

# Introduction to Prompt Engineering.

ZHAW & UZH Digital Sustainable Finance Summer School

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# Motivation

- Large Language Models (LLMs) are powerful tools for analysis, content creation, and problem-solving in finance.
- The quality of their output is directly dependent on the quality of our input.
- Mastering "prompt engineering" allows us to unlock the full potential of these models for complex domains like digital sustainable finance.
- Think of it as learning to communicate effectively with a highly skilled, but very literal, financial analyst.

# Key Takeaways for Today

- 1 Understand what a prompt is and how it influences an AI's response.
- 2 Learn the key components of a well-structured prompt.
- 3 Be able to construct and refine basic prompts for better results in sustainable finance.

# What is a Large Language Model (LLM)?

## Analogy: The Skilled Financial Analyst

Think of an LLM as an incredibly knowledgeable and skilled financial analyst. It has access to vast market data and reports but needs **very specific instructions** to perform a task correctly. It doesn't "know" what you want; it can only interpret what you *say*.

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The instructions we give this analyst are called **prompts**.

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-> *Gives a focused comparison.*
- **Great:** "Explain the difference between green bonds and sustainability-linked bonds to a first-year finance student, using an analogy of funding a community garden."  
-> *Gives a creative, targeted, and easy-to-understand explanation.*

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## Specificity Matters

- **Vague Prompt:** "Write about ESG."
- **Result:** A generic overview of Environmental, Social, and Governance factors.
- **Specific Prompt:** "Write a 150-word summary explaining the 'E', 'S', and 'G' pillars of ESG investing for a retail investor's blog."
- **Result:** A highly specific, targeted summary that matches the user's intended audience and format.

# The Core Components of a Prompt

A great prompt often includes a combination of these four elements:

- 1 **Role:** Assign a persona to the AI. This sets the context for its tone and knowledge base.
- 2 **Task:** The specific action you want the AI to perform.
- 3 **Context:** Background information, constraints, and details needed to complete the task.
- 4 **Format:** The desired structure of the output (e.g., list, table, JSON, paragraph).

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## Example Breakdown

"As a **sustainable finance analyst (Role)**, identify **three key risks for a fintech company developing a carbon footprint tracking app (Task)**. Consider **regulatory changes, data accuracy, and user adoption challenges (Context)**. Format the output as a **bulleted list with a brief explanation for each risk (Format)**."

# Exploring Different Types of Prompts

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Asking the model to do something without a prior example.

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## Chain-of-Thought (CoT) Prompting

Asking the model to "think step-by-step" to break down complex problems.

*Example: "A green fund invests \$10M... What is the CO2 reduction per million dollars invested? Let's think step by step."*



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# Live Exercise: From Bad to Good

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- **Iteration 1 (Bad):** "Write about a green fund."
- **Iteration 2 (Better):** "Draft a proposal for a new investment fund focused on sustainable technology."
- **Iteration 3 (Great):** "Act as a product manager at a digital investment bank. Draft a one-page concept note for a new ETF named 'Global Clean Water Innovators'. Focus on companies developing water purification technologies. Mention the target audience (millennial and Gen Z investors) and its alignment with UN SDG 6. Keep the tone optimistic."

# Iteration: The Prompting Conversation

Your first prompt is rarely your last. Use the AI's response to refine your next prompt.

## Example of Iteration

**1 You:** "Analyze this company's sustainability report."

**2 AI:** (Provides a generic summary.)

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- 1 **You:** "Analyze this company's sustainability report."
- 2 **AI:** (Provides a generic summary.)
- 3 **You:** "That's too general. Focus specifically on their carbon emissions data. Is it improving or getting worse over the last three years?"
- 4 **AI:** (Provides a trend analysis.)

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- 2 **AI:** (Provides a generic summary.)
- 3 **You:** "That's too general. Focus specifically on their carbon emissions data. Is it improving or getting worse over the last three years?"
- 4 **AI:** (Provides a trend analysis.)
- 5 **You:** "Okay, the emissions are decreasing. Now, compare their emissions reduction target to the targets set by two of their main competitors."

# Using the LLM to Improve Your Prompts

## Meta-Prompting

Don't be afraid to ask the model for help! It can be a powerful brainstorming partner for prompt creation.

## Example

"I need to write a report on the risks and opportunities of using AI in ESG scoring. Can you suggest 5 effective prompts I could use to get the best results from you for different sections of the report (e.g., introduction, risk analysis, case studies)?"



# Final Recap

## Key Takeaways

- 1 Be Specific
- 2 Provide Context
- 3 Assign a Role
- 4 Iterate

Q&A

Thank you

Thanks for listening

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