

Prompt Engineering Guidelines

How to optimize the results from LLMs for Your Needs

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How LLMs (e.g., ChatGPT) Work



Attention Is The Key Concept Of A Transformer, Which Enables It To Process Sequential Data In Parallel.

Attention makes context-aware

Key Concept

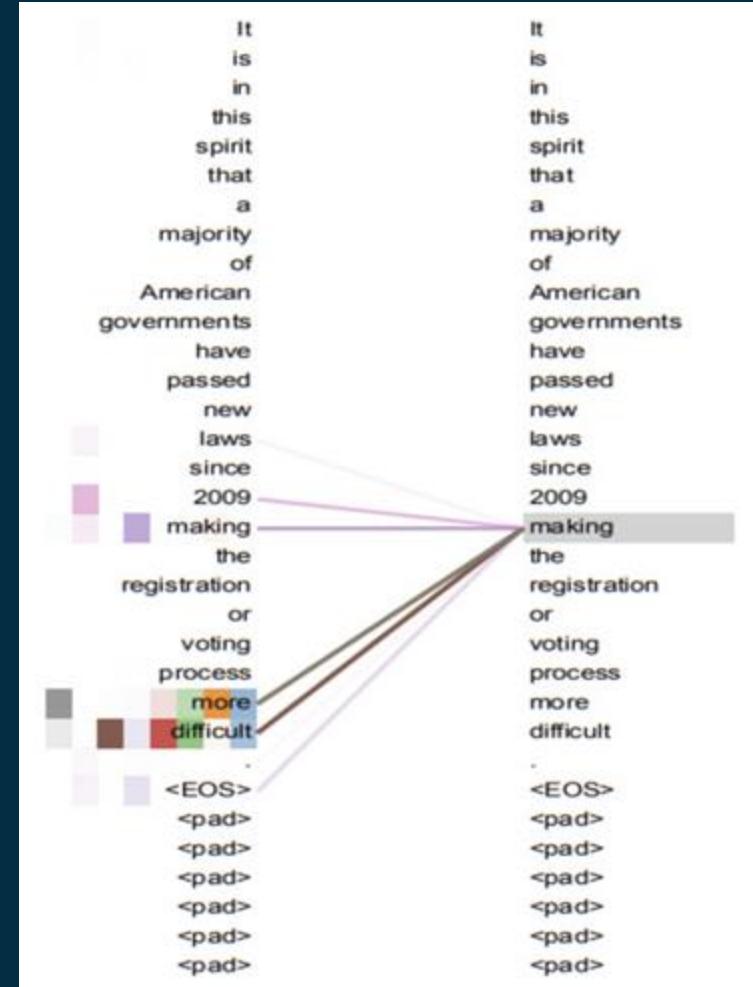
- A technique in neural networks that allows the model to focus on specific parts of the input data
- Attention helps the model determine which word in the source sentence are most relevant to the corresponding words in the target sentence in the context of machine translation

How it works

- It calculates attention score. The model assigns weights to different parts of the input, indicating their importance to generate the output.

Advantages

- It captures long-range dependencies. Effectively models relationship between distant elements in a sequence, addressing the vanishing gradient problem in RNN or LSTM
- It handles variable-length inputs without padding or truncation



How To Make LLMs Focus On The Specific Context

Effectively Communicating and Gaining an Understanding of the Problem Domain

- Provide LLMs with a precise understanding of the problem
- e.g., Task, context, constraints

Drawing Out And Harnessing Expertise

- Specialize LLMs by assigning it a specific domain of expertise
- Provide it with terms related to a particular profession, technical jargon, or referencing materials (e.g., paper)

Crafting Effective Prompts for Optimal Results

- Clearly define the expected format and structure of the successful output for LLMs, including providing examples of ideal results and desired formats
- e.g., Output format, Content structure style and tone, Length and complexity, examples

Real Example - Generate Resolution Plan Agent as a case study

Common Mistakes When Writing LLM Agent Instructions

Major Problem Categories from the Prompt of Generate Resolution Plan Agent

Flow/Logic Issues	Language/Writing Issues	Structural Problems	Logic Gaps	Incompleteness & Redundancy
<ul style="list-style-type: none">Step 3.2 says "exit workflow" but Step 4 still existsInstructions say "provide summary" but no actual step shows it to usersDuplicate step numbering and inconsistent formatting	<ul style="list-style-type: none">Typos, grammar errors, spacing mistakesInconsistent emphasis (<input checked="" type="checkbox"/>, bold, CAPS) with no clear hierarchy	<ul style="list-style-type: none">No error handling mechanismsInconsistent agent naming (same thing called by different names)Inappropriate data references (directly referencing subagent tools)	<ul style="list-style-type: none">Unclear failure scenario handlingContradictory instructions ("ALWAYS follow this" but provides branching logic)	<ul style="list-style-type: none">No confirmation step for save successUnnecessary repetition of same contentOverly verbose (could be 50% shorter)

Build Tools DEF report

http://builddoools1.servicenow.com/nav/uiclassic/params/t!target/x_snc_defect_defect.do?sys_id=3D06cd18179c399b2d0bcd00fbd001311b%26ysparam.view%3DScrum%26ysparam.record_target%3Dx_snc_defect_defect%26ysparam_record_row%3D3%26ysparam_record_rows%3D7%26ysparam_record_list%3Dsys_tags.6f4ee8c0c311f690a2fc3436050131cf%25D6f4ee8c0c311f690a2fc3436050131cf%25Eeu_product_service%25D0e2c998a83c86a50dfa638426daad398%25Estate%2521%25D29%25EOrstate%253DNULL%255Estate%2521%25D23%25EOrstate%253DNULL%255EORDERBYnumber%26ysparam_view%3DScrum

Real Example - Generate Resolution Plan Agent as a case study

LLM instructions must be clear, consistent, complete, and concise. Contradictions or gaps cause confusion and lead to defects

- **Why Does This Highlight the Importance of Prompting?**

1. Prompt = Operating Manual for LLMs

- LLM Agent "instructions" are essentially the **system prompt**
- Unclear prompts → LLM performs incorrectly
- This case demonstrates that "bad prompts lead to system defects"

2. Great lesson on creating consistent LLM instructions

- Explicitly stated in the first sentence of the message
- This is a lesson in prompt engineering

3. Prompt Quality = Output Quality

- Contradictory instructions → Unpredictable results
- Incomplete instructions → Missing functionality
- Redundant/verbose instructions → Inefficient execution



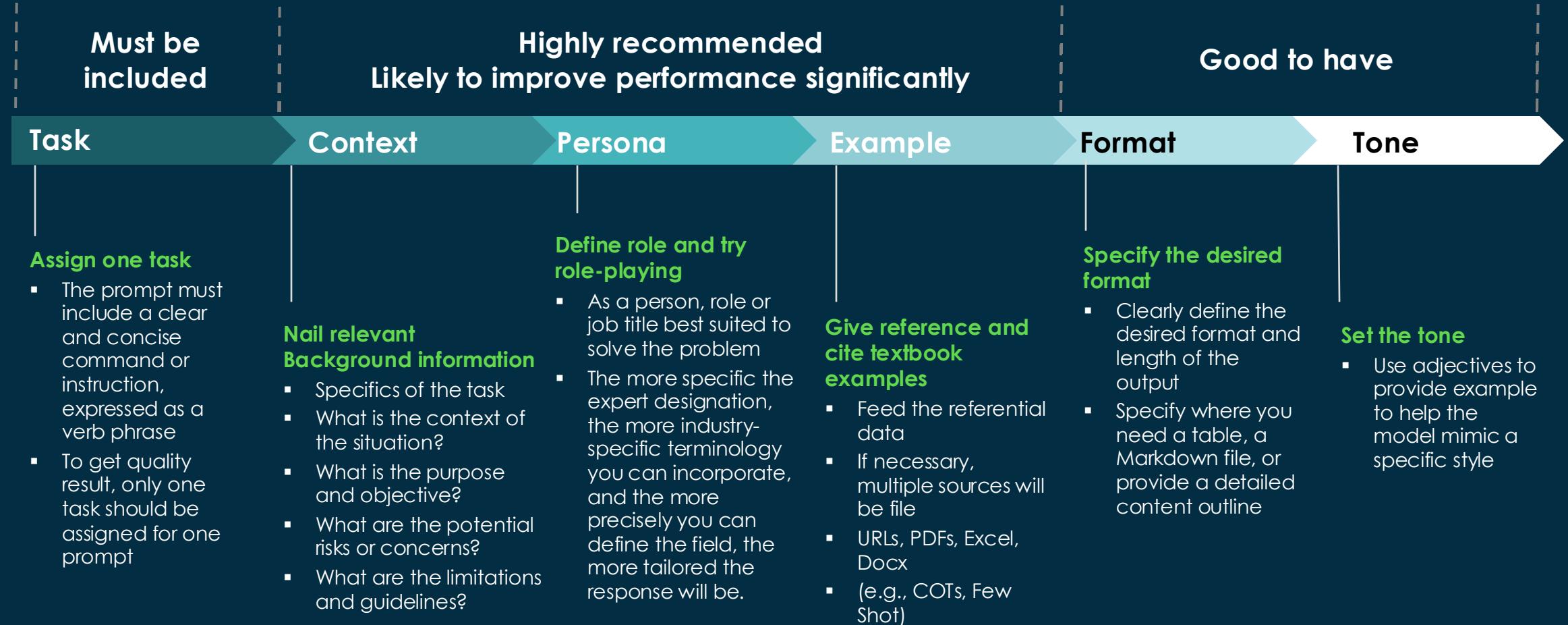
To make LLMs work properly, prompts must be systematically designed

→ **Good Prompts = Good LLM Performance = Fewer Defects**

How This Aligns with Prompt Engineering Principles

Problem	Prompt Engineering Principle
▪ Logic contradictions	▪ Clear and specific instructions
▪ Inconsistent terminology	▪ Consistent terminology
▪ No error handling	▪ Handle edge cases
▪ Unnecessary repetition	▪ Be concise
▪ No confirmation steps	▪ Define success criteria

Critical Components For Prompting



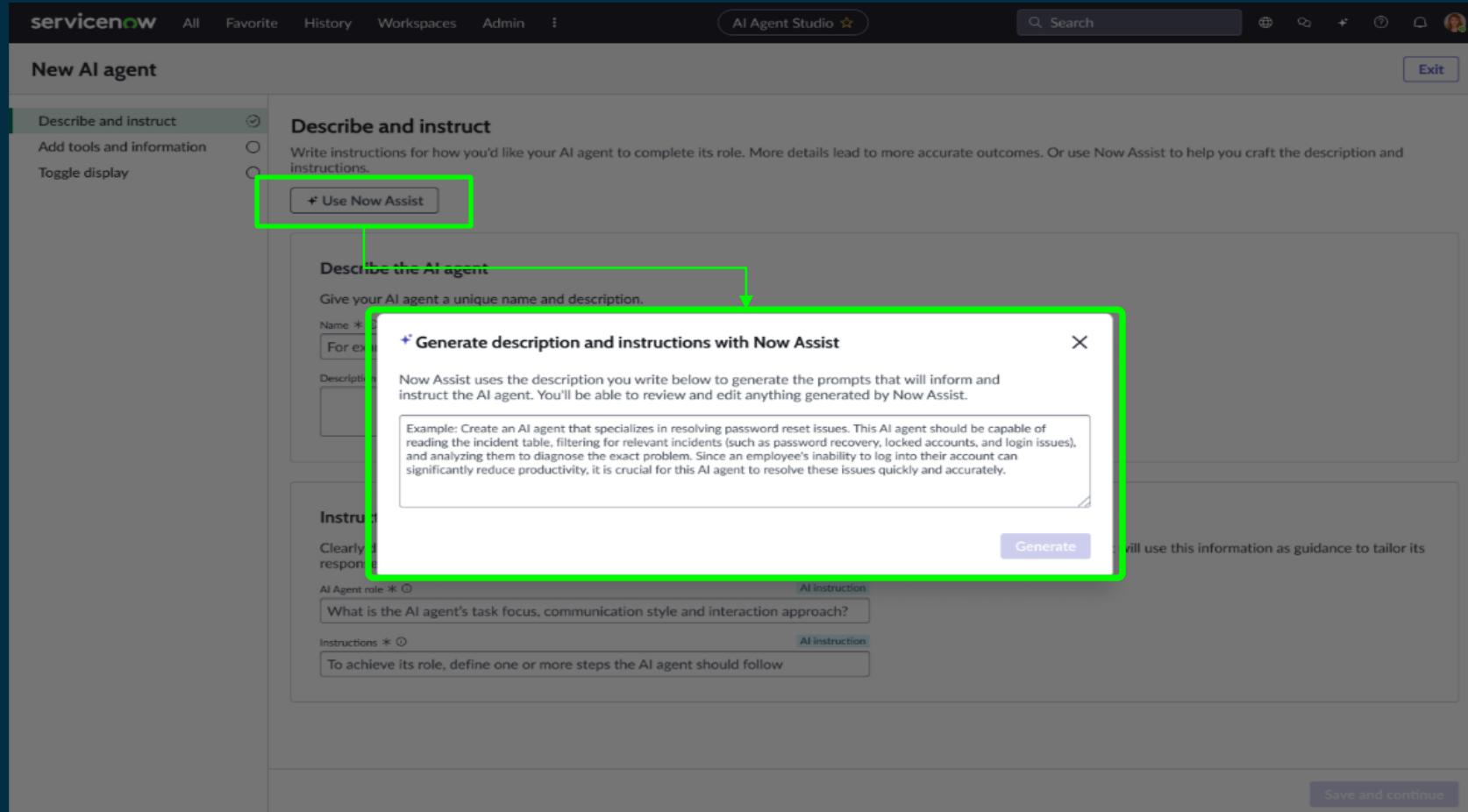
Prompt Engineering in Action: Practical Examples

Use Case: Automated VPN Issue Resolution

Must be included	Highly recommended Likely to improve performance significantly	Good to have			
Task	Context	Persona	Example	Format	Tone
Assign one task <ul style="list-style-type: none">Guide a user through unlocking their account and resetting their password while ensuring security compliance.	Background information <ul style="list-style-type: none">A user has been locked out after multiple failed login attempts. The system must:<ol style="list-style-type: none">Detect the issue (e.g., incorrect password attempts, expired credentials).Ask the user if they want automated troubleshooting.Generate a resolution plan (e.g., unlock the account, send a password reset link).Execute the resolution upon user confirmation.Escalate to security if additional verification is needed.If security-approved, apply the fix and notify the user's manager.	Define role and try role-playing <ul style="list-style-type: none">You are an ITSM automation system ensuring security compliance while providing efficient user support.		Specify the desired format <ol style="list-style-type: none">Acknowledge the issue and ask if the user wants an automated fix.Detect the exact cause (e.g., failed attempts, password expiration).Generate a reset/unlock plan and ask for user confirmation.Execute the plan if confirmed, or escalate to security for verification.If security-approved, apply the fix and notify the user's manager.	Set the tone <ul style="list-style-type: none">Secure, professional, and user-friendly
			Give reference and cite & examples <ul style="list-style-type: none">User's Ticket: "I forgot my password and now my account is locked. I need access ASAP."Refer to the Policy or KB article		

Too Complex? Now Assist Delivers a One-Click Solution

** From Yokohama



- **Now Assist** provides a one-click solution for rewriting prompts based on a user's minimal input.
- In AI Agent Studio, when a user creates a user case with a draft prompt(instructions), Now Assist automatically populates the relevant fields and suggests a refined prompt as placeholder text.