Prompt Engineering Masterclass

Full-Day Interactive Workshop

Master the art and science of communicating with AI

Today's Agenda

Morning (9:00 - 12:00)

9:00	Module 1: Introduction to Prompt Engineering
9:30	Module 2: The CRAFT Framework Deep Dive
10:15	Break
10:30	Module 3: Advanced Prompt Techniques
11:15	Module 4: Context Engineering

Afternoon (1:00 - 4:00)

1:00	Module 5: Prompt Chains & Workflows
1:45	Module 6: Testing & Refining Prompts
2:30	Break
2:45	Module 7: Real-World Applications
3:40	Wrap-Up & Next Steps

Format: Each module includes presentation content, live examples, and hands-on exercises. Two interactive labs use Jupyter notebooks.

What Is Prompt Engineering?

The discipline of designing, structuring, and refining inputs to AI language models to produce accurate, relevant, and useful outputs.

Design

Crafting inputs that clearly communicate your intent, context, and expectations to the model

Structure

Organizing information so the AI can process it efficiently and prioritize what matters most

Refine

Iteratively improving prompts based on output quality, testing, and systematic evaluation

Key Insight: The quality of your AI output is directly proportional to the quality of your input. A well-crafted prompt transforms generic responses into expert-level deliverables.

How LLMs Process Your Prompts

Tokenization
Text split into tokens (words & subwords)

→

Attention
Model weighs token relationships

→

Pattern Matching
Identifies relevant training patterns

→

Generation
Tokens produced one at a time

Why This Matters for Prompting

- **Token order matters** — information placed early in the prompt receives more attention
- **Context is finite** — every model has a maximum context window (token limit)
- **Patterns drive output** — the model generates what "looks like" a continuation of your prompt

Key LLM Parameters

Parameter	What It Controls	Range	When to Adjust
Temperature	Creativity vs consistency	0.0 – 2.0	Low (0-0.3) for facts; High (0.7-1.2) for creative work
Max Tokens	Response length limit	1 – 128K+	Set to expected output length + buffer
Top-p	Vocabulary diversity	0.0 – 1.0	Lower for precise tasks; higher for varied language
System Message	Persistent behavioral instructions	Text	Always — sets persona, rules, and constraints
Stop Sequences	When to stop generating	Text tokens	For structured output or multi-turn workflows

Common Mistake: Setting temperature to 0 for everything. Factual tasks need low temperature, but creative brainstorming and drafting benefit from moderate values (0.7–0.9).

The Prompt Engineering Spectrum

1

Ad Hoc — Casual, unstructured

```
"Write me something about AI."
```

2

Structured — Some detail and direction

```
"Write a 500-word article about AI in healthcare for a business audience. Include statistics."
```

3

Professional — Full CRAFT framework applied

```
[Context] Our hospital network serves 2M patients across 12 facilities. We're evaluating AI diagnostic tools for radiology. [Role] Act as a healthcare technology analyst with 10 years of experience in clinical AI adoption. [Action] Write a strategic briefing on AI-assisted radiology, covering current capabilities, integration challenges, and ROI expectations. [Format] Executive summary (3 sentences), followed by 4 sections with headers, ending with a recommendation matrix. [Tone] Professional, evidence-based, suitable for a C-suite audience.
```

Exercise: Your First Before & After

Instructions (5 minutes)

1. Think of a prompt you've used recently with an AI tool
2. Write it down as your "before" version
3. Identify what's missing: Is there context? A clear role? Specific format?
4. Write an improved "after" version adding what you identified

Discuss: What changed most? What do you expect will be different about the output?

Tip: Don't worry about perfection yet. We'll formalize this process with the CRAFT framework in the next module.

The CRAFT Framework

A structured methodology for composing prompts that consistently produce high-quality outputs

C: Context — Setting the Scene

Context is the background information the AI needs to understand your situation, constraints, and domain.

What Context Includes

- **Domain** — industry, field, or subject area
- **Situation** — what's happening and why
- **Constraints** — limitations, requirements, deadlines
- **Data** — relevant facts, figures, or source material
- **Audience** — who will consume the output

Before:

```
"Write a report about our sales."
```

After:

```
"Our SaaS company had Q3 revenue of $2.4M, up 15% QoQ. Enterprise
deals grew 40% but SMB churn increased to 8%. We're preparing for
the board meeting next Tuesday."
```

> **Rule of Thumb:** If the AI would need to ask you a clarifying question, that information belongs in the context.

R: Role — Defining the Expert

The Role tells the AI which expert persona to adopt, shaping its knowledge, perspective, and communication style.

Domain Expertise

"Senior data scientist specializing in healthcare analytics"

Experience Level

"With 15 years of experience in enterprise sales"

Communication Style

"Known for making complex topics accessible to non-technical audiences"

```
Effective Roles:
- "Act as a senior financial analyst who specializes in SaaS metrics and board-level reporting."
- "You are an experienced UX researcher who has conducted 200+ usability studies."
- "Act as a technical architect evaluating cloud migration strategies for enterprise clients."
```

Avoid vague roles: "Be an expert" tells the AI nothing. Specify *what kind* of expert, in *what domain*, with *what perspective*.

A: Action — The Clear Instruction

The Action is the specific task you want the AI to perform. Precision here determines output quality.

Category	Action Verbs	Use When
Analysis	Analyze, evaluate, compare, assess, diagnose	Breaking down complex information
Creation	Write, draft, compose, design, develop	Generating new content
Transformation	Summarize, translate, rewrite, simplify, expand	Changing existing content
Decision	Recommend, prioritize, rank, select, justify	Making or supporting choices
Teaching	Explain, illustrate, demonstrate, guide	Educational content

Vague: "Help with our strategy"

Precise: "Evaluate our 3 pricing options and recommend the best one based on customer retention data"

F: Format — Controlling the Output

Format tells the AI *how* to structure its response. Without it, you get a wall of text.

Common Formats

- **Bullet points** — for scannable lists
- **Numbered steps** — for procedures
- **Tables** — for comparisons
- **JSON/YAML** — for structured data
- **Markdown** — for formatted documents
- **Specific template** — "Follow this structure: ..."

Format specification examples:

```
"Structure as: Executive Summary (3 sentences),
Key Metrics (table), Recommendations (numbered list)"

"Output as a JSON object with keys: title, summary,
key_points (array), sentiment (positive/negative/neutral)"

"Create a comparison table with columns: Feature,
Option A, Option B, Recommendation"
```

Power Move: Provide a template. "Format your response like this: [Title] / [One-sentence summary] / [3 key points as bullets] / [Recommended next step]"

T: Tone — Setting the Voice

Tone controls the personality, formality, and emotional register of the AI's response.

Tone Dimensions

Spectrum	Low End	High End
Formality	Casual, conversational	Formal, professional
Technicality	Plain language	Technical, precise
Directness	Diplomatic, nuanced	Direct, assertive
Energy	Measured, calm	Enthusiastic, dynamic
Depth	Concise, brief	Detailed, comprehensive

```
Tone examples:

"Professional and data-driven, suitable for C-suite"

"Friendly and encouraging, like a helpful colleague
explaining something at lunch"

"Technical but accessible — assume the reader
knows business but not engineering"

"Direct and concise. No filler words.
Every sentence must add value."
```

CRAFT in Action: Full Walkthrough

Business Report

[C] Our B2B SaaS company (50 employees, $8M ARR) is losing enterprise deals to a competitor who launched an AI feature. Our product roadmap includes AI features in Q2.

[R] Act as a competitive strategy consultant with deep B2B SaaS experience.

[A] Analyze our competitive position and create a 90-day action plan to protect existing deals while our AI features are in development.

[F] Structure as: Situation Assessment (paragraph), Competitive Analysis (table), 90-Day Action Plan (numbered phases with milestones), Risk Mitigation (bullets).

[T] Strategic and direct. This will be read by our CEO and VP Sales. Be candid about risks but constructive in recommendations.

Training Design

[C] We need to train 200 customer support agents on a new ticketing system. They have varying tech skills (beginner to intermediate). Training must be completed within 2 weeks without disrupting support operations.

[R] Act as a corporate training designer specializing in technology adoption programs.

[A] Design a blended learning program that gets all 200 agents proficient in the new system within 2 weeks.

[F] Provide: Program Overview, Week 1 Schedule (daily breakdown), Week 2 Schedule, Assessment Criteria, and a "Quick Start" 1-page reference card outline.

[T] Practical and implementation-focused. Assume resource constraints. Avoid theoretical padding — every element must be actionable.

Exercise: Build Your First CRAFT Prompt

Hands-On Exercise (10 minutes)

1. Open the **CRAFT Prompt Builder** interactive demo tool
2. Choose a real task from your work (email, report, analysis, content creation)
3. Fill in each CRAFT field with specific, detailed information
4. Review the generated prompt and check the quality score
5. Try a template from the library, then customize it for your use case

Or use **Lab 1: CRAFT Prompt Builder** (Jupyter notebook) for a deeper guided experience.

Quality Target: Aim for a score of 80+ in the builder. If any CRAFT element is empty or vague, the score will reflect it.

Advanced Prompt Techniques

📚 **Few-Shot**
Learn by example

👥 **Chain of Thought**
Step-by-step reasoning

🌳 **Tree of Thoughts**
Multi-path exploration

💰 **Self-Consistency**
Consensus answers

🎭 **Persona**
Expert perspectives

⚙ **System Messages**
Persistent behavior

📋 **Output Constraints**
Structured formats

Few-Shot Learning

Provide examples of desired input-output pairs to establish a pattern the AI should follow.

```
Classify the sentiment of customer reviews as POSITIVE, NEGATIVE, or NEUTRAL.

Examples:
Review: "The product exceeded my expectations! Amazing quality." → POSITIVE
Review: "Shipping was delayed by 2 weeks and the item arrived damaged." → NEGATIVE
Review: "It works as described. Nothing special but does the job." → NEUTRAL

Now classify:
Review: "I love the new interface but the load time is frustrating."
```

The Sweet Spot: 3 examples is optimal. Fewer may not establish the pattern clearly. More than 5 wastes context tokens without meaningful improvement. Ensure your examples cover the range of expected outputs.

Chain-of-Thought Prompting

Ask the AI to show its reasoning process step by step before giving a final answer.

Without CoT

```
A company has 120 employees. 35% work in engineering, 25% in sales,
and the rest in operations. If engineering grows by 20% and sales
by 10%, how many total employees in those two departments?

AI may jump to answer, possibly making arithmetic errors.
```

With CoT

```
A company has 120 employees. 35% work in engineering, 25% in sales,
and the rest in operations. If engineering grows by 20% and sales
by 10%, how many total employees in those two departments?

Think through this step by step, showing your work at each stage.

AI: Engineering = 120 × 0.35 = 42, +20% = 50.4 ≈ 50
Sales = 120 × 0.25 = 30, +10% = 33
Total = 50 + 33 = 83
```

When to Use CoT

- Math and logic problems
- Complex multi-step analysis
- Debugging and troubleshooting
- Any task where you need to verify the AI's reasoning

Tree of Thoughts & Self-Consistency

Tree of Thoughts

Explore multiple reasoning paths before committing to an answer.

```
We're deciding between building a feature in-house vs. buying a vendor
solution.

Consider 3 different evaluation approaches:
Path 1: Cost analysis (total cost of ownership over 3 years)
Path 2: Speed-to-market (time to value comparison)
Path 3: Strategic fit (alignment with product vision)

For each path, evaluate both options, then synthesize the best
recommendation across all three perspectives.
```

Self-Consistency

Generate multiple answers and select the consensus to reduce errors.

```
Solve this problem 3 times using different approaches. Then compare
your answers and provide the most consistent result with an
explanation of why you're confident.

Problem: Should we expand to the European market in Q2 or Q3, given
our current runway of 18 months and the regulatory timeline?

Approach 1: Financial analysis
Approach 2: Competitive timing
Approach 3: Operational readiness
```

Persona & Multi-Persona Engineering

Assign detailed expert personas for depth, or use multiple personas for diverse perspectives.

```
Multi-Persona Panel Discussion

Evaluate our plan to migrate from monolithic architecture to microservices. Provide analysis from three expert perspectives:

CTO Perspective: Focus on technical complexity, team capabilities, and architectural risks. What technical debt do we need to address first?

CFO Perspective: Focus on cost implications, ROI timeline, and budget risks. What's the financial case for and against?

VP Engineering Perspective: Focus on team morale, hiring needs, and delivery timeline impact. How will this affect our product roadmap?

End with a synthesis: Where do the three perspectives agree? Where do they conflict? What's the recommended path forward?
```

Pro Technique: Multi-persona prompts force the AI to consider genuine trade-offs rather than giving a one-sided recommendation.

System Messages & Instruction Following

System messages set persistent behavioral rules that apply to the entire conversation.

System Message (persistent)

```
You are a senior financial analyst at a Fortune 500 company.

Rules:
- Always cite specific data to support claims
- Flag assumptions explicitly
- Use tables for comparisons
- Never give investment advice
- If uncertain, say "I need more data on X"
- Keep responses under 500 words unless asked for more
```

What Goes Where

System Message

- Persona and expertise
- Behavioral rules and constraints
- Output format defaults
- Safety guardrails

User Message

- Specific task instructions
- Data and context for this request
- Format overrides for this response

Output Constraints & Structured Output

Strictly define what the output should look like for consistent, parseable results.

JSON Schema Output

```
Analyze this customer review and return a JSON object with exactly this
structure:

{
  "sentiment": "positive|negative|neutral",
  "confidence": 0.0-1.0,
  "key_topics": ["topic1", "topic2"],
  "action_required": true|false,
  "suggested_response": "string"
}

Review: "Love the product but support response times are terrible.
Waited 3 days for a simple question."
```

Constraint Types

Length

"Maximum 3 sentences" / "Between 200-300 words" / "One paragraph"

Format

"Use only bullet points" / "Return valid JSON" / "Use markdown table format"

Content

"Only use information provided" / "Do not include opinions" / "Cite sources for every claim"

Exercise: Technique Tournament

Hands-On Exercise (15 minutes)

Task: "Recommend the best project management tool for a 30-person remote team"

1. Write this prompt using **Few-Shot** (provide 3 example tool evaluations as a pattern)
2. Write it using **Chain-of-Thought** (ask for step-by-step evaluation criteria)
3. Write it using **Multi-Persona** (get opinions from PM, developer, and executive)

Run all three in your preferred AI tool. Which technique produced the most useful result? Why?

Goal: Develop intuition for which technique fits which situation. There's no single "best" technique — the right choice depends on the task.

What Is Context Engineering?

Context engineering goes beyond prompting. It's the discipline of designing and managing the **entire information environment** in which an AI model operates.

Prompting

Writing a single instruction for one task

"What to say"

Context Engineering

Managing all information the AI has access to across a session

"What to know"

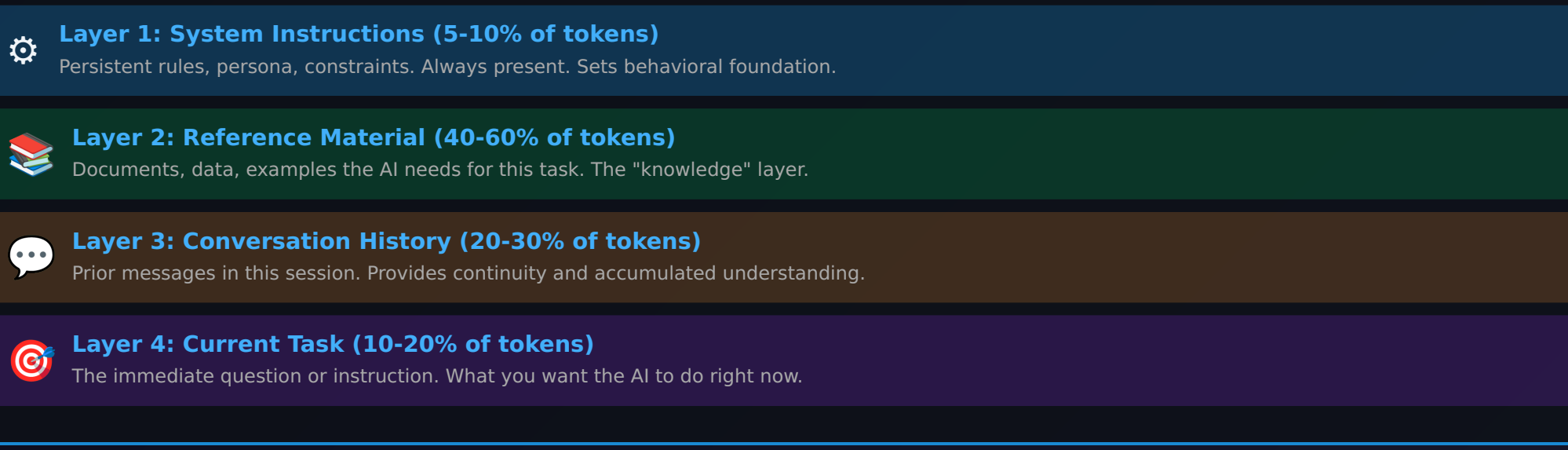
Why It Matters

AI outputs are only as good as the context you provide. Garbage in, garbage out.

"Quality control"

The Attention Problem: As context grows, the AI's ability to attend to specific details diminishes. More context is not always better.

The Context Window Explained



Context Budgeting

Every model has a finite context window. How you allocate tokens across layers determines output quality.

Model	Context Window	Approx. Pages of Text
GPT-4o	128K tokens	~200 pages
Claude 3.5 Sonnet	200K tokens	~350 pages
Gemini 1.5 Pro	1M tokens	~1,500 pages
Most practical limit	~10-30K tokens	~15-50 pages

Empty Optimal Zone Overloaded

Counter-intuitive: Models perform *worse* when the context window is stuffed to capacity. The "lost in the middle" effect means information in the middle of long contexts gets less attention.

Information Priority Stack

Not all context is equally important. Prioritize ruthlessly.

1. **Essential** — Without this, the AI cannot complete the task. Core data, key constraints, critical requirements. Always include
2. **Important** — Significantly improves quality. Domain terminology, style examples, key relationships. Include when possible
3. **Helpful** — Adds nuance and polish. Edge cases, preferences, additional context. Include if space
4. **Nice-to-have** — Marginal improvement. Background history, tangential references. Usually omit

> **Test:** If you can remove a piece of context and the output quality doesn't change, it probably doesn't need to be there.

Context Engineering in Practice

Poor Context

Here's our company handbook (47 pages). Also here's every email from the past month. And our org chart. And the project plan.

Now answer this question: What's our vacation policy for new hires in the EU?

Problem: 95% of the context is irrelevant. The AI has to search through noise to find the signal.

Engineered Context

Here is the relevant section from our company handbook on vacation policy:

[Section 4.2 - PTO Policy for EU Employees]
"New hires accrue 2.08 days per month starting from date of hire. EU statutory minimums apply per country. Probation period: 6 months."

Question: Summarize the vacation policy for new EU hires in 3 bullets, including the probation note.

Only essential information provided. Clear, focused task.

Exercise: Context Engineering Workshop

Hands-On Exercise (10 minutes)

1. Think of a document or dataset you commonly reference when using AI (a report, a brief, meeting notes)
2. Using the Priority Stack, categorize its information into the 4 levels
3. Write a prompt that includes only the Essential and Important context
4. Estimate: what percentage of the original document did you actually need?

Goal: Most people discover they only need 20-30% of what they typically paste into a prompt.

Prompt Chains & Workflows

Complex tasks produce better results when broken into a series of focused prompts.

What

Multi-step sequences where each prompt's output feeds into the next prompt's input

Why

Each step gets the AI's full attention. Quality compounds across the chain instead of degrading.

When

Any task that involves research + analysis + creation, or where a single prompt produces mediocre results

Mental Model: Think of prompt chains like an assembly line. Each station does one thing well. The finished product is better than any single station could produce alone.

Skill Chains: Connecting Prompts

How It Works

- Each step has a single, clear CRAFT prompt
- The output of Step N becomes context for Step N+1
- You can review and adjust between steps
- If one step fails, you only redo that step — not the whole task

Task Decomposition

Monolithic Prompt

"Research the top AI trends for 2025, create a detailed outline, write a 2000-word blog article with citations, optimize it for SEO, add social media snippets, and format it for WordPress."

Problem: 6 different tasks competing for attention. Each suffers from divided focus. The AI tries to do everything at once and does nothing well.

Decomposed Chain

Step 1: "Research the top 5 AI trends for 2025 with credible sources. For each, provide the trend name, a key statistic, and a one-sentence impact statement."

Step 2: "Using these trends, create a blog outline for an HR director audience. Include an attention-grabbing title and 5 sections."

Step 3: "Write the full blog post following this outline. 2000 words, professional but engaging."

Step 4: "Add SEO metadata, suggest 3 social media snippets, and format for WordPress."

Workflow Patterns

Sequential

A → B → C → D

Steps run in order, each using the previous output. Best for research-to-creation pipelines.

Example: Research → Outline → Draft → Edit

Fan-Out

↳ B
A ↳ C
↳ D

Same prompt applied to multiple inputs in parallel. Best for batch processing.

Example: Analyze 10 customer reviews simultaneously

Iterative

A → B → A' → B'

Same prompt applied repeatedly, refining output each time. Best for quality improvement.

Example: Draft → Critique → Revise → Final

Case Study: Content Production Workflow

Step 1: Research

```
[Context] We publish a weekly technology newsletter for HR leaders.
[Action] Extract the 5 most significant AI-in-hiring statistics from
2024-2025. For each provide the source, exact figure, and one-sentence
interpretation for HR directors.
```

Step 2: Outline

```
[Context] Using the research below, create a newsletter article outline.
[Action] Write an outline with: compelling subject line, opening hook, 5
sections (one per stat), and call to action.
[Format] Outline with section headers, key points as sub-bullets,
suggested word count per section.
```

Step 3: Draft

```
[Context] Following this outline for our HR technology newsletter.
[Action] Write the full article. 1200 words. Weave statistics naturally
into the narrative.
[Tone] Authoritative but conversational. End each section with a practical
takeaway.
```

Step 4: Polish

```
[Action] Review this draft. Fix awkward transitions, strengthen the
opening, verify all statistics have attributions.
[Format] Return the polished article plus: 3 social media snippets
(LinkedIn, Twitter, newsletter teaser).
```

Exercise: Design Your Workflow

Hands-On Exercise (15 minutes)

1. Choose a complex task from your work that you've struggled to get good AI results on
2. Decompose it into 3-4 sequential prompt steps
3. Write a CRAFT prompt for each step
4. Identify what output from each step feeds into the next

For a deeper guided experience, try **Lab 2: Prompt Chains & Testing** (Jupyter notebook).

Common tasks that benefit from chains: Report writing, competitive analysis, content calendars, proposal creation, data analysis narratives, training material development.

Testing & Refining Prompts

Professional prompt engineering is iterative. Expect to refine a prompt 3-5 times before it consistently produces the quality you need.

Amateur Approach

- Write one prompt
- Accept whatever comes back
- If it's bad, start over from scratch
- No systematic improvement

Professional Approach

- Define success criteria first
- Write, test, evaluate systematically
- Diagnose specific failure modes
- Make targeted refinements
- Track iterations and improvements

The Prompt Engineering Cycle

Step 1 is Critical

Before writing a single word, define what "good" looks like. What must the output contain? What format? What level of detail? How will you know if it succeeded? This is the most commonly skipped step.

Common Failure Modes & Fixes

Failure Mode	Symptoms	Fix
Hallucination	AI invents facts, cites non-existent sources, states incorrect information confidently	Add "Only use information provided." Request source citations. Provide reference material in context.
Verbosity	Response is 3x longer than needed, padded with filler phrases and qualifications	Specify word/sentence limits. Add "Be concise." Use format constraints like bullet points or tables.
Off-Topic Drift	Response starts well but wanders into tangential or unrequested territory	Strengthen the Action element. Add "Focus exclusively on X." Remove distracting context.
Inconsistency	Same prompt gives different quality results each time it's run	Lower temperature. Add few-shot examples. Make instructions more specific. Add output validation.
Shallow Analysis	Surface-level response that restates the obvious without insight	Add Chain-of-Thought. Request "detailed analysis with evidence." Specify depth: "provide 3 layers of analysis."

Validation Techniques

Self-Check

Ask the AI to critique its own output against your criteria: "Review your response. Does it meet all 5 of these requirements? List any gaps."

Red Teaming

Try to break your prompt with edge cases and adversarial inputs. What happens with ambiguous requests? Missing data? Conflicting instructions?

Rubric Scoring

Define 5 quality dimensions, score each 1-5: Relevance, Completeness, Format Compliance, Accuracy, Actionability. Score consistently across iterations.

A/B Testing

Run two prompt versions on the same inputs. Compare results across 3-5 test cases. The version that scores consistently higher wins.

Response Prediction & Debugging

Predict Before You Run

Before running a prompt, predict what the output will look like:

- What format will it be?
- How long will it be?
- What key points will it cover?
- What might it get wrong?

If you can't predict the output, the prompt isn't specific enough.

Systematic Debug Checklist

1. **Is the Context sufficient?** Does the AI have everything it needs?
2. **Is the Role appropriate?** Is the expertise level right?
3. **Is the Action unambiguous?** Could it be interpreted differently?
4. **Is the Format specified?** Does the AI know what structure to use?
5. **Is the Tone defined?** Is the voice and style clear?
6. **Are there conflicting instructions?** Does anything contradict?

Exercise: Prompt Testing Lab

Hands-On Exercise (15 minutes)

1. Open the **Prompt Testing Lab** interactive tool
2. Write your prompt in **Version A**
3. Score it using the 5-dimension rubric
4. Click "Start New Iteration" — your Version A moves to the base, and you write an improved Version B
5. Repeat for 3 iterations. Track your score improvement.

Target: Improve your total score by at least 5 points across 3 iterations.

Common improvements per iteration: Iteration 1: Add missing CRAFT elements. Iteration 2: Add technique (CoT, examples). Iteration 3: Tighten constraints and format.

Real-World Applications

Business

- Customer support responses
- Sales proposals and follow-ups
- Market analysis and competitive intelligence
- Internal communications and presentations

Creative & Content

- Blog posts, articles, and newsletters
- Social media content calendars
- Brainstorming and ideation sessions
- Style transfer and tone adaptation

Analytical

- Data interpretation and summaries
- Sentiment analysis pipelines
- Report generation from raw data
- Trend identification and forecasting

Educational

- Curriculum and lesson planning
- Quiz and assessment generation
- Multi-level explanations
- Study guide creation

Business Applications

Customer Support Response

[C] Customer "TechCorp" (Enterprise tier, $50K ARR) has reported their API integration failing after our v3.2 update. They've been a client for 2 years. Their contract renewal is in 6 weeks.

[R] Act as a senior customer success manager with technical understanding.

[A] Draft a response that acknowledges the issue, provides immediate next steps, and reassures them about resolution timeline.

[F] Format: Greeting, acknowledgment, immediate action plan (numbered), timeline commitment, closing.

[T] Empathetic, professional, and solution-oriented. Convey urgency without panic.

Sales Proposal Section

[C] Prospect: mid-market financial services firm, 500 employees, currently using Competitor X (3-year contract ending in Q2). Pain points: slow reporting, poor mobile experience, no AI features.

[R] Act as an enterprise sales strategist specializing in competitive displacement.

[A] Write the "Why Switch" section of our proposal, directly addressing each pain point with our capabilities.

[F] 3 paragraphs: Pain Point → Our Solution → Expected Impact. Include one quantified benefit per pain point.

[T] Confident but not aggressive. Let the value proposition speak for itself.

Creative & Content Applications

Content Creation Chain

Step 1: Ideation
[C] We run a B2B SaaS blog targeting CTOs. Our product helps with cloud cost optimization.
[A] Generate 10 blog post ideas that address real pain points CTOs face with cloud spending. For each, provide: title, target keyword, and a hook sentence.

Step 2: Draft
[A] Write blog post #3 from the list. 1500 words. Include a real-world scenario, 3 actionable tips, and a soft CTA for our free cost assessment tool.
[T] Authoritative but approachable. Write like a cloud architect sharing lessons learned, not a salesperson.

Style Transfer

[C] Here is our internal technical documentation for our API rate limiting feature:
"Rate limiting is implemented using a token bucket algorithm with a default of 1000 requests per minute per API key."

[A] Rewrite this for three different audiences:
1. **Developer docs:** Technical, include code examples
2. **Sales one-pager:** Benefits-focused, non-technical
3. **Customer FAQ:** Plain language, addresses "what does this mean for me?"

[F] Provide all three versions, clearly labeled, each under 100 words.

Analytical & Educational Applications

Data Analysis

```
[C] Here are our website analytics for Q4:
- Organic traffic: 45K (+12% QoQ)
- Bounce rate: 68% (+5%)
- Avg session: 2.1 min (-15%)
- Conversion rate: 2.3% (-0.4%)

[R] Act as a digital marketing analyst.

[A] Diagnose why traffic is up but engagement and conversions are down.
Provide 3 hypotheses ranked by likelihood, with specific data points
supporting each.

[F] For each hypothesis: Title, Evidence, Recommended Investigation,
Quick Fix.
```

Educational Content

```
[C] I'm creating training material for new managers (first-time people
leaders, promoted from individual contributor roles).

[R] Act as a leadership development facilitator with experience in tech
companies.

[A] Explain the concept of "psychological safety" at three different
levels:
1. Executive summary (2 sentences)
2. Team leader guide (1 paragraph with examples)
3. Deep dive (3 paragraphs with research citations and practical
exercises)

[F] Label each level clearly. Include at least one concrete workplace
example per level.
```

Building a Personal Prompt Library

Your best prompts are an asset. Organizing and sharing them multiplies their value.

How to Organize

- **By task type:** Writing, analysis, coding, communication, research
- **Track versions:** v1.0, v1.1, v2.0 — know what changed and why
- **Note the model:** Prompts may behave differently across GPT-4, Claude, Gemini
- **Tag with metadata:** Use case, domain, confidence level, last tested
- **Share with your team:** A shared prompt library compounds in value

Recommended Categories

- Email templates (follow-up, cold outreach, internal)
- Analysis prompts (data, competitive, risk)
- Content creation (blog, social, documentation)
- Meeting prompts (agendas, summaries, action items)
- Code and technical (review, debug, explain)
- Decision support (evaluate, compare, recommend)

Exercise: Capstone Challenge

Capstone Challenge (20 minutes)

Apply everything you've learned today to solve a real challenge from your work.

1. **Choose a real task** you do at work that involves AI (or could)
2. **Apply CRAFT** to write a structured prompt
3. **Add a technique** (few-shot, CoT, persona, or output constraints)
4. **Consider context engineering** — what information does the AI need? What can you cut?
5. **If it's complex, decompose it** into a 2-3 step chain
6. **Score it** using the 5-dimension rubric (clarity, specificity, context, format, technique)

Share your solution with the group. What worked? What would you iterate on next?

Key Takeaways

Foundation

The **CRAFT Framework** gives you a reliable structure for every prompt: Context, Role, Action, Format, Tone.

If you remember one thing, remember CRAFT.

Techniques

Few-shot, Chain-of-Thought, Persona, Output Constraints — each technique is a tool. Match the tool to the task.

Context engineering and prompt chains handle complex work.

Professional Practice

Test, evaluate, iterate. Define success criteria first. Track your prompts. Build a library.

Professional prompting is a skill that improves with deliberate practice.

Resources & Next Steps

Course Materials

- **Student Notes** — Complete reference with all frameworks, examples, and exercises
- **CRAFT Prompt Builder** — Interactive tool for building structured prompts
- **Prompt Testing Lab** — A/B testing and iterative refinement tool
- **Lab 1** — CRAFT framework hands-on notebook
- **Lab 2** — Prompt chains and testing notebook

Continue Learning

- **Practice daily** — Apply CRAFT to one real task each day
- **Build your library** — Save your best prompts, version them, share with colleagues
- **Stay current** — Models evolve; techniques that work today may improve or change
- **Experiment** — Try new models, new techniques, and push boundaries
- **Teach others** — Explaining prompt engineering deepens your own understanding

Thank You!

Prompt Engineering Masterclass

Questions? Let's discuss.

Remember: Great prompts are built, not born. Start with CRAFT, add techniques, and iterate. Your AI outputs will never be the same.