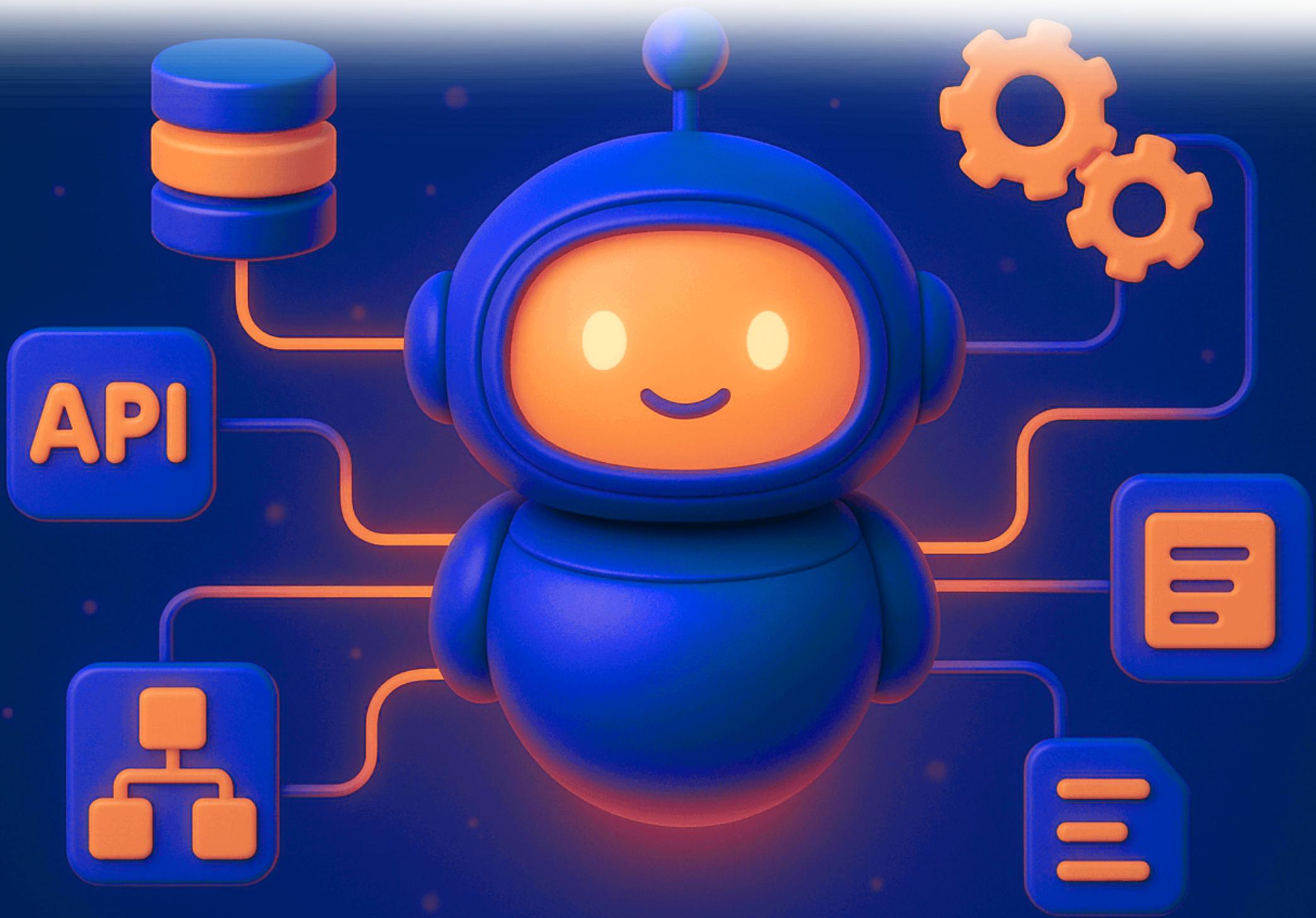




Greg Coquillo
Product Leader

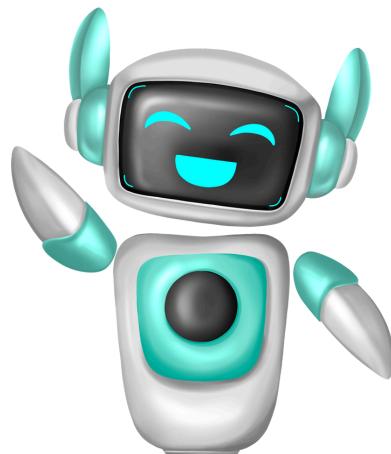
HOW TO BUILD AI AGENTS FROM SCRATCH





Greg Coquillo
Product Leader

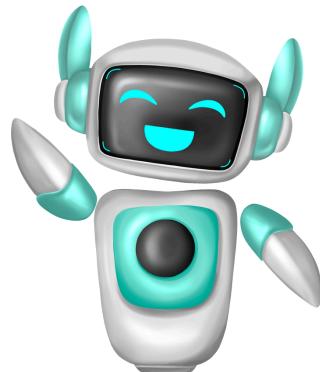
DEFINE THE AGENT'S ROLE GOAL



Agent:



What specific task will your agent perform, and what outcome should it deliver?



Who is it helping?

Identify the user or team it will assist.

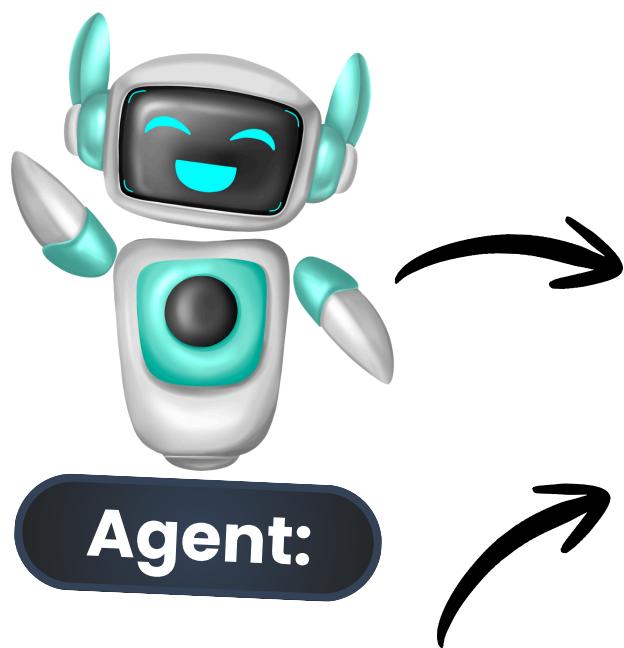
A Logistics Assistant that analyzes warehouse data, predicts inventory shortages, and recommends restocking dates.





Greg Coquillo
Product Leader

DESIGN STRUCTURED INPUT & OUTPUT



Agent:



User:

Input



Use JSON, forms, or structured prompts so the agent always receives information in a predictable format.

Output



Decide how the response should be formatted – text summaries, tables, charts, or JSON.



Avoid messy text – think like an API

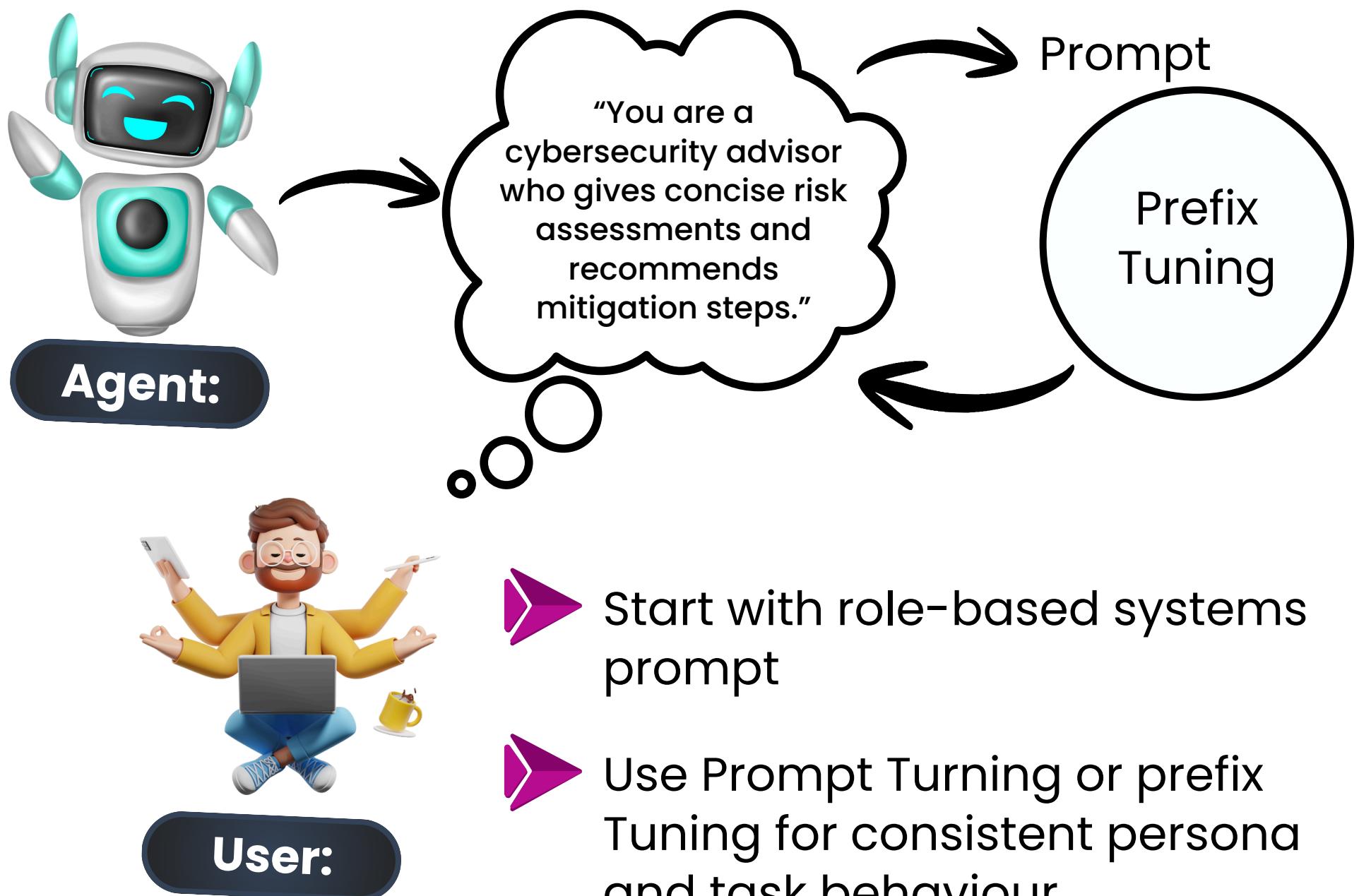
Tool: LlamaParse, LangChain Output Parsers





Greg Coquillo
Product Leader

PROMPT AND TUNE THE AGENT'S BEHAVIOUR



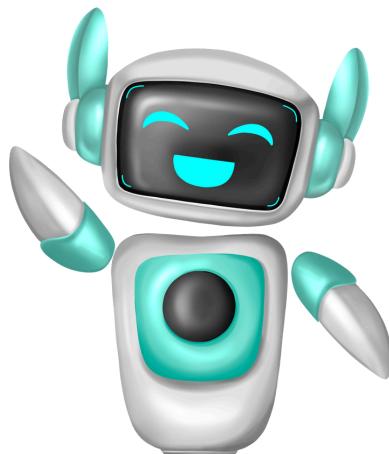
Tool: GPT-4, Claude Tuning, PromptScript





Greg Coquillo
Product Leader

ADD REASONING AND TOOL USE

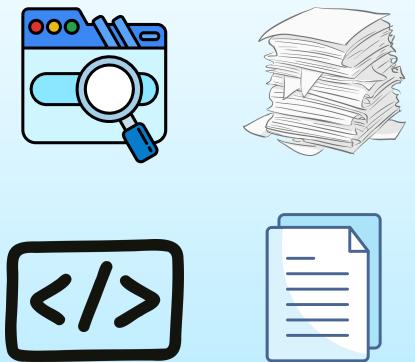


Agent:

Reasoning Frameworks

- ★ ReAct (Reasoning + Action)
- ★ Chain-of Thought

Tools



User:

- Equip wihe agent with reasoning frameworks
- Allow access the tools like web search, code interpreters. or document retireverse.

Tool: LangChain, OPEAI Tools, ReAct Frameworks

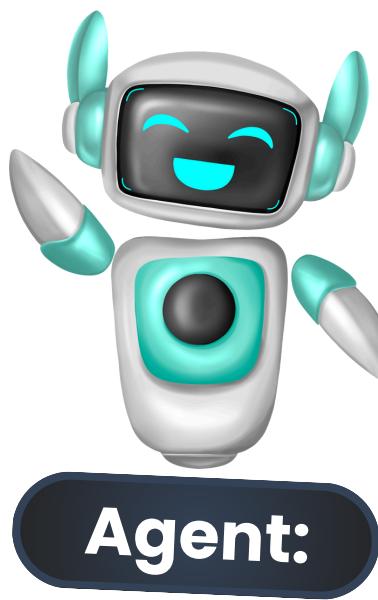




Greg Coquillo
Product Leader

STRUCTURE MULTI-AGENT LOGIC

Define specialized agents and how they collaborate.



Planner Agent

Creates a workflow

Analyst Agent

Processes data

Writer Agent

Generates documents

Reviewer Agent

Validates accuracy



User:

- Use orchestration frameworks to define agent roles.
- Create Planner, Researcher, Report agents - each with own interpreters, document input-/xpout schema.

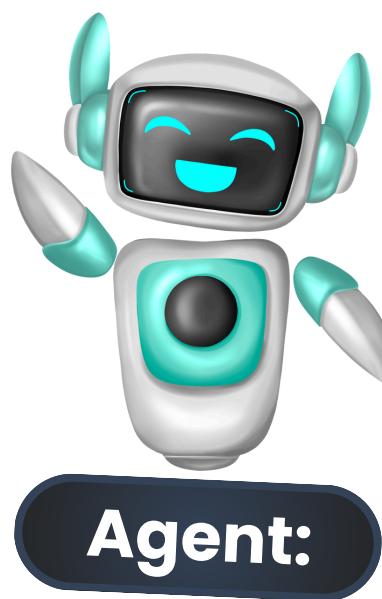
Tool: CrewAI, LangGraph, OPENai Swarm



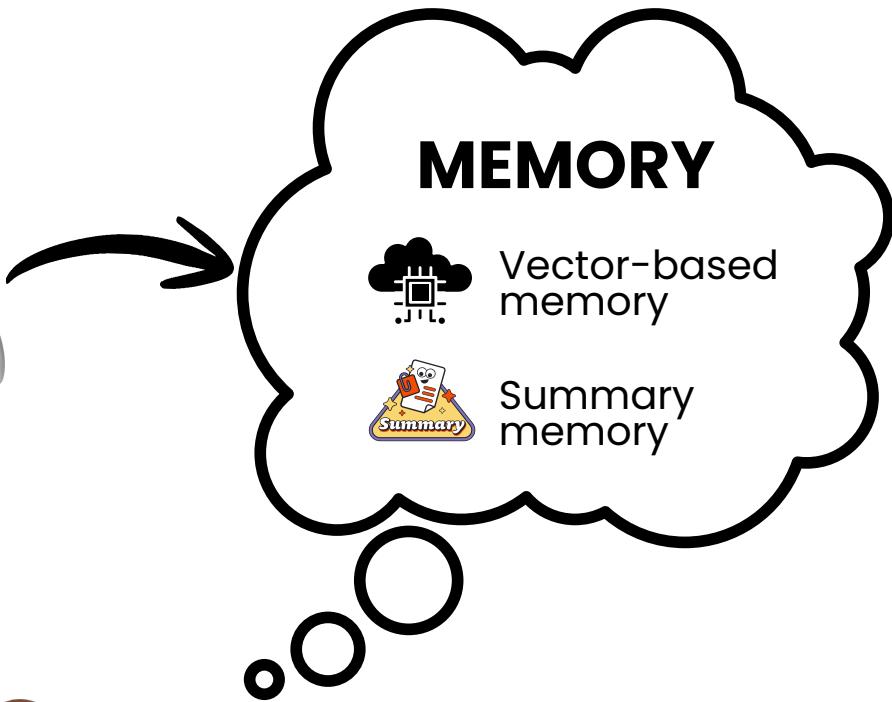


Greg Coquillo
Product Leader

GIVE YOUR AGENT MEMORY & CONTEXT CONTINUITY



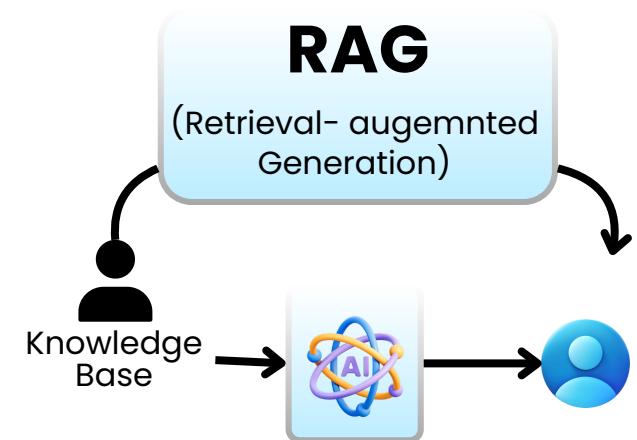
Agent:



User:



Does the agent need to recall previous interactions, tasks, or documents?



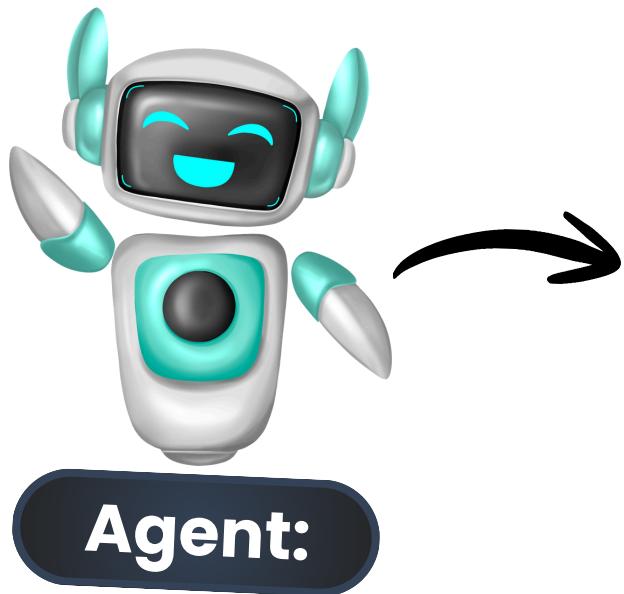
Tool: ChromaDB, FAISS, Zep, LangChain Memory





Greg Coquillo
Product Leader

ADD VOICE OR VISION CAPABILITIES



Agent Capabilities

Voice



Let the agent listen and speak naturally.

Coqui, ElevenLab

Vision



Allow the agent to interpret images, charts, screenshots, or documents.



User:



Let your agent see and speak, memory



Use conversational memory, vector-based memory.

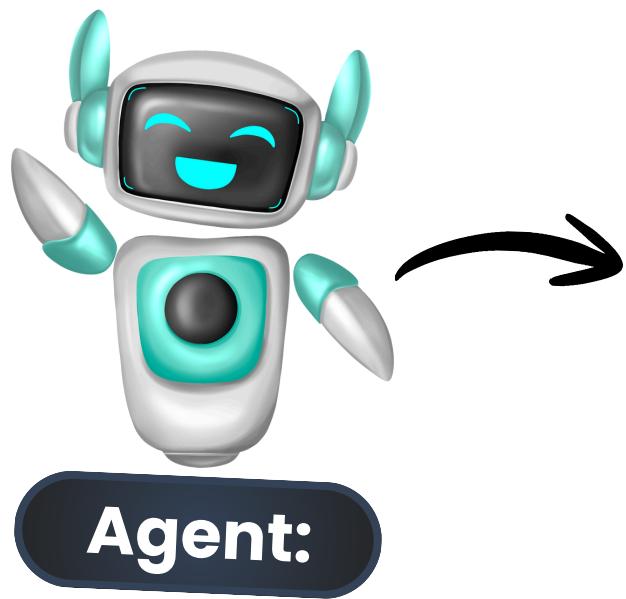
Tool: Zep, LangChaibs, GPT-O, ChromaD 2 FAISS





Greg Coquillo
Product Leader

DELIVER THE OUTPUT



Agent:

Output Formatting



Markdown

JSON



User:

- ▶ Format outputs into
MarkDown → PDF or JSON
- ▶ Output must be readable and
parsable.

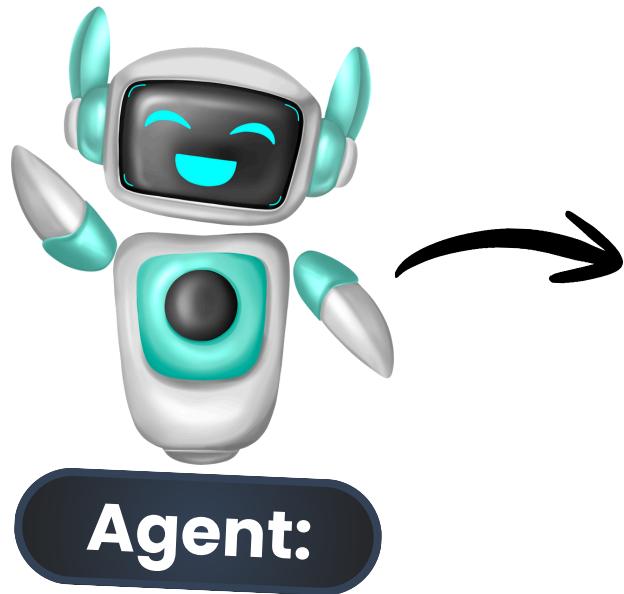
Tool: Pydantic AI, LangChain Parser





Greg Coquillo
Product Leader

WRAP IN A UI



Agent:

Output Formatting



Markdown

JSON



User:



Create a front-end



This is what turns your agent into
a product

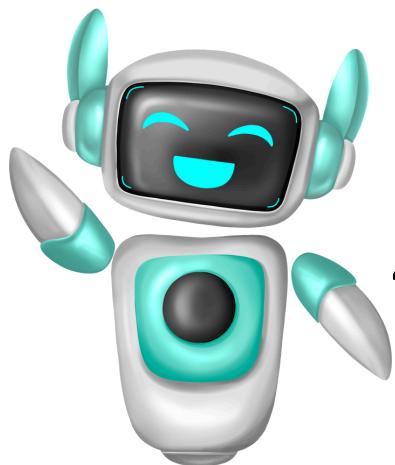
Tool: Gradio, Streamlit





Greg Coquillo
Product Leader

EVALUATE AND MONITOR



Agent:

Monitoring & Evaluation



Logs



Feedback



test prompts



User:

- ▶ Run test prompts and toolchains to check reliability.
- ▶ Use logs, benchmarks and feeback to improve over time.

Tool: MCP Logs, OPENAI Evaluation API, Custom Metrics Dashbaords.





Greg Coquillo
Product Leader