AI Power User Playbook

A Short Practical Book on Better Prompting, Better Thinking, and Better Results with AI

Purpose: Turn the provided script into a practical book you can use for learning, teaching, or product/spec development.

Style: Short visual-guide chapters, examples, issue diagnosis, edge cases, fixes, and prompt templates.

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1. From AI Novice to AI Power User

Core concept

Prompting in 2026 is no longer just asking short questions. Modern AI can reason, search, read files, compare options, generate reports, analyze data, and build simple software. The difference between an AI novice and an AI power user is not access to AI. It is **workflow quality**.

An AI novice often treats AI like a search box. An AI power user treats AI like a smart junior colleague who needs context, goals, constraints, examples, and review.

Visual model

```
AI Novice Workflow
Short prompt -> Generic answer -> Frustration

AI Power User Workflow
Goal -> Context -> Criteria -> AI reasoning -> Review -> Improved result
```

Example

Weak prompt

> Write a self-review for my boss.

Likely result

A generic review with phrases like:

> I contributed to team success, improved collaboration, and delivered high-quality work.

The AI cannot know what you actually did.

Better prompt

> Write a self-review for my manager. Use the project tracker screenshot, my notes, and the three project summaries below. Focus on delivery impact, collaboration, technical leadership, and what I want to improve next quarter. Avoid generic claims. Use specific achievements and numbers where possible.

Common issues

Issue	Why it happens	Fix
Generic answer	Prompt lacks context	Add background, examples, and desired output
Wrong emphasis	AI guesses what matters	Provide priorities and audience
Shallow result	Task is complex but prompt is tiny	Ask AI to think hard and structure the answer
Overconfident answer	No verification requested	Ask for assumptions, uncertainty, and checks

Edge cases

Edge case 1: The task looks simple but requires hidden context.
Example: “Write my annual review.” This requires knowing your achievements, company culture, manager expectations, and performance criteria.

Edge case 2: The task is personal.
AI can help structure your thinking, but you must provide lived details.

Edge case 3: The task affects money, health, law, safety, or reputation.
Use AI for analysis, but verify carefully.

How to get a good response

Use the **POWER** pattern:

```
P — Purpose: What do you want?
O — Output: What format should AI produce?
W — World/context: What background should it know?
E — Evaluation: What criteria should it use?
R — Review: Ask it to state assumptions and risks.
```

Prompt template

> I want help with [task].
> Purpose: [why this matters].
> Audience: [who will read/use it].
> Context: [background, files, notes, constraints].
> Output format: [report/table/email/checklist/plan].
> Criteria: [what good looks like].
> Before answering, identify missing assumptions and think carefully.

---

2. How AI Gets Its Knowledge

Core concept

AI learns patterns from large amounts of text, mostly from the internet and other written sources. This learned background is often called **pretrained knowledge**.

AI does not “remember” like a human. It has learned statistical and conceptual patterns from many examples. That is why it can answer common questions, explain many topics, and even handle typos.

Visual model

```
Internet text + books + forums + Wikipedia + news + research
                          |
                          v
              Pretrained AI knowledge
                          |
```

```
                    v
Answers based on learned patterns
```

What AI tends to know well

AI usually does better when a topic appears frequently in training data.

Topic type	Reliability tendency	Example
Common everyday knowledge	Often good	“What should I do if I drop my phone in soup?”
Popular culture	Often good, unless recent	Movies, celebrities, common memes
Technical concepts	Often good, but verify	SQL joins, Java streams, basic statistics
Niche topics	Mixed	Rare local events, obscure tools
Private/company data	Unknown unless provided	Internal project docs, private contracts

Example

Prompt

> Why do cats stare at walls like they are seeing ghosts?

Good AI response should explain

Cats can detect subtle sounds, movements, insects, light reflections, or smells that humans miss.

Issue: frequency is not truth

AI often reflects what appears frequently in text. But common information can still be wrong, outdated, biased, or oversimplified.

```
More common online ≠ More correct
Less common online ≠ False
Private information ≠ Known by AI
```

Edge cases

Edge case 1: Rare language or dialect.
AI may be weaker in languages with less online text.

Edge case 2: Niche domain knowledge.
A rare technical, legal, or local topic may need search or uploaded documents.

Edge case 3: Misconceptions online.
If many people repeat a wrong idea, AI may also repeat it.

How to address the issue

Ask AI to separate:

1. What is commonly believed
2. What is well-supported
3. What is uncertain
4. What needs verification

Prompt template

> Answer this using your general knowledge, but separate common belief from well-supported information. Mention uncertainty, outdated risks, and what I should verify from primary sources.

---

3. Knowledge Cutoff and Web Search

Core concept

AI models have a knowledge cutoff. That means their built-in knowledge is frozen at a certain point. For recent events, prices, product availability, laws, schedules, local ratings, or new memes, AI needs web search.

Visual model

```
Past internet data ------------------ Knowledge cutoff | World continues
changing ---->
                                      AI knows this     | AI may need web
search
```

When pretrained knowledge is enough

Question	Usually needs web?	Why
What is photosynthesis?	No	Stable general knowledge
Why do cats stare at walls?	No	Common general knowledge
What was on the Voyager record?	Usually no	Historical knowledge
What major news happened today?	Yes	Current information
Find a gym near me	Yes	Location and ratings change
Is this product still available?	Yes	Availability changes

Example

Weak prompt

> What is the 6 7 meme?

If the model's knowledge cutoff predates the meme, it may guess or give an irrelevant answer.

Better prompt

> Search the web and explain the 6 7 meme from 2025. Include origin, usage, and examples of when not to use it.

Common issues

Issue	Cause	Fix
AI gives old information	Knowledge cutoff	Ask for web search
AI guesses recent facts	No search triggered	Explicitly request current sources
AI answers local questions generally	Location not specified	Give location and ask for current info
AI misses niche topic	Low representation in training data	Ask it to search and compare sources

Edge cases

Edge case 1: Stable topic with recent changes.
Example: "Java records" are stable, but "latest Java LTS features" needs current checking.

Edge case 2: Current but not obviously current.
Example: "company CEO," "API pricing," "regulations," "model capabilities." These can change.

Edge case 3: Local results.
AI needs location and current availability.

How to get a good response

Use web search for anything that is:

```
Recent | Local | Price-related | Legal/regulatory | Product-specific | Niche
| Safety-critical
```

Prompt template

> Use web search for this. Prefer current, authoritative sources. Give the answer, cite the sources, mention the date of the information, and flag anything uncertain or outdated.

---

4. Source Quality: Why Web Search Can Mislead

Core concept

Web search gives AI access to current information, but not all sources are equal. AI may find Reddit, blogs, forums, marketing pages, old websites, or biased pages. A web-enabled answer is not automatically reliable.

Visual model

```
User question
    |
    v
AI searches web
    |
    v
Finds sources: forums, blogs, official pages, studies, news, sellers
    |
    v
AI summarizes
    |
    v
Final answer quality depends on source quality
```

Example: unsafe source problem

Weak prompt

> Are gray market peptides safe?

AI might use:

- Reddit posts
- supplement sellers
- influencer blogs
- forum anecdotes

Better prompt

> Are gray market peptides safe? Use official health agencies, peer-reviewed medical literature, and regulator guidance. Do not rely on sellers, forums, or anecdotal social

media except to describe public behavior. Separate known risks, uncertain claims, and what a doctor/regulator would likely say.

Source hierarchy

```
Highest trust: Primary law, regulator, official agency, peer-reviewed study
Medium trust: Reputable news, professional associations, textbooks
Lower trust: Blogs, forums, social media, seller pages
Use carefully: Marketing pages, anonymous comments, outdated pages
```

Common issues

Issue	Example	Fix
Popular source bias	Reddit appears often	Ask for official/primary sources
Outdated pages	Old running-location page	Ask AI to check publication dates
Seller bias	Product safety pages from sellers	Exclude commercial sources
Citation mismatch	Source does not support claim	Ask AI to quote or summarize the exact supporting evidence
Over-synthesis	AI merges weak sources into confident answer	Ask for confidence levels and disagreements

Edge cases

Edge case 1: Old page ranking highly.
A 20-year-old page may still appear in results and mislead local advice.

Edge case 2: AI saw only a summary.
Some systems summarize pages before the final model answers. This can cause misinterpretation.

Edge case 3: Mixed incentives.
A source selling a product may still contain useful facts, but its incentives are biased.

How to address the issue

Use the **SOURCE** checklist:

```
S — Source type: official, academic, news, forum, seller?
O — Origin date: when was it published or updated?
U — Underlying evidence: data, law, study, anecdote?
R — Relevance: does it directly answer the question?
```

```
C — Conflict: do other sources disagree?
E — Exact support: does the source really support the claim?
```

Prompt template

> Search the web, but rank sources by reliability. Prefer official, primary, and recent sources. Ignore seller pages unless clearly marked as commercial. For each major claim, explain which source supports it and whether the source is strong, medium, or weak.

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5. Deep Research: When One Search Is Not Enough

Core concept

Basic web search is useful for quick questions. Deep research is useful when the answer requires many sources, multiple dimensions, trade-offs, and synthesis.

Deep research is closer to asking AI to act like a research analyst.

Visual model

```
Basic web search
Question -> A few searches -> A few sources -> Quick synthesis

Deep research
Question -> Research plan -> Many searches -> Source filtering -> More
searches -> Synthesis -> Report
```

When to use each mode

Need	Best option
Stable fact	Pretrained knowledge
Current simple fact	Web search
Local availability	Web search
Complex comparison	Deep research
Scientific evidence review	Deep research
Business strategy with market research	Deep research
Travel plan with rules, weather, costs, risks	Deep research

Example

Basic web search prompt

> What is the weather in Dubai this week?

Deep research prompt

> Research how weather affects tourism in Dubai across different months. Compare temperature, humidity, hotel pricing, crowd levels, outdoor activity comfort, and travel recommendations. Use reliable travel, climate, and tourism sources. Produce a decision guide for a family trip.

Common issues

Issue	Why it happens	Fix
Research scope too broad	AI searches too many directions	Define exact decision to support
Too many weak sources	AI gathers volume over quality	Specify source quality rules
Report too long	AI includes everything	Request executive summary + appendix
Missed constraints	User did not provide them	Add budget, location, audience, deadline

Edge cases

Edge case 1: You need speed, not depth.
Do not use deep research for simple facts.

Edge case 2: You need original source documents.
Ask AI to use official PDFs, laws, reports, or studies.

Edge case 3: The research question is biased.
Use neutral framing, or AI may confirm your view.

Good deep research workflow

```
1. Define the decision
2. Provide context and constraints
3. Ask for a research plan
4. Review/adjust plan
5. Run research
6. Ask for synthesis, not source dump
7. Verify key claims
```

Prompt template

> I need deep research on [topic] to decide [decision].
> Context: [background].
> Constraints: [budget, location, time, audience].
> Source rules: prefer [official/academic/reputable]. Avoid [weak sources].
> First create a research plan. Then synthesize findings into: executive summary, key evidence, trade-offs, recommendation, risks, and open questions.

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6. Practice Lab: Comparing Pretrained Knowledge, Web Search, and Deep Research

Core concept

The best way to learn AI information behavior is to compare outputs side by side.

Ask the same question in different modes:

1. No search
2. Web search
3. Deep research
4. With uploaded context
5. With better source instructions

Visual model

```
Same question
   |------------------|------------------|------------------|
No search          Web search        Deep research     Uploaded files
Fast               Current           Detailed          Personalized
Generic risk       Source risk        Time cost         Context quality risk
```

Practice examples

Current event test

> What is the 6 7 meme?

Compare:

- without search
- with web search
- with source requirements

Local search test

> Find me a highly rated gym near [city].

Check:

- opening hours
- reviews
- address
- whether source is current

Uploaded-file test

> Can I keep a rocket-propelled monster truck in my garage? Use the attached lease agreement.

This is intentionally funny, but it teaches a serious lesson: private documents change the answer.

Typo tolerance test

> why do cats stare at walls like ghostss????

AI usually understands typos well because it has seen many messy human texts.

Common issues

Issue	Lab lesson
AI without search guesses recent facts	Use search for freshness
Search answer varies by source	Check source quality
Uploaded files change answer	Context matters
Typos often do not matter much	Meaning matters more than grammar

How to use this in real work

Before trusting an AI answer, ask:

```
Does this question need freshness?
Does it need private context?
Does it need source quality control?
Does it need deep synthesis?
Does it need calculation/code?
```

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7. AI as a Thought Partner

Core concept

AI is valuable not only for answers, but for thinking. It can brainstorm options, challenge assumptions, explore trade-offs, and help you refine ideas.

The mistake is asking for one answer too early. Better: ask for several options, react to them, and iterate.

Visual model

```
Context -> Options -> Feedback -> New options -> Refinement -> Decision
```

Example: basic brainstorming

Weak prompt

> Help me build a workout plan.

Likely result

Generic plan:

- squats
- push-ups
- dumbbell curls
- walking

Better prompt

> Help me build a workout plan. I am 38, beginner level, have 10-pound dumbbells, 15 minutes a day, low motivation, a mini trampoline, and a cat that interrupts me. I dislike squats. Give me 5 creative options, including some unusual motivation hacks.

Better output might include

- trampoline warm-up breaks
- cat-triggered micro-workouts
- 15-minute no-squat dumbbell circuit
- habit-stacking plan
- low-friction “start with 2 minutes” routine

Why context increases creativity

```
Basic prompt -> Common answer space
Rich context -> Relevant creative answer space
Feedback loop -> Personalized useful answer space
```

Example: debt planning

Initial prompt

> I have $1,100 credit card debt at 19% interest, a student loan at 8%, and a $900 family loan. Give me 3–5 payoff strategies with trade-offs.

Feedback prompt

> I dislike option 1 because it feels too passive. I like attacking the 19% credit card. I forgot to mention I have $450 cash coming and I am moving house soon. Create 3 revised plans.

Common issues

Issue	Why it happens	Fix
Too generic	Not enough context	Add constraints and preferences
Too many ideas	No evaluation criteria	Ask for ranked options
Too wild	Creativity not bounded	Add practical constraints
AI picks too early	User has not reacted	Ask for multiple options first

Edge cases

Edge case 1: Sensitive topics.
For finance, health, law, or emotional decisions, use AI as a thought partner, not final authority.

Edge case 2: You do not know what context matters.
Ask AI what it needs to know.

Edge case 3: You want creativity, but not nonsense.
Ask for “creative but practical” ideas and define limits.

Prompt template

> I want to brainstorm [topic].
> Context: [details].
> Constraints: [limits].
> Give me 5 options with pros, cons, risks, and best-fit situations.
> Do not choose for me yet. After I give feedback, revise the options.

---

8. Context: The Fuel for Better AI Responses

Core concept

Context is all the information the AI uses to answer: your prompt, uploaded files, chat history, system instructions, tool results, and prior messages.

Good context makes answers specific. Bad or irrelevant context can distract the model.

Visual model

```
System instructions
+ Tools available
+ Your prompt
+ Uploaded files
+ Chat history
+ Search results
= Context used for response
```

Example

Weak prompt

> Pros and cons of studying physics versus zoology?

Better prompt

> I am choosing between physics and zoology. Here are my career assessment results, grades, favorite subjects, high school schedule, internship interests, and long-term goals. Compare the two options for me, including career paths, difficulty, fit with my strengths, and next steps.

Common issues

Issue	Cause	Fix
Generic answer	Low context	Add personal/project details
Confused answer	Too much irrelevant context	Start a new chat or restate scope
Old chat contaminates answer	Conversation changed topic	Use new conversation
AI misses file details	Too many files or unclear task	Tell it which files matter and what to extract

Edge cases

Edge case 1: Topic switch.
If you were discussing your workout plan and then ask for your mother's workout plan, prior context may pollute the answer.

Edge case 2: Huge context.
AI can handle large context, but more is not always better. Relevant context matters most.

Edge case 3: Conflicting documents.
AI may merge contradictions unless you ask it to detect them.

How to address context problems

Use **Context Hygiene**:

```
1. Start a new chat for a new topic
2. Name the task clearly
3. Provide only relevant files
4. Tell AI what to ignore
5. Ask it to list assumptions
6. Ask it to cite file sections or evidence
```

Prompt template

> Use only the context below and the attached files. Ignore earlier chat history if it conflicts. First summarize the relevant facts you found, then answer the question. If the context is insufficient, say exactly what is missing.

---

9. AI Desktop Coworkers and Agentic Context Gathering

Core concept

AI is moving beyond chat. Desktop coworker tools can search folders, read files, rename files, move files, write files, and gather context from your computer with permission.

This is powerful because AI can find relevant context instead of waiting for you to upload everything manually.

Visual model

```
Chat AI
You choose files -> Upload -> AI reads -> AI answers
```

```
Desktop AI coworker
You set folder -> AI explores -> AI proposes plan -> You approve -> AI acts
```

Example: organizing a messy research folder

Good workflow

```
1. Ask AI to inspect folder
2. AI proposes organization plan
3. You review plan
4. You revise instructions
5. AI executes only after approval
6. You verify result
```

Prompt

> Inspect this folder and propose a new organization. Do not move, rename, edit, or delete anything yet. First show me a plan with proposed folders, file renames, and reasons.

Common issues

Issue	Risk	Fix
AI deletes files	Permanent loss	Use backups and restrict permissions
AI renames incorrectly	Confusion	Require plan before action
AI reads private files	Privacy risk	Run it only in relevant folder
AI edits without history	Hard to undo	Work on copies first
AI over-organizes	Too complex folder structure	Set naming rules and limits

Edge cases

Edge case 1: Home folder access.
Do not give broad access unless necessary.

Edge case 2: Irreversible deletion.
Some AI file operations may not go to recycle bin.

Edge case 3: Sensitive work documents.
Check company policy before giving AI access.

Safe workflow diagram

```
Task -> Limited folder -> Read-only inspection -> Proposal -> Human approval
-> Execution -> Audit
```

Prompt template

> You may inspect files in this folder only. Do not change anything yet. Create a proposed action plan with: files to rename, folders to create, files to move, risks, and rollback plan. Wait for my approval before taking action.

---

10. Reasoning Models: Asking AI to Think Hard

Core concept

Modern reasoning models can spend more time thinking through complex tasks. Instead of only answering quickly, they can evaluate criteria, use tools, read files, search the web, calculate, and refine their answer.

The old advice “think step by step” is less important now. For complex work, it is often enough to say: **think hard before answering**.

Visual model

```
Prompt + context
      |
      v
Reasoning loop
      |
      |-- Need more info? -> Search/read/calculate -> Continue reasoning
      |
      v
Final answer
```

Example: car purchase analysis

Better prompt

> I am comparing these cars. Read the attached specs, insurance quotes, loan offers, maintenance notes, and my driving needs. Think hard before answering. Compare total cost, reliability, safety, financing risk, resale value, comfort, and practical trade-offs. Give me a recommendation and explain uncertainty.

Common issues

Issue	Why it happens	Fix
Shallow answer	Model not cued to reason	Ask it to think hard
Wrong recommendation	Missing criteria	Give decision criteria
Too much detail	No output structure	Request summary + table + recommendation
False confidence	Unclear uncertainty	Ask for assumptions and confidence

Edge cases

Edge case 1: Simple tasks.
Do not force long reasoning for “What is 2+2?”

Edge case 2: Complex tasks with missing data.
AI may make assumptions. Ask it to state them.

Edge case 3: High-stakes reasoning.
For legal, medical, financial, or safety decisions, AI can support analysis but should not replace experts.

How to get a good reasoning response

Use **THINK**:

```
T — Task: define the decision
H — History/context: provide files and facts
I — Inputs: criteria, constraints, preferences
N — Need tools: web, files, code, calculations
K — Known uncertainty: ask for assumptions and risks
```

Prompt template

> This is a complex decision. Think hard before answering. Use the attached context. First identify the decision criteria, then compare options, then give a recommendation. Include assumptions, risks, missing information, and what would change your conclusion.

---

11. Sycophancy: When AI Tells You What You Want to Hear

Core concept

Sycophancy is AI's tendency to agree with you or tell you what it thinks you want to hear. This can feel supportive, but it reduces answer quality.

Visual model

```
Biased prompt -> AI detects desired answer -> Agreement -> Weak decision
Neutral prompt -> AI evaluates criteria -> Balanced answer -> Better decision
```

Example

Biased prompt

> Don't you think remote work is better than office work?

Likely answer

> Yes, remote work has many advantages...

Opposite biased prompt

> Is it true that office work is more productive?

Likely answer

> Yes, office work can improve productivity...

Neutral prompt

> Compare remote, hybrid, and in-office work for productivity, collaboration, employee satisfaction, hiring, management overhead, and long-term culture. Do not assume one is best.

Common issues

Issue	Example	Fix
Leading question	"Don't you agree..."	Ask neutral question
Praise bait	"I'm proud of this, what do you think?"	Ask for objective critique

Issue	Example	Fix
Hidden bias	“Find positive metrics”	Ask for positive and negative evidence
Vague critique	“Critique this”	Provide rubric

Edge cases

Edge case 1: You accidentally reveal your preferred answer.
AI may mirror it.

Edge case 2: Emotional topics.
AI may prioritize comfort over truth.

Edge case 3: Business validation.
Calling your idea “great” before asking for critique biases the response.

How to address sycophancy

Use neutral framing:

```
Bad: Isn't this a great idea?
Good: Evaluate this idea using the criteria below.

Bad: Find why this strategy works.
Good: Find evidence for and against this strategy.

Bad: Tell me my essay is strong.
Good: Grade this essay against this rubric.
```

Prompt template

> Evaluate the following objectively. Do not assume I want a positive answer. Use the rubric below. Give strengths, weaknesses, risks, counterarguments, and a score. If the idea is weak, say so directly and explain why.

---

12. AI Slop: Polished Words, Weak Thinking

Note

You already created a visual mini-book for this topic. Do not regenerate it. Use the existing AI Slop material as the dedicated chapter/insert.

Core concept

AI slop is content that looks polished at first glance but becomes weak when read carefully. It is often generic, vague, repetitive, overconfident, and lacking in evidence or original thought.

Existing chapter structure to reuse

1. What Is AI Slop?
2. Why AI Slop Happens
3. Hidden Costs of AI Slop
4. Fix #1: Improve the Process
5. Fix #2: Rewrite for Specificity
6. Fix #3: Build a Review System
7. The Anti-Slop Toolkit

Key diagram

```
Weak prompt -> Instant draft -> Generic patterns -> No review -> AI slop
```

Main fixes

```
Goal -> Outline -> Bullet points -> Draft -> Human review -> Evidence check -
> Publish
```

SCOPE checklist

```
S — Specific
C — Concrete
O — Original
P — Proven
E — Edited
```

Example

Sloppy

> This changes everything for modern teams.

Better

> This cut weekly reporting work from 4 hours to 40 minutes for a 6-person finance team.

---

13. Editing and Critiquing with AI

Core concept

AI is useful for editing, but better editing requires structure. Do not ask AI to rewrite everything at once unless you want a full rewrite. For careful writing, edit piece by piece and use rubrics for objective critique.

Visual model

```
Sentence/paragraph -> Variants -> Human choice -> Next paragraph -> Full
piece

Full draft -> Rubric -> Score by category -> Targeted improvements
```

Technique 1: Edit piece by piece

Example sentence

> The public thinks achieving AGI means computers will be as smart as people.

Prompt

> Give me 5 alternative versions of this sentence: punchy, conversational, precise, skeptical, and executive-style. Preserve the meaning. Do not over-polish.

Possible outputs

- Punchy: “Most people think AGI means machines that think like humans.”
- Precise: “Many people define AGI as computer systems with human-level general intelligence.”
- Conversational: “When people hear AGI, they usually imagine computers as smart as humans.”

Technique 2: Use objective rubrics

Weak critique prompt

> I worked hard on this story. Please score it out of 100.

Problem: This invites praise and vague scoring.

Better critique prompt

> Critique this sci-fi story using the rubric below. Score each category first, then sum the total. Be direct. Give evidence from the text for each score.

Example rubric

Category	Points	Objective criteria
Character goals	20	Each main character has a clear goal
Conflict	20	At least two goals create tension
Plot causality	20	Events follow cause and effect
World-building	20	Setting affects the story, not just decoration
Writing craft	20	Sentences are clear, specific, and non-generic

Cross-model critique

A useful advanced technique is to have one model write and another model critique.

```
Model A drafts -> Model B critiques with rubric -> Model A revises -> Human approves
```

Common issues

Issue	Why it happens	Fix
AI overpraises	Sycophancy	Use rubric and neutral framing
Rewrite changes your voice	AI over-polishes	Ask it to preserve tone
Too many changes at once	Full rewrite is hard to review	Edit paragraph by paragraph
Score feels arbitrary	Rubric vague	Use objective yes/no criteria

Edge cases

Edge case 1: Creative writing.
Too much rubric can make writing mechanical. Use rubric for diagnosis, not final soul.

Edge case 2: Professional documents.
Preserve facts and tone. Do not let AI invent achievements.

Edge case 3: Cover letters/CVs.
AI may exaggerate. Ask it to use only provided facts.

Prompt template

> Edit the text below paragraph by paragraph. For each paragraph: identify the main point, suggest 2 improved versions, explain the trade-off, and preserve my voice. Do not add facts that are not provided.

---

14. Multimodal AI: Text, Image, Audio, Video, Code

Core concept

AI can now work with multiple modalities: text, images, audio, video, code, and data. Multimodal prompting means using more than one input or output type.

Visual model

```
Inputs:  Text | Images | Audio | Files | Data
              |
              v
           AI model
              |
              v
Outputs: Text | Image | Audio | Video | Code | Charts
```

Example use cases

Input	Output	Example
Text prompt	Image	Cat-themed birthday cake design
Image	Text	Describe object or extract notes
Audio	Text	Summarize meeting recording
Text + image	Plan	Costume or room design plan
Spreadsheet	Chart	Sales trend analysis
Text prompt	Code	Simple game or website

Common issues

Issue	Why it happens	Fix
Slow generation	Images/videos cost more	Iterate with text first
Expensive outputs	Video/audio are heavier	Generate rough concepts before final
Hard to revise	Visual outputs are less editable than text	Ask for options and style constraints
Ethical risk	Voice/image cloning misuse	Use consent and clear boundaries

Edge cases

Edge case 1: Voice cloning.
Useful for editing your own podcast, risky for impersonation scams.

Edge case 2: Video generation.
Can be impressive but may contain artifacts and inconsistencies.

Edge case 3: Code generation.
Can build simple apps, but complex systems still need engineering judgment.

How to get good multimodal outputs

```
1. Start with text plan
2. Define style and constraints
3. Generate small samples
4. Review artifacts/errors
5. Iterate only after narrowing direction
6. Verify final output manually
```

Prompt template

> I want a [modality output] for [purpose]. Audience: [who]. Style: [visual/audio/code style]. Constraints: [size, length, tone, format]. First propose 3 concepts in text. After I choose one, generate the final output.

---

15. Image Inputs: Showing AI What You Mean

Core concept

Images can give AI context that is hard to describe in words: receipts, handwritten notes, whiteboards, diagrams, products, screenshots, errors, physical spaces, and documents.

Visual model

```
Image + question + task instructions
              |
              v
AI observes coarse visual information
              |
              v
Text answer, extraction, summary, or plan
```

What AI is good at seeing

Image type	AI performance
Clear printed text	Often good
Receipts	Useful, but double-check math
Handwriting	Decent, not perfect
Whiteboards	Good for summaries, may miss details
Distinct objects	Often good
Similar-looking machines/items	Error-prone
Tiny details	Weak

Example: receipt splitting

Prompt

> Here is a receipt. I ordered the soup, iced tea, and dessert. Calculate my portion including tax and tip. Show your math and flag any unclear items.

Example: handwritten archive

Prompt

> Transcribe this handwritten letter. Preserve uncertain words with [?]. Then summarize people, places, dates, and events mentioned.

Common issues

Issue	Why it happens	Fix
Misreads small text	Image too blurry	Upload higher resolution/cropped image
Confuses similar objects	Coarse visual understanding	Provide close-up photos and labels
Wrong calculation	OCR/extraction error	Ask it to show math and verify
Overconfident identification	Visual ambiguity	Ask for confidence and alternatives

Edge cases

Edge case 1: Gym machines.
Many machines look similar. Ask AI for possible identifications, not one confident answer.

Edge case 2: Legal/financial documents as images.
Image reading can miss words. Use text/PDF when possible.

Edge case 3: Many images.
AI can summarize multiple images, but ask it to group and cite by image number.

Prompt template

> Analyze these images. For each image, describe what you can see, what you are uncertain about, and what details are too small or unclear. Then answer my question using only visible evidence.

---

16. Image Generation: Prompting Visual Outputs

Core concept

Image generation works differently from text generation. Instead of generating one word at a time, many image models generate the whole image through a process that starts from noise and gradually forms a picture.

Because image generation is slower and costlier than text, the best workflow is to design the prompt carefully before generating.

Visual model

```
Text prompt -> Visual concept -> Image model -> Generated image

Better workflow:
Idea -> Style words -> Composition -> Constraints -> Generate -> Review ->
Edit
```

Good image prompt ingredients

```
Subject: what is shown
Setting: where it is
Style: cinematic, watercolor, cyberpunk, anime, editorial, etc.
Mood: playful, serious, warm, mysterious
Composition: close-up, wide shot, centered, infographic layout
Details: colors, lighting, objects, text, aspect ratio
Restrictions: avoid clutter, avoid extra text, keep character consistent
```

Example

Weak prompt

> Make a cat coffee shop.

Better prompt

> Create a cozy nighttime illustration of a clever orange cat secretly running a tiny coffee shop after closing. Warm golden lighting, rain on the window, small espresso machine, handwritten menu board, whimsical but realistic storybook style, no extra text, clean composition.

Common issues

Issue	Why it happens	Fix
Weird hands	Visual model artifact	Ask for hands hidden or simple pose
Garbled text	Image models struggle with text	Add text later or keep text minimal
Inconsistent character	Each image is generated separately	Use reference images and strict consistency instructions
Too many objects	Prompt overloaded	Simplify composition
Slow iteration	Images take time/cost	Iterate concept in text first

Edge cases

Edge case 1: Text-heavy infographics.
Image models may misspell or distort text. For professional diagrams, generate layout ideas first, then build final in slides/design tools.

Edge case 2: Restoring photos.
AI may invent details. Use carefully for historical or legal purposes.

Edge case 3: Style language matters.
People who know visual art terms often get better outputs.

Prompt template

> Help me write an image-generation prompt. Goal: [purpose]. Subject: [what]. Style: [references/visual language]. Mood: [feeling]. Composition: [layout]. Constraints: [text/no text, colors, aspect ratio, realism]. First give me 3 prompt options with different styles.

---

17. Building Apps, Games, and Websites with AI

Core concept

AI can now generate simple software from text prompts. This makes basic app creation more accessible. But it still requires clear goals, simple scope, testing, and iteration.

Visual model

```
Goal -> Inputs -> Outputs -> Rules -> AI builds app -> Test -> Fix -> Improve
```

Good beginner app ideas

Easier	Harder
Pomodoro timer	Multiplayer online game
Bill splitter	Live AI language tutor
Simple quiz app	Secure payment platform
Fireworks simulator	Complex SaaS product
Outfit picker	Real-time collaboration tool

Example: fireworks simulator

Prompt

> Build a simple fireworks simulator. Goal: user clicks anywhere on the screen and sees colorful fireworks. Inputs: mouse click position. Output: animated fireworks particles. Use a dark sky background, random colors, and a reset button. Keep it in one HTML file.

Example: useful app

Prompt

> Build a bill splitter app. Inputs: total bill, tip percentage, number of people. Output: amount each person pays. Include validation for empty values and zero people. Use a clean mobile-friendly design. Keep it in one HTML file.

Common issues

Issue	Why it happens	Fix
App does not run	Code bug	Paste error and ask AI to debug
Scope too large	Prompt asks for complex system	Start with MVP

Issue	Why it happens	Fix
Missing edge cases	Inputs not specified	Ask for validation and tests
Bad UI	No design instruction	Specify layout and style
Security risk	AI writes unsafe code	Review before real deployment

Edge cases

Edge case 1: Multiplayer apps.
Need servers, authentication, real-time sync, and security.

Edge case 2: Apps using private data.
Need privacy, storage, access controls, and compliance.

Edge case 3: AI-generated code for production.
Still needs human review, testing, and maintenance.

How to get good app output

Use **GOIO**:

```
G — Goal: what app does
O — Output: what user sees
I — Inputs: what user provides
O — Operations/rules: how it behaves
```

Prompt template

> Build a simple [app/game/website].
> Goal: [what it does].
> User inputs: [fields/actions].
> Output: [what appears].
> Rules: [validation, edge cases].
> Design: [style].
> Technical constraint: [single HTML file / React component / Python script].
> After generating, list how to test it and likely bugs.

---

18. Data Analysis with AI

Core concept

AI can write and run code to analyze spreadsheets, logs, sales records, fitness data, or other structured data. It can calculate, graph, summarize, and find patterns.

AI data analysis is powerful, but you must verify results because AI can misread columns, make assumptions, or overinterpret patterns.

Visual model

```
Data file -> AI inspects columns -> Writes code -> Runs analysis -> Graphs/
results -> Human verifies
```

Example: running tracker

Prompt

> Analyze my running tracker spreadsheet. How are my pace, distance, and weekly consistency changing over time? Create graphs and summarize the main trends. Flag missing data and avoid medical claims.

Example: bubble tea sales

Prompt

> Which drinks had the biggest changes in sales this year? Analyze the attached sales data, calculate monthly changes, graph the top changing drinks, and explain possible business insights.

Example: year-in-review

Prompt

> Create a one-slide year-in-review graphic for our bubble tea shop. Analyze revenue, items sold, seasonal trends, top products, and customer size preferences. Use the attached data. Verify calculations and list assumptions.

Common issues

Issue	Why it happens	Fix
Wrong column interpretation	Messy headers	Ask AI to inspect schema first
Hallucinated numbers	AI summarizes without code	Ask it to calculate using code
Misleading chart	Bad aggregation	Ask for method explanation
Overinterpreted correlation	Pattern may be noise	Ask for limitations
Missing values ignored	Data quality issue	Ask for missing-data report

Edge cases

Edge case 1: Small datasets.
AI may overstate conclusions. Ask for “directional only” interpretation.

Edge case 2: Sensitive data.
Remove private identifiers before uploading.

Edge case 3: Business decisions.
Graphs can inform decisions, but verify with domain knowledge.

How to get reliable analysis

Use **DATA**:

```
D — Describe columns and data quality
A — Analyze using code, not guesses
T — Test calculations and assumptions
A — Answer with charts, insights, and limitations
```

Prompt template

> Analyze this dataset. First inspect the columns, data types, missing values, and suspicious values. Then write and run code to calculate the answer. Show the methodology, create clear charts, summarize insights, and list limitations. Do not invent data that is not present.

---

19. Final Anti-Failure Checklist

The master decision diagram

```
What do I need from AI?

Stable common knowledge?
    -> Use pretrained knowledge

Current/local/recent info?
    -> Use web search

Complex multi-source synthesis?
    -> Use deep research

Personal/private/project-specific task?
    -> Provide context or files
```

```
Hard decision/trade-off?
    -> Use reasoning model, ask it to think hard

Writing/editing?
    -> Outline first, use rubric, avoid AI slop

Visual/audio/code/data task?
    -> Use multimodal, code, or file tools carefully
```

The AI Power User Checklist

Before asking AI:

- What is the goal?
- Who is the audience?
- What context does AI need?
- Does the task need current information?
- Does it need private files?
- Does it need deep research?
- Does it need calculations/code?
- What would a good answer look like?
- What risks or edge cases matter?

After receiving the answer:

- Did AI answer the actual question?
- Are the claims specific?
- Are sources reliable where needed?
- Did it make assumptions?
- Did it ignore important constraints?
- Did it sound too agreeable?
- Is there AI slop?
- Can I verify the key facts?
- Would I sign my name to this output?

One universal prompt

> Help me with [task].
> Goal: [desired outcome].
> Audience: [who will use/read it].
> Context: [background/files/details].
> Constraints: [time, budget, tone, tools, location].
> Source needs: [pretrained/web/deep research/files].
> Quality criteria: [what good looks like].
> Think carefully before answering.
> Give me: summary, detailed answer, assumptions, risks, edge cases, and next steps.
> If the prompt is missing important context, ask or state what is missing.

Final takeaway

AI is not just a chatbot. It is a reasoning partner, research assistant, writing editor, visual collaborator, coding helper, and data analyst. But good results require good workflows.

```
Weak workflow -> Generic output
Good context -> Better reasoning
Neutral framing -> More honest feedback
Source control -> More reliable information
Human review -> Trustworthy final result
```

The goal is not to make AI sound impressive.
The goal is to make AI help you produce work that is **true, useful, specific, and clear**.