

# Build an AI Research Assistant with AI

## Execution Path

A structured route from idea to working output - the steps, outcomes, workflows, resources, and tools, in order.

Category: AI Systems Steps: 7 Phases: 4  
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### PATH SUMMARY

#### 7 steps across 4 phases.

Use this document as a portable execution guide. Each step lists the expected outcome and the workflow, resource, and tool used in NewPrompt.

## PHASE 1 · Define & Scope

Clarify what you're building and for whom.

### Step 1 · Define the research assistant scope

Frame what the assistant is for and who uses it - the research questions, the kinds of sources, and what a good answer looks like - so the rest of the build serves a defined job instead of a vague 'help me research'.

#### OUTCOME

A defined scope: the users, the questions, and what a good grounded answer is.

#### USED IN THIS STEP

|                 |                                  |
|-----------------|----------------------------------|
| <b>Workflow</b> | AI Product Requirements Workflow |
| <b>Resource</b> | Product Requirements Assistant   |
| <b>Tool</b>     | System Prompt Generator          |

## PHASE 2 · Design

Design the right solution before building.

### Step 2 · Organize the source corpus

Make the body of sources workable - packaged with clear boundaries and labels - so the assistant reads from organized, citable material instead of a heap of raw documents.

#### OUTCOME

A source corpus organized and packaged for the assistant to work from.

#### USED IN THIS STEP

|                 |                                                         |
|-----------------|---------------------------------------------------------|
| <b>Workflow</b> | AI Long Document Analysis Workflow                      |
| <b>Resource</b> | Package Long Documents for AI - Delimiters and ? Labels |
| <b>Tool</b>     | Long Input Formatter                                    |

## PHASE 3 · Build & Refine

Build, test, secure, and make it production-ready.

### Step 3 · Ground responses in source context

Build the grounding contract that ties answers to the sources - cite what the material says, and say plainly what it doesn't - so the assistant reasons from references instead of from the model's memory.

#### OUTCOME

A grounding contract that anchors responses to the sources, with no invention.

#### USED IN THIS STEP

|                 |                                                               |
|-----------------|---------------------------------------------------------------|
| <b>Workflow</b> | AI RAG Context Workflow                                       |
| <b>Resource</b> | Reduce AI Hallucinations with Grounding - the Strict Contract |
| <b>Tool</b>     | Long Input Formatter                                          |

### Step 4 · Extract key facts, claims, and citations

Pull the facts, claims, and figures that matter out of the sources, each tied to where it came from, so synthesis works from a clean set of cited evidence rather than re-reading everything.

#### OUTCOME

Key facts and claims extracted, each tied to its source.

#### USED IN THIS STEP

|                 |                                |
|-----------------|--------------------------------|
| <b>Workflow</b> | AI Data Extraction Workflow    |
| <b>Resource</b> | Extract Data From Text with AI |
| <b>Tool</b>     | Extraction Prompt Generator    |

### Step 5 · Synthesize findings into research outputs

Reconcile the evidence across sources into findings that hold together - agreements, conflicts, and gaps named - so the output is a synthesized read, not a list of disconnected quotes.

#### OUTCOME

Synthesized findings that reconcile the sources, with conflicts and gaps named.

#### USED IN THIS STEP

|                 |                                |
|-----------------|--------------------------------|
| <b>Workflow</b> | AI Research Synthesis Workflow |
| <b>Resource</b> | Research Synthesis Assistant   |
| <b>Tool</b>     | System Prompt Generator        |

## Step 6 · Evaluate groundedness and hallucination

Check that the findings actually trace to the sources - catch the confident claim with no citation behind it - so the assistant ships on evidence it stays grounded, not on a good-looking demo.

### OUTCOME

Findings checked for groundedness, with hallucinated claims caught.

### USED IN THIS STEP

|                 |                                |
|-----------------|--------------------------------|
| <b>Workflow</b> | AI Agent Evaluation Workflow   |
| <b>Resource</b> | Hallucination Detection Prompt |
| <b>Tool</b>     | AI Output Validator            |

## PHASE 4 · Ship & Validate

Ship with confidence and validate results.

## Step 7 · Validate and prepare for use

Measure whether the assistant actually helps its users research faster and more reliably - the success signal - and decide if it's ready, before relying on it for real work.

### OUTCOME

The assistant validated against its success signal and readied for use.

### USED IN THIS STEP

|                 |                                  |
|-----------------|----------------------------------|
| <b>Workflow</b> | AI Product Validation Workflow   |
| <b>Resource</b> | Product Validation Report Prompt |
| <b>Tool</b>     | Markdown Output Builder          |

This PDF is a static export of the NewPrompt execution path. It does not include workspace progress, personal notes, saved outputs, or project state.