. Provide a neutral prompt that invites a fair comparison of both technologies.

3. Verbosity in Prompts

Task: The following prompt is overly verbose. Rewrite it to be concise and clear without losing essential details.

Prompt: *"Please, as an expert who has spent many years in the field of machine learning, analyzing data, and working with complex algorithms, explain how the concept of backpropagation works in neural networks and what makes it so important in the training process."*



Issues to address: Eliminate unnecessary words while retaining the focus of the question.

4. Handling Hallucinated Outputs

Task: The following prompt leads to a hallucinated answer. Revise the prompt to make it more specific and accurate.

Prompt: *"Explain how quantum computing works."*

Flawed output: *"Quantum computing uses magical particles that teleport to calculate everything instantly."*

Issues to address: Clarify the prompt to ask for scientifically accurate explanations and remove speculative language.

5. Inconsistent Outputs

Task: The following prompt may lead to inconsistent outputs. Rewrite it to ensure the model can generate more consistent answers.

Prompt: *"What are the benefits of exercise?"*

Issues to address: The prompt is open-ended and could result in too many different interpretations. Make the task more specific to ensure more consistent responses.

6. Step-by-Step Reasoning

Task: The following prompt lacks clear instructions for step-by-step reasoning. Revise the prompt to require detailed, step-by-step reasoning to arrive at a solution.

Prompt: *"How does a car engine work?"*

Issues to address: The prompt needs to be restructured so the model provides a structured explanation, breaking down the concept into steps or stages.