IDA

ChatGPT for Engineering and Scientific Tasks

A QUICK GUIDE

1 Applications of ChatGPT in Engineering and Scientific Workflows

Technical Writing and Documentation:
Create manuals, guides, specifications.

Project Management and Coordination:
Generate reports, facilitate collaboration.

Research and Innovation Support:
Summarize research, explain concepts.

Design and Development Assistance:
Describe design parameters, generate creative content.

Quality Assurance and Compliance:
Create legal texts, analyze feedback.

Education and Outreach Support:
Develop educational materials, engage with the community.

Accessibility and Inclusivity:
Convert documents to speech, create accessible content.

Basic Mathematical and Logical Assistance:
Perform simple calculations, support data analysis.

Client Interaction and Customer Support:
Craft client communication, provide support

2 Six Key Tricks for Effective Promting

Iterative Refinement: Start basic; refine based on responses.

Explicit Constraints: Guide response with specific instructions.

Role prompting: "You are now a professor in..."

Temperature Adjustment: Control response randomness and ask for a specific style.

Domain-Specific Language: Use specific terminology to tailor response.

Ethical Consideration: Test for biases; align with ethical guidelines.

3 Adaptable Prompt Examples for Engineering and Scientific Tasks

Adapt these prompts to suit specific tasks.

Technical Writing: "Generate a concise summary of the following technical document, highlighting key specifications, methodology, and findings. [Insert Technical Document Here]"

Project Management: "Provide a weekly progress report for Project X, including completed milestones, upcoming tasks, challenges faced, and proposed solutions. [Consider Confidentiality, Insert Project Details Here]"

Research Support: "Summarize the latest research findings in [Insert Field], focusing on breakthrough technologies, applications, and potential impacts on the industry. Work from [Insert Details/Articles/Input]"

Design Assistance: "Describe the optimal design parameters for a [Insert Specific Engineering Component Here], considering factors such as material, load capacity, efficiency, and environmental considerations."

Client Interaction: "Craft a professional email to update the client on the current status of [Insert Project Name Here], including progress highlights, timeline adjustments, and any support needed from their end."

4 Remember Form vs. Content: Using ChatGPT for what it is good at

Form (Structure & Style):
Ideal for creative writing, formatting, stylistic adaptation.

Content (Substance & Accuracy):
Use with caution for factual information, predictions, complex details.

Guidance:
Leverage ChatGPT for form-driven tasks; verify content-driven tasks for accuracy.

This cheat sheet is intended as inspiration, a user-friendly guide with indications on where to give input, for professionals in engineering and scientific fields to effectively leverage ChatGPT in their daily tasks and responsibilities.