

Agentic AI

Session 1

Presented by Eduard and Huy





From hackathons to the Startup Residency program, ShiftKey Labs makes sure students have the skills & support they need to pursue their most innovative ideas!

HIGHLIGHTS

Space Apps Challenge

Global Game Jam

**Generative AI
Hackathon**

Workshops & Talks

REACT
Blockchain
Prototyping
Startups
Freelancing
Cybersecurity



shiftkeylabs.ca



@ShiftKeyLabs



info@shiftkeylabs.ca

About Us



Eduard Kakosyan

AI Developer @ AI-First Consulting

BCS @ Dal

1st place at Atlantic AI Summit

2nd place at Volta Agentic Hackathon

Shiftkey Build 2024-2025



Huy Huynh

AI Developer @ Nova Scotia Gov.

BACS @ Dal

Perplexity AI Campus Partner

1st place at Atlantic AI Summit

2nd place at Volta Agentic Hackathon

Shiftkey Build 2024-2025

Course Description

This is an introductory course into GenAI and Agents. By the end of this course you will know about:

- LLMs
- Context Engineering
- Workflows
- Agents
- How to build anything with LLMs

Lets first see what an AI agent can do!

Build a website with just prompt (no coding)



Deep research, prepare report with Perplexity



All Students Skip Comet Browser Waitlist + Pro



<https://pplx.ai/huy-huynh>

Listen to your study materials as a podcast



2nd Brain AI Agent



- Settings file changes take effect immediately - no restart required
- Fixed issue causing "OAuth authentication is currently not supported"
- Status line input now includes `exceeds_200k_tokens`
- Fixed incorrect usage tracking in /cost.
- Introduced `ANTHROPIC_DEFAULT_SONNET_MODEL` and `ANTHROPIC_DEFAULT_OPUS_MODEL` for controlling model aliases opusplan, opus, and sonnet.

> i want you to develop a > Create an analytics dashboard for AI-First Consulting (a consulting firm focused on developing AI solutions for atlantic canadian businesses). include as many relevant features and interactions as possible. Go beyond the basics to create a fully-featured implementation. I want the dashboard to be modular, meaning each component should be easily added, removed and changed as needed. current KPIs that I care about are [Image #1], when setting up the project ensure we can use Supabase as backend for all information drawing, set-up a .env.local and env.mjs to ensure all the keys are hidden and follow TDD for testing out features. use sub-agents for UI/UX and MCPs as needed to achieve a solution

- I'll develop a comprehensive analytics dashboard for AI-First Consulting with modular components, Supabase integration, and proper testing. Let me start by planning this project and then execute it step by step.

- Update Todos

- ☐ Set up environment configuration with .env.local and env.mjs for Supabase
- ☐ Install necessary dependencies (Supabase, testing libraries, chart libraries)
- ☐ Create modular dashboard component structure
- ☐ Implement Sales KPI components (Leads, Calls, Proposals, Deals, Pipeline)
- ☐ Implement Delivery KPI components (Active Projects, On-Time %, Complete %, Billable Hours)
- ☐ Set up Supabase client and database schema
- ☐ Create data fetching hooks with real-time updates
- ☐ Implement interactive features (filters, date ranges, drill-downs)
- ☐ Write tests for components and hooks
- ☐ Add advanced features (exports, notifications, forecasting)

- Let me use specialized agents to help with this comprehensive task.

- Task(UI/UX Design)

- Done (54 tool uses · 95.8k tokens · 16m 17.8s)

> the color scheme of the website should follow this website's ai-first.ca [Image #1] and font futura

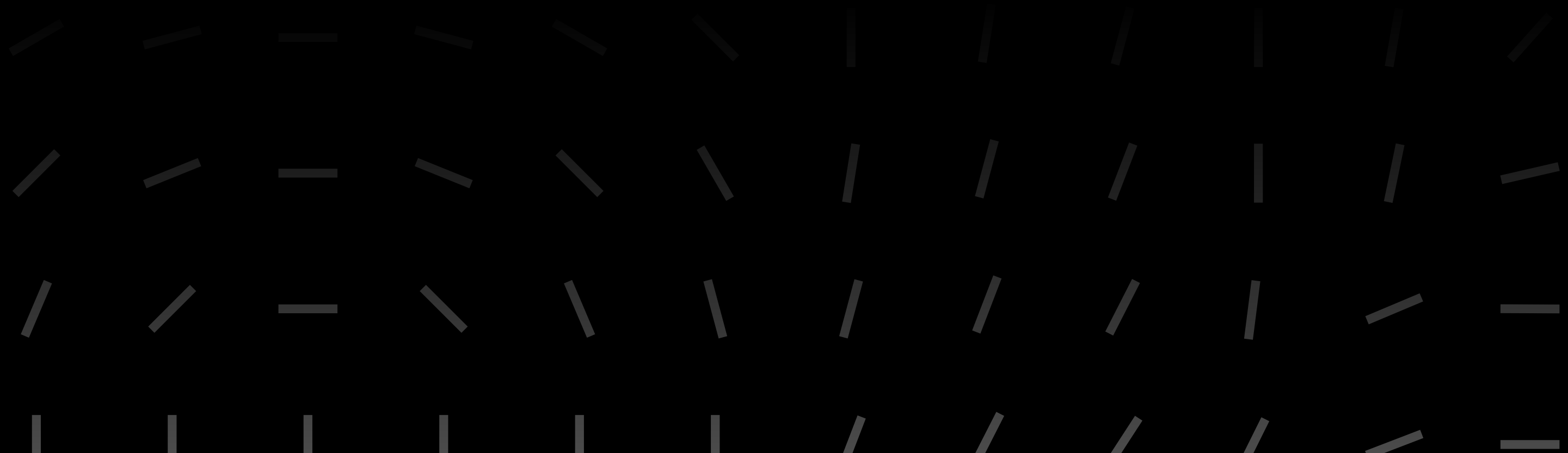
- I'll update the dashboard to match the AI-First website's color scheme and use Futura font. Let me first analyze the website's design system.

- Update Todos

😊 1 node 2 [tmux] 3 nvim 4 zsh

CPU 8% RAM 25GB/48 GB ❤️ 78% ! 5M main

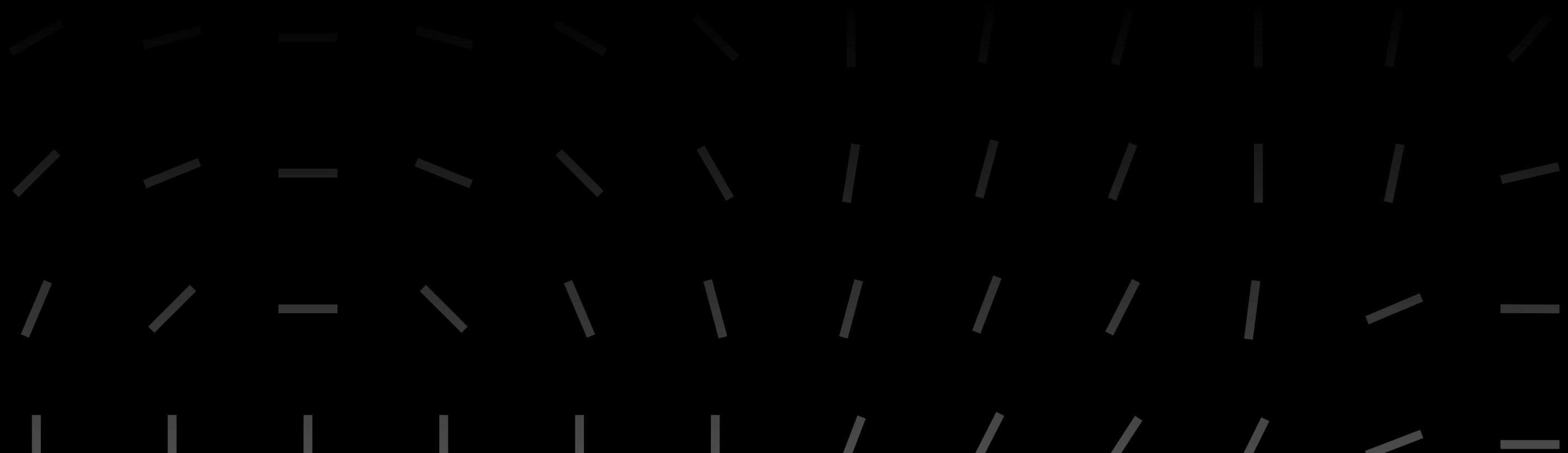
Final Project! (food for thought)



Requirements

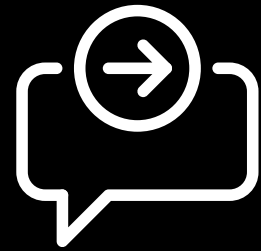
- Create an AI agentic system that will solve a problem
- Dataset Design & Description
- Agent Development
- Behavioral Evaluation
- Insights & Reflections
- Our Value Add
- Recommendations
- Conclusion

What is a Large Language Model



LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



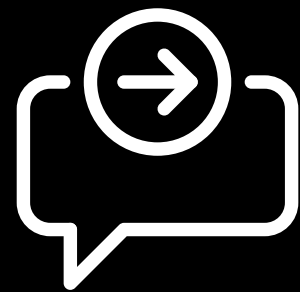
Prompt



LLM

LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



Prompt



LLM

Pre-training

LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



Prompt



Pre-training

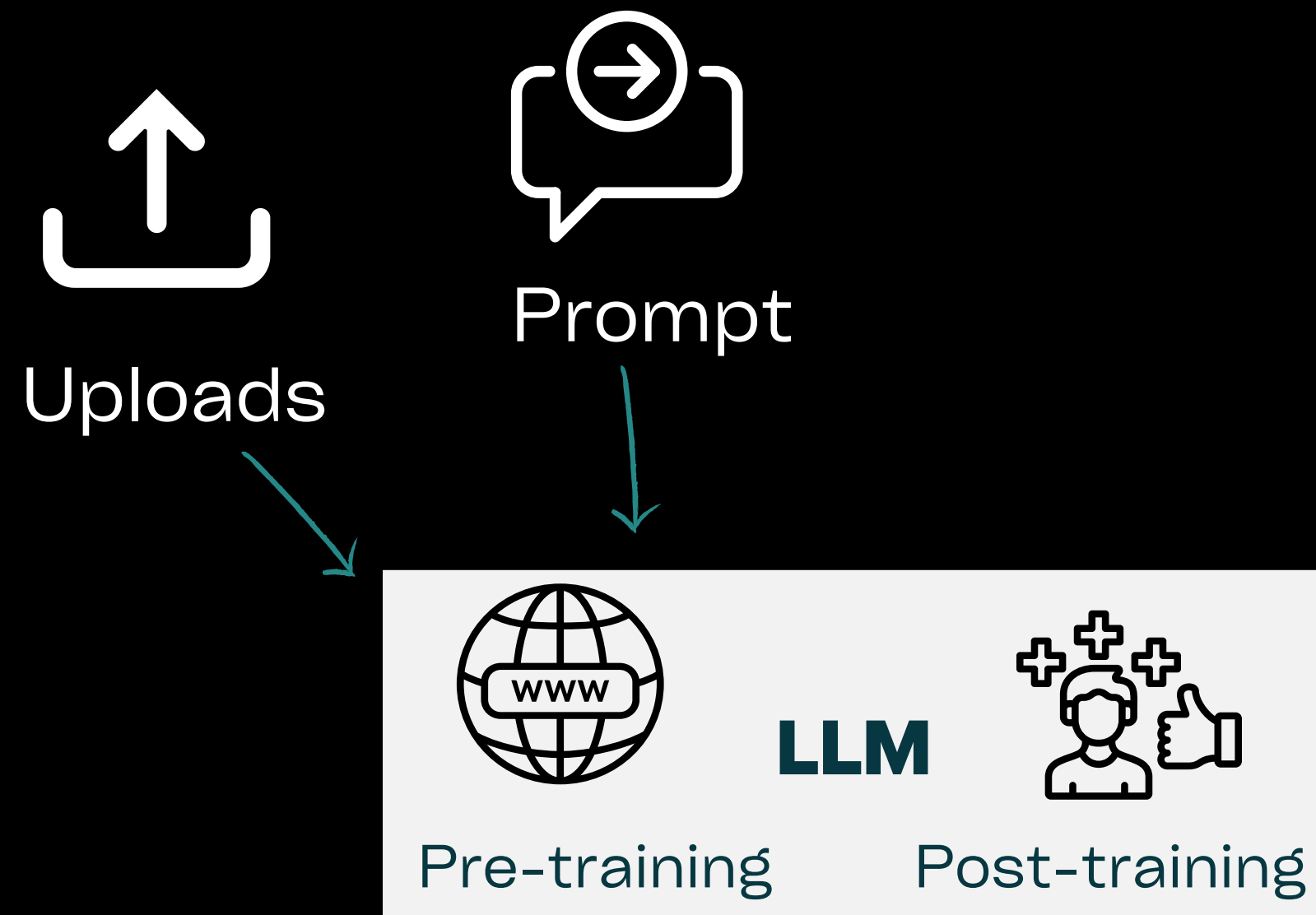
LLM



Post-training

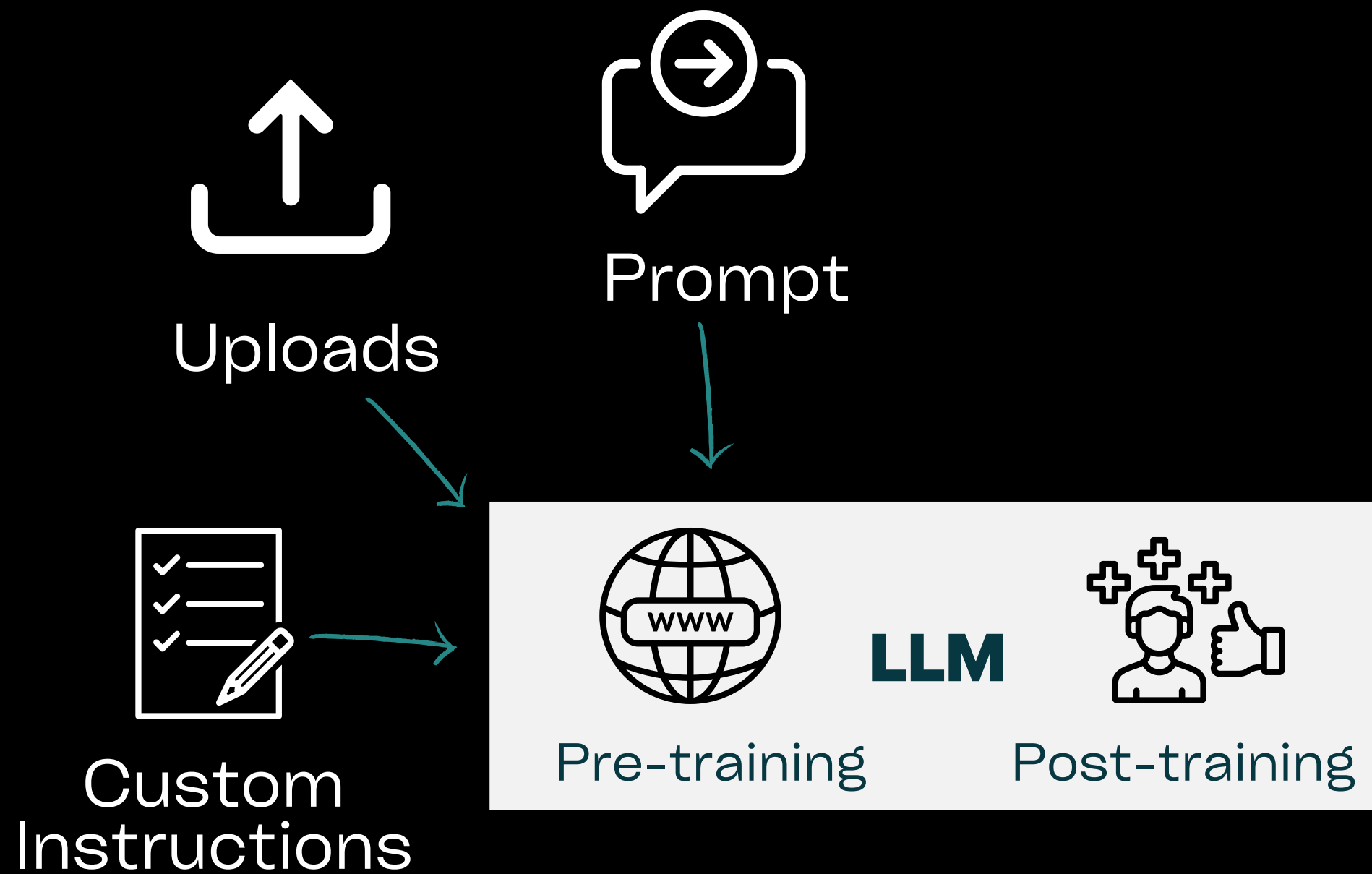
LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



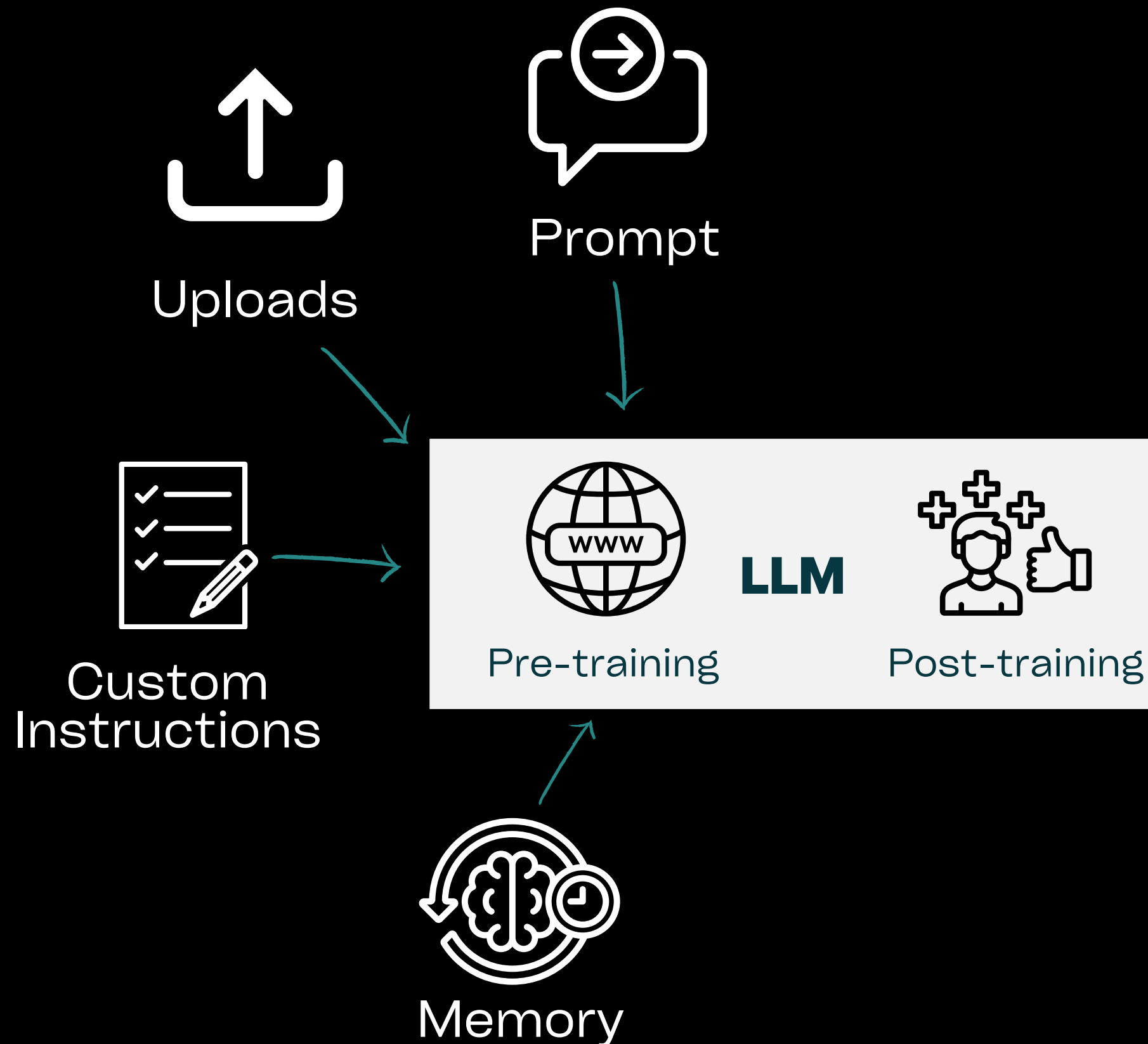
LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



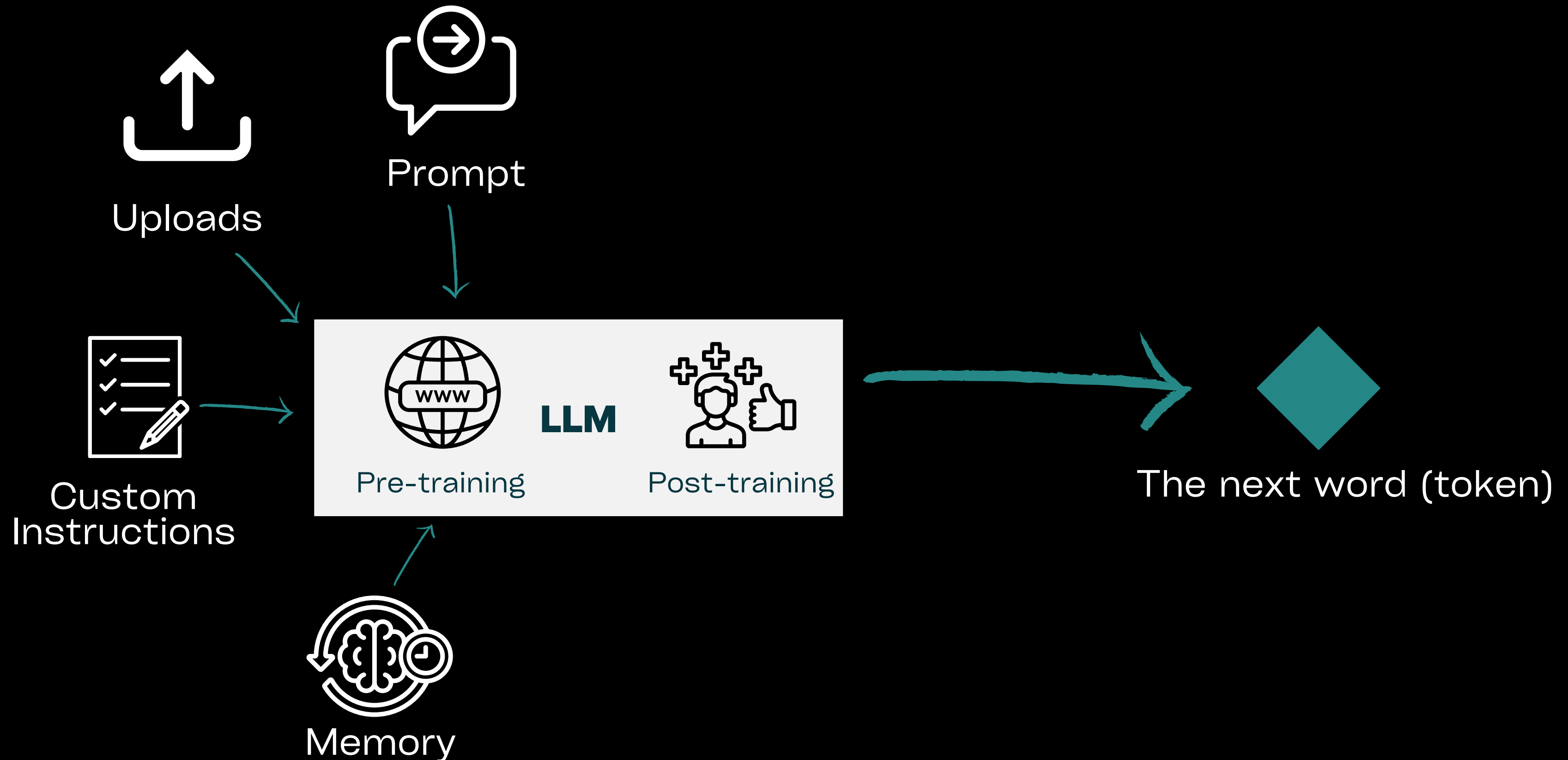
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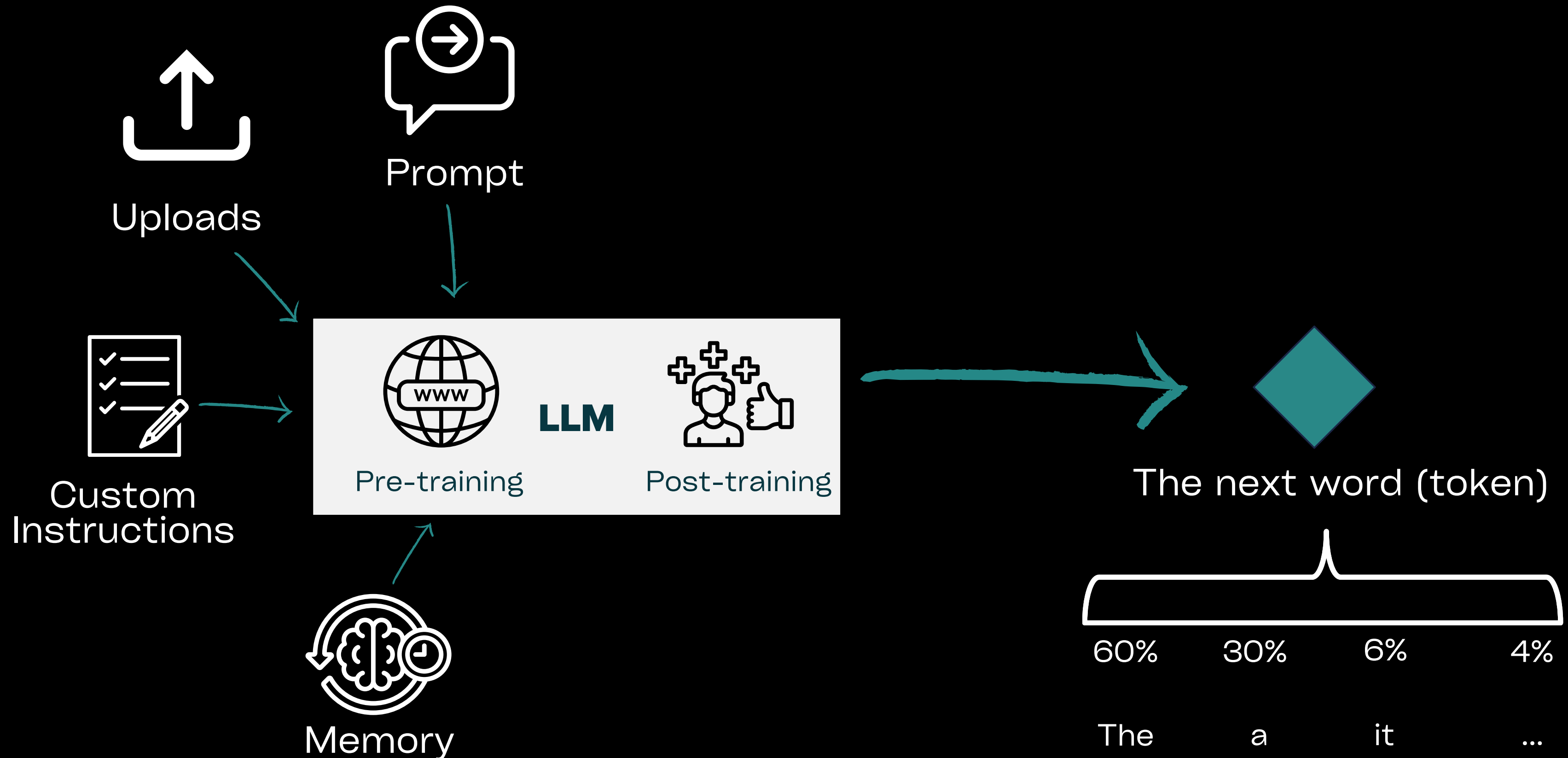
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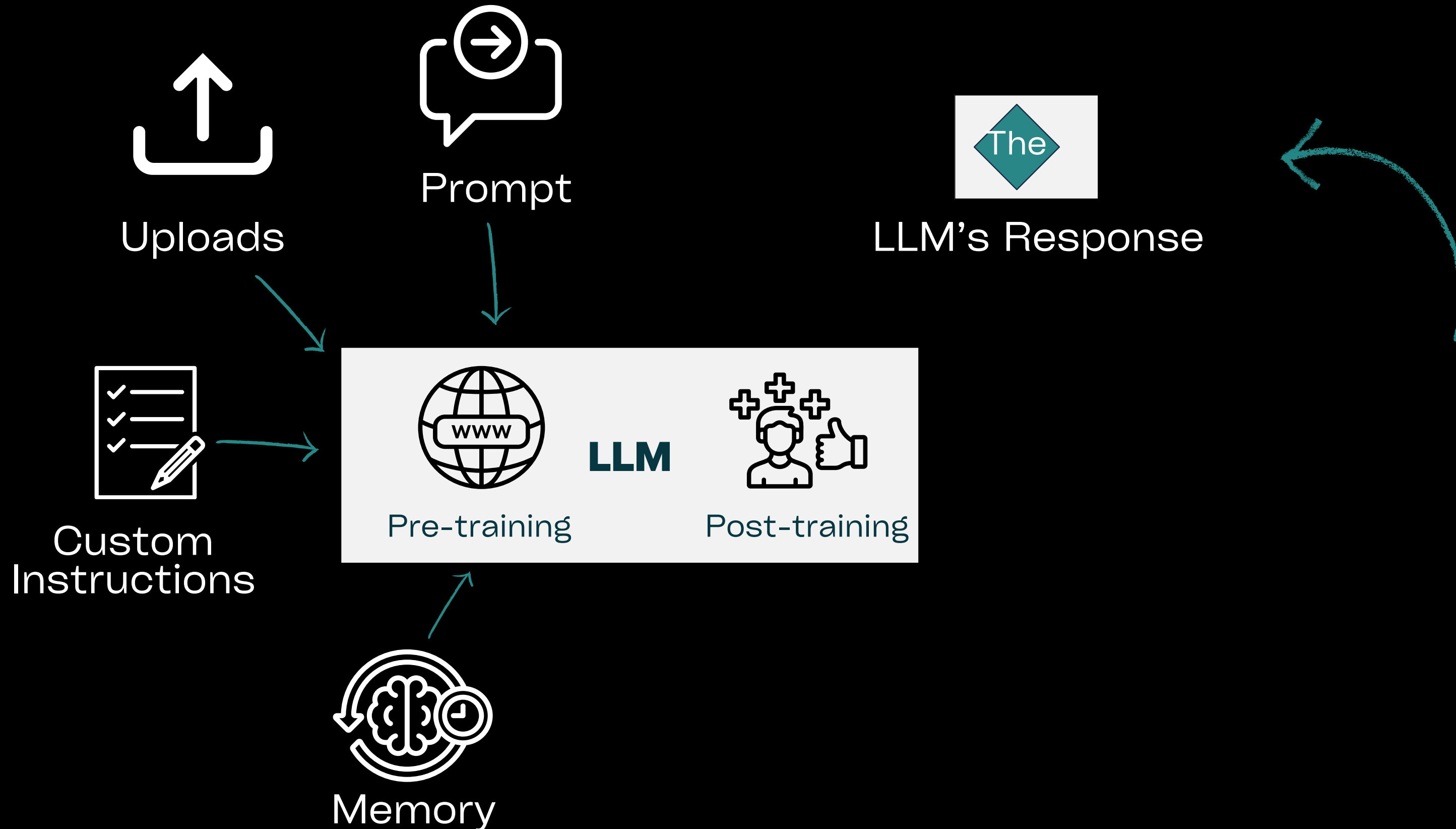
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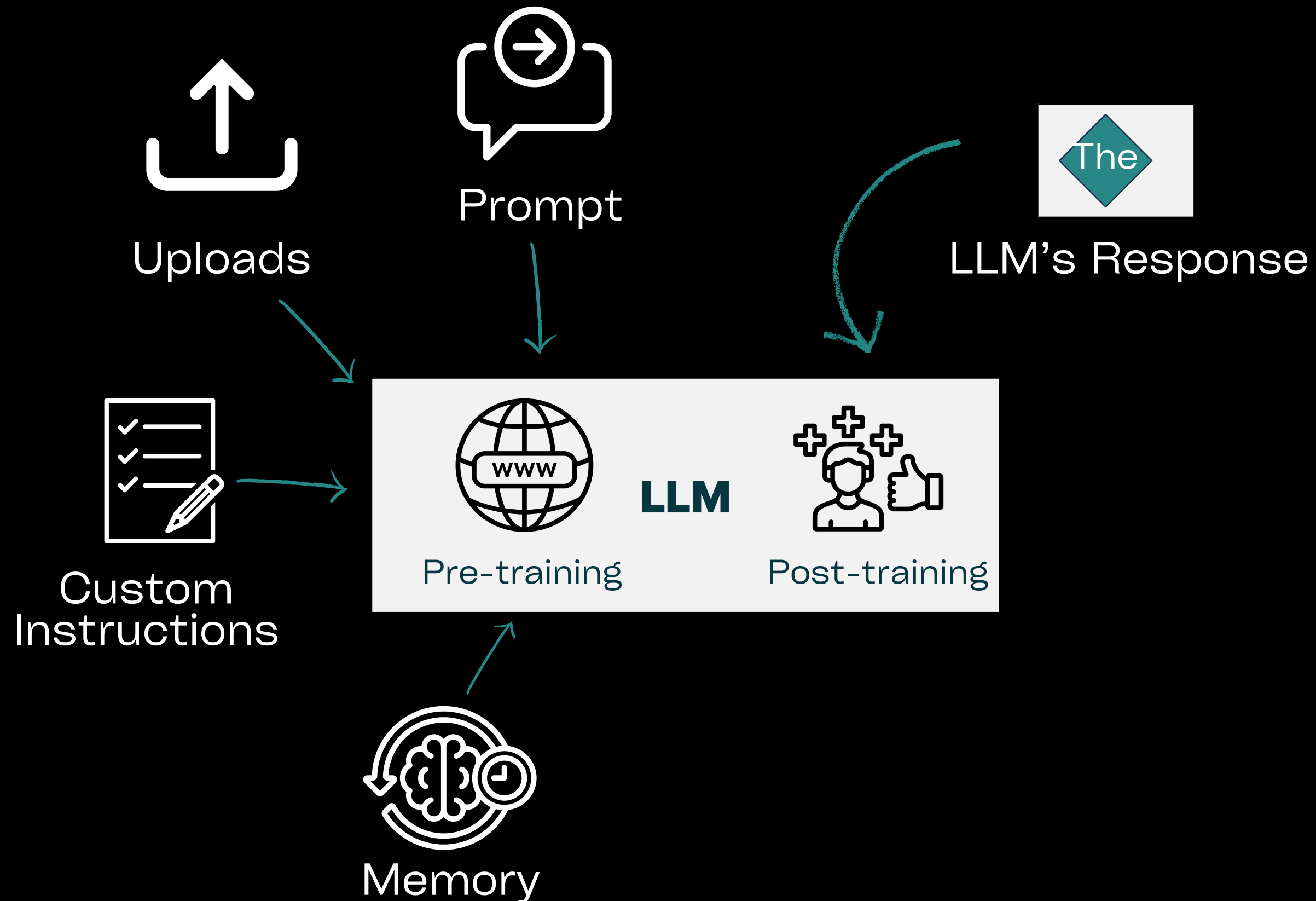
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“Tell me a story about a cat”



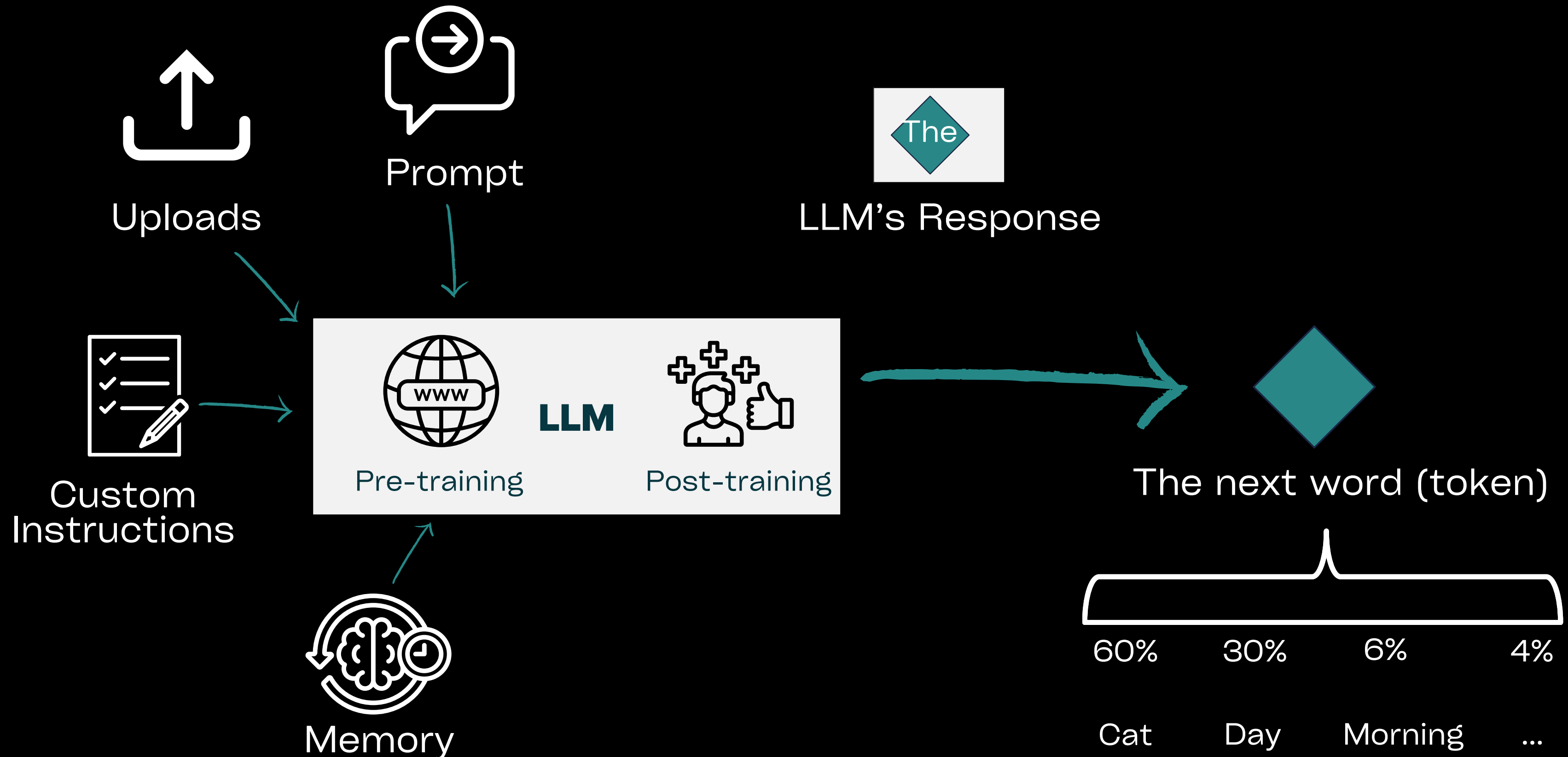
LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



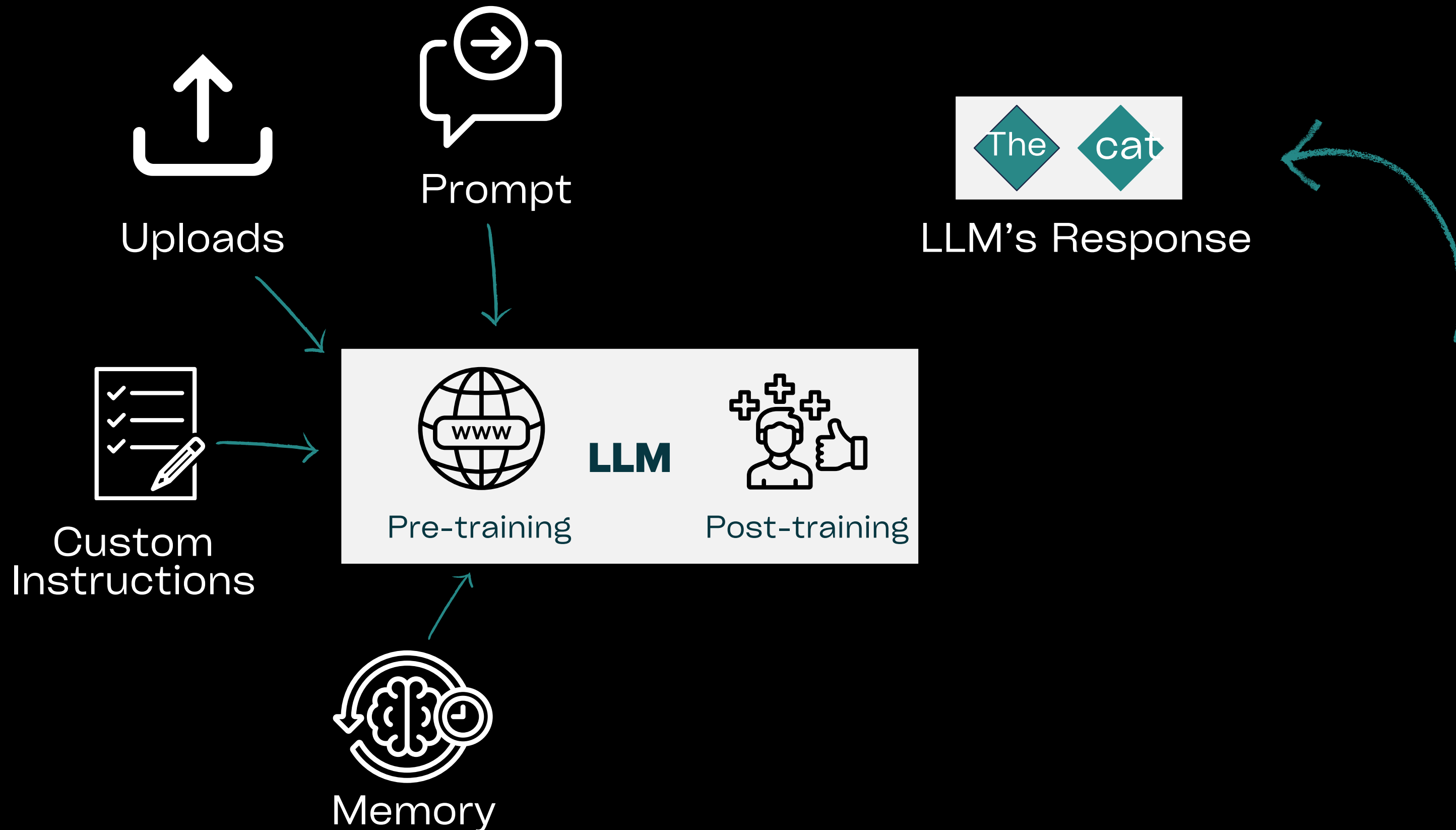
LLMs are Next Word Predictor Machines

“Tell me a story about a cat”



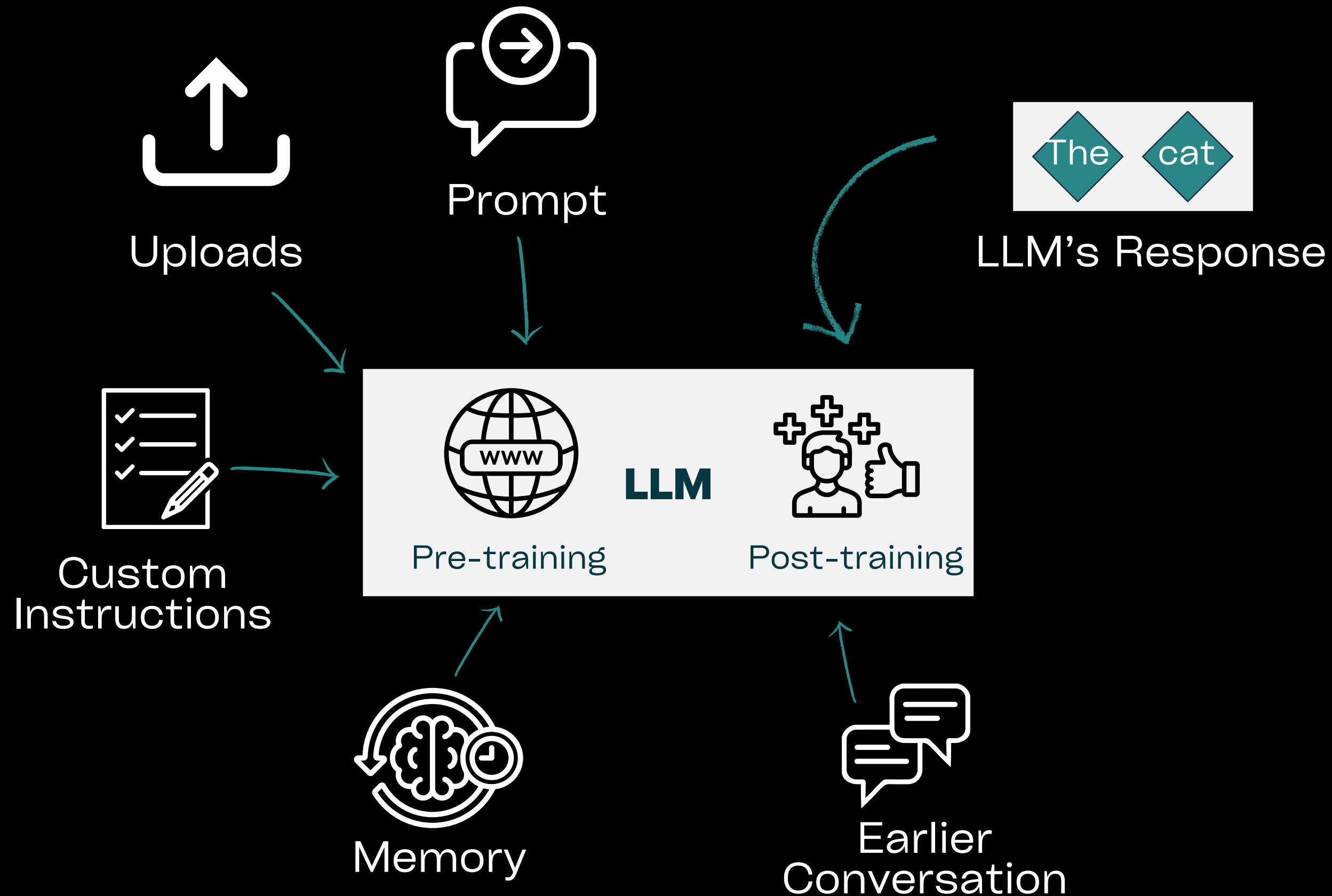
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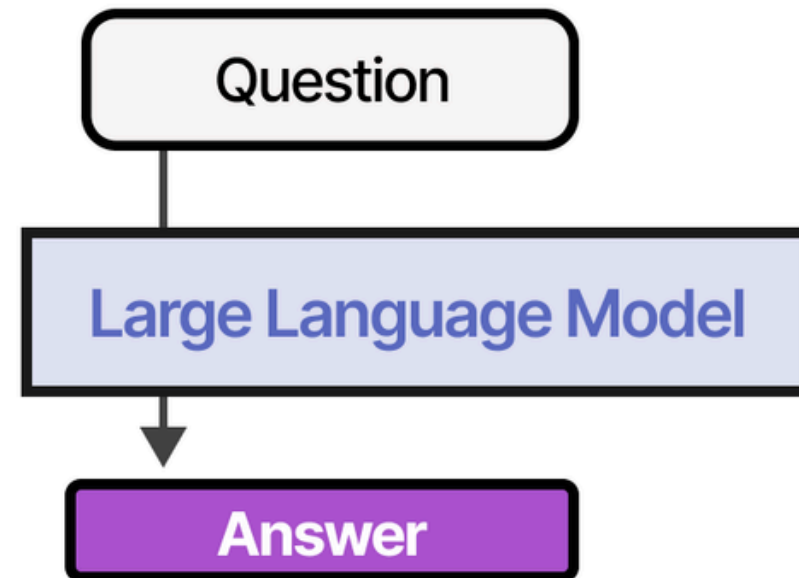
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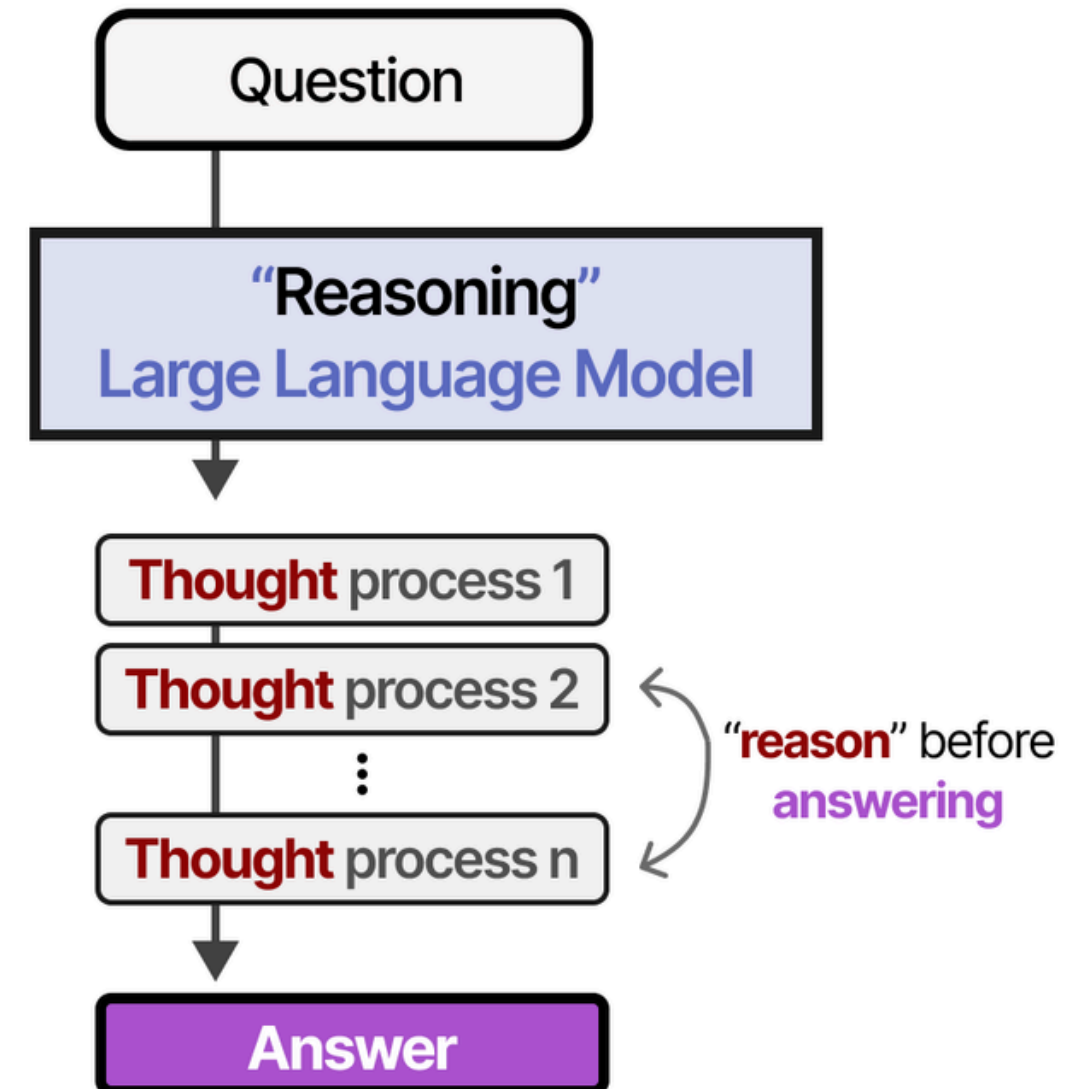


Do they think?

“Regular” LLMs



“Reasoning” LLMs



Context Engineering 101

C: Character

O: Objective

-

C: Context

R: Readability

E: Examples

A: Additions

T: Template

O: Orient

R: Rationale

C: Character —> You are a friendly travel guide who specializes in hidden gems.

O: Objective —> Suggest 3 underrated cities in Europe to visit in spring.

-

C: Context —> The reader is planning a two-week trip and prefers fewer tourists, affordable stays, and scenic spots.

R: Readability —> Keep sentences short and use plain, upbeat language.

E: Examples —> Example of tone: "Nestled in the hills, this city feels like stepping into a storybook."

A: Additions —> Include one local food or drink for each city.

T: Template —> [City Name] — [Why it's special] — [Local dish/drink]

O: Orient —> List them from least to most well-known.

R: Rationale —> The order helps the reader start with truly hidden gems and build excitement.

Which one
should I use?



deepseek



Gemini



Claude

DEMO



Next Session

- Tool Calling
- Agentic AI Sneak Peak