Democratizing AI: How to Build Intelligent Agents Without Writing Code

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Agenda

- Intro to AI Agents

- AI Agent Types

- No Code AI Agent Tools

- LangFlow

Is ChatGPT an LLM or an Agent?
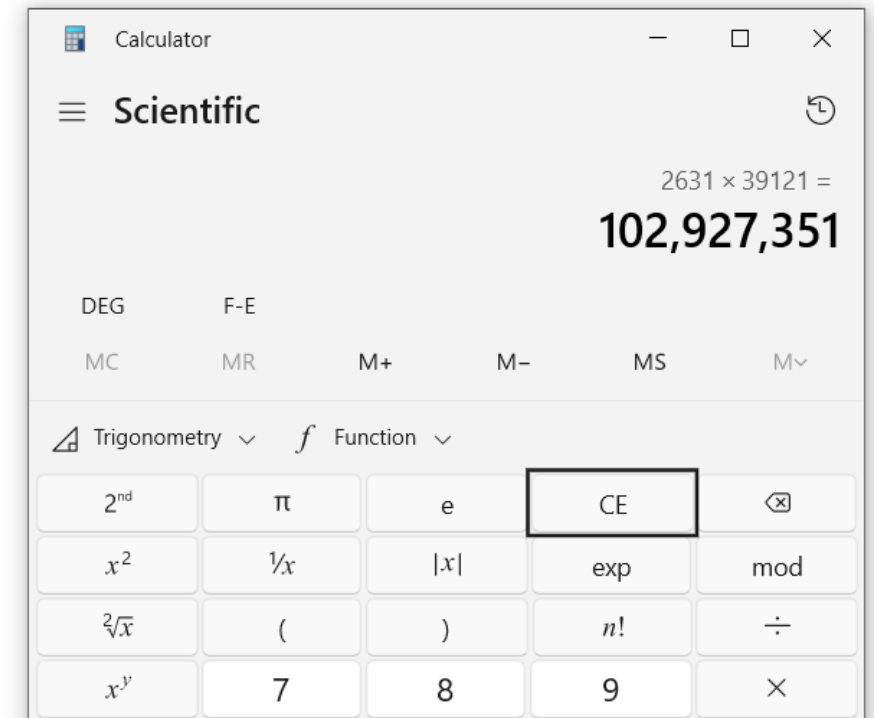
ChatGPT Back in the Day!

ChatGPT 3.5 ⌄

You
What is the result of 26 multiplied by 25?
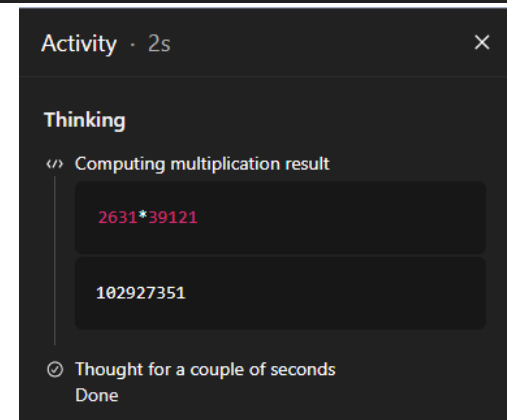
ChatGPT
26 multiplied by 25 equals 650.

You
What is the result of 2631 multiplied by 39121?

ChatGPT
The result of 2631 multiplied by 39121 is 103,034,151.

Calculator — ☐ ✕

☰ **Scientific**

$2631 \times 39121 =$

102,927,351

DEG   F-E

MC   MR   M+   M−   MS   M⌄

◢ Trigonometry ⌄ f Function ⌄

2nd	π	e	CE	⌫
x^2	$\frac{1}{x}$	$|x|$	exp	mod
$\sqrt[2]{x}$	(	)	$n!$	÷
x^y	7	8	9	×

ChatGPT 5 – In Action
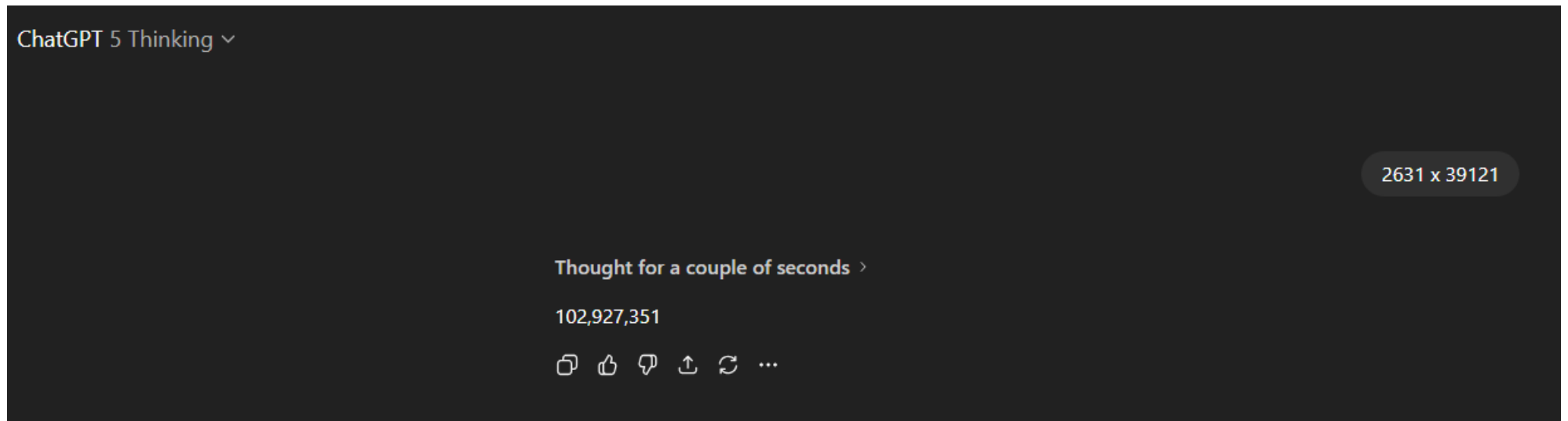
Other LLM Limitations

LLMs are not perfect! Keep in mind the following limitations when using LLMs:

- **Knowledge Cutoff:** LLMs are limited to the training date.

- **Inability to take actions:** Large language models are not equipped to execute interactive tasks such as searches, calculations, or data retrievals, which considerably restricts their capabilities.

AI Agent Predictions

- "By 2028, at least one-third of business decisions will be made semi-autonomously or autonomously with the help of AI agents, up from less than 1% today", Gartner.

- "By 2028, 40% of services (primarily B2C but increasingly B2B) will be AI-augmented, with potential premiums for human-driven options", Gartner.

- "Companies using AI agents have seen a more than 40% increase in case resolution rates compared to traditional bots", Datagrid.

But .. What are AI Agents?

AI Agents combine two aspects:

1. Intelligent entity capable of active decision-making and continuous learning.

2. Automated application or software designed to perform tasks on behalf of a user.

Agent Types

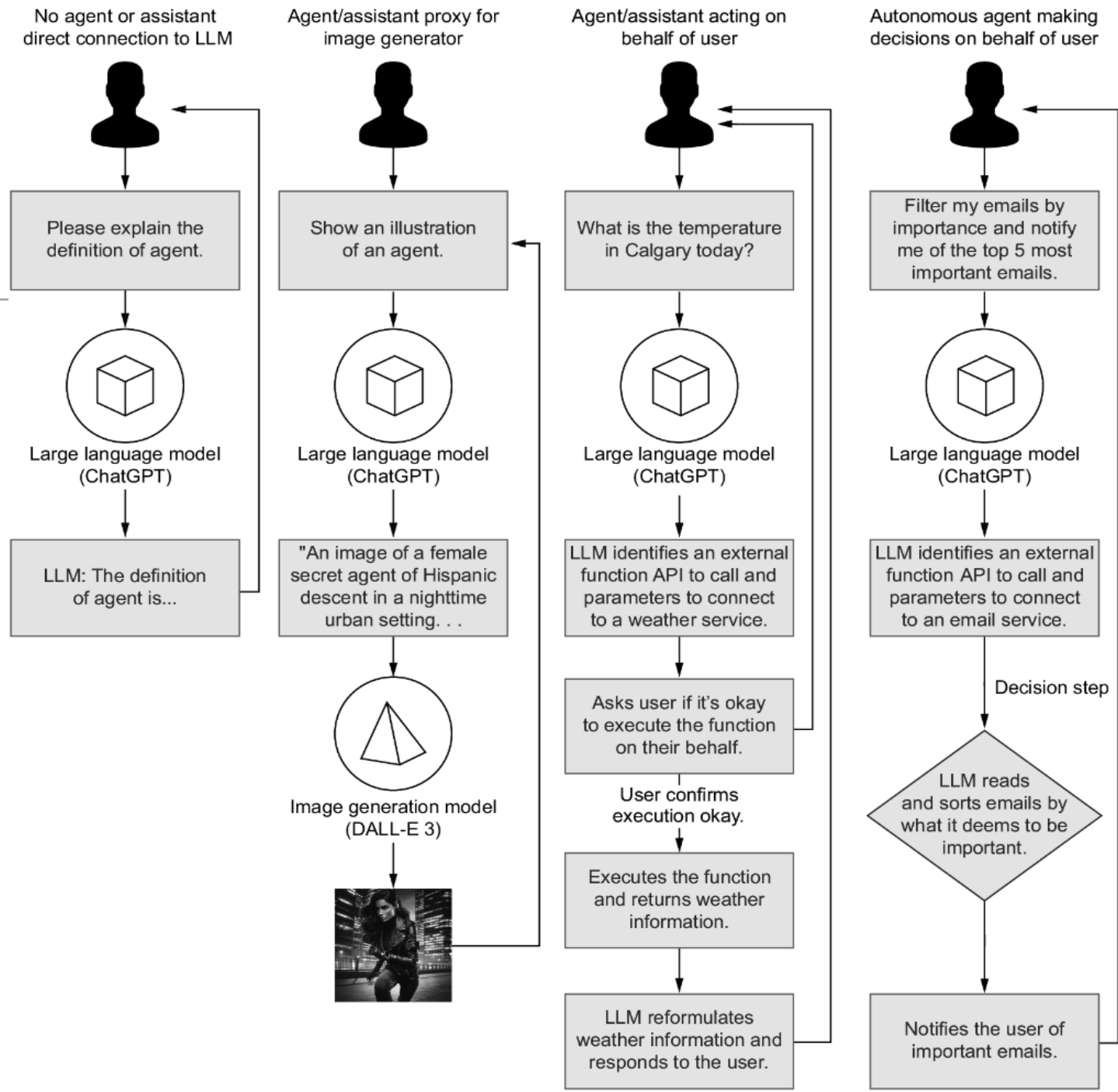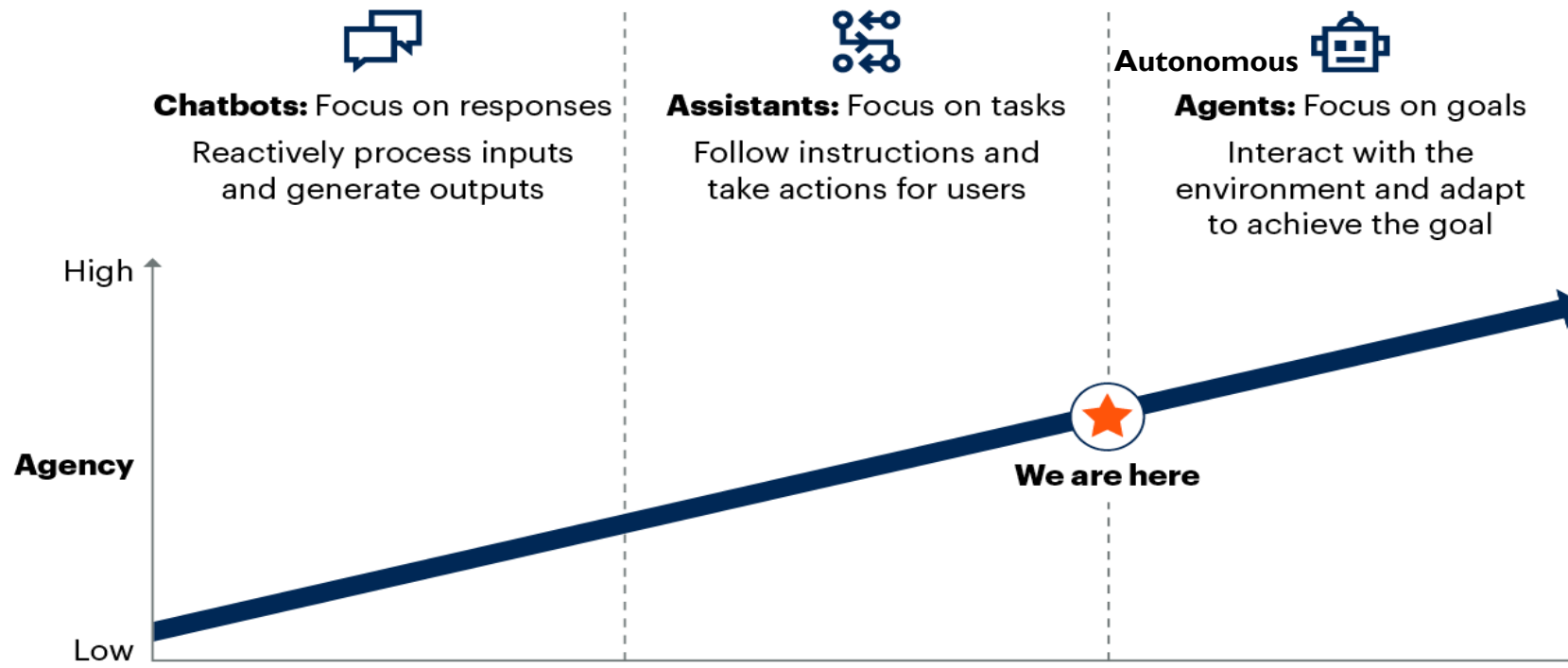**No agent or assistant direct connection to LLM**

User → Please explain the definition of agent. → Large language model (ChatGPT) → LLM: The definition of agent is...

Agent/assistant proxy for image generator

User → Show an illustration of an agent. → Large language model (ChatGPT) → "An image of a female secret agent of Hispanic descent in a nighttime urban setting. . ." → Image generation model (DALL-E 3)

Agent/assistant acting on behalf of user

User → What is the temperature in Calgary today? → Large language model (ChatGPT) → LLM identifies an external function API to call and parameters to connect to a weather service. → Asks user if it's okay to execute the function on their behalf. → User confirms execution okay. → Executes the function and returns weather information. → LLM reformulates weather information and responds to the user.

Autonomous agent making decisions on behalf of user

User → Filter my emails by importance and notify me of the top 5 most important emails. → Large language model (ChatGPT) → LLM identifies an external function API to call and parameters to connect to an email service. → Decision step → LLM reads and sorts emails by what it deems to be important. → Notifies the user of important emails.

Current State of Enterprise-AI Agents

Chatbots: Focus on responses

Reactively process inputs and generate outputs

Assistants: Focus on tasks

Follow instructions and take actions for users

Autonomous

Agents: Focus on goals

Interact with the environment and adapt to achieve the goal

High

Agency

Low

We are here

Source: Gartner

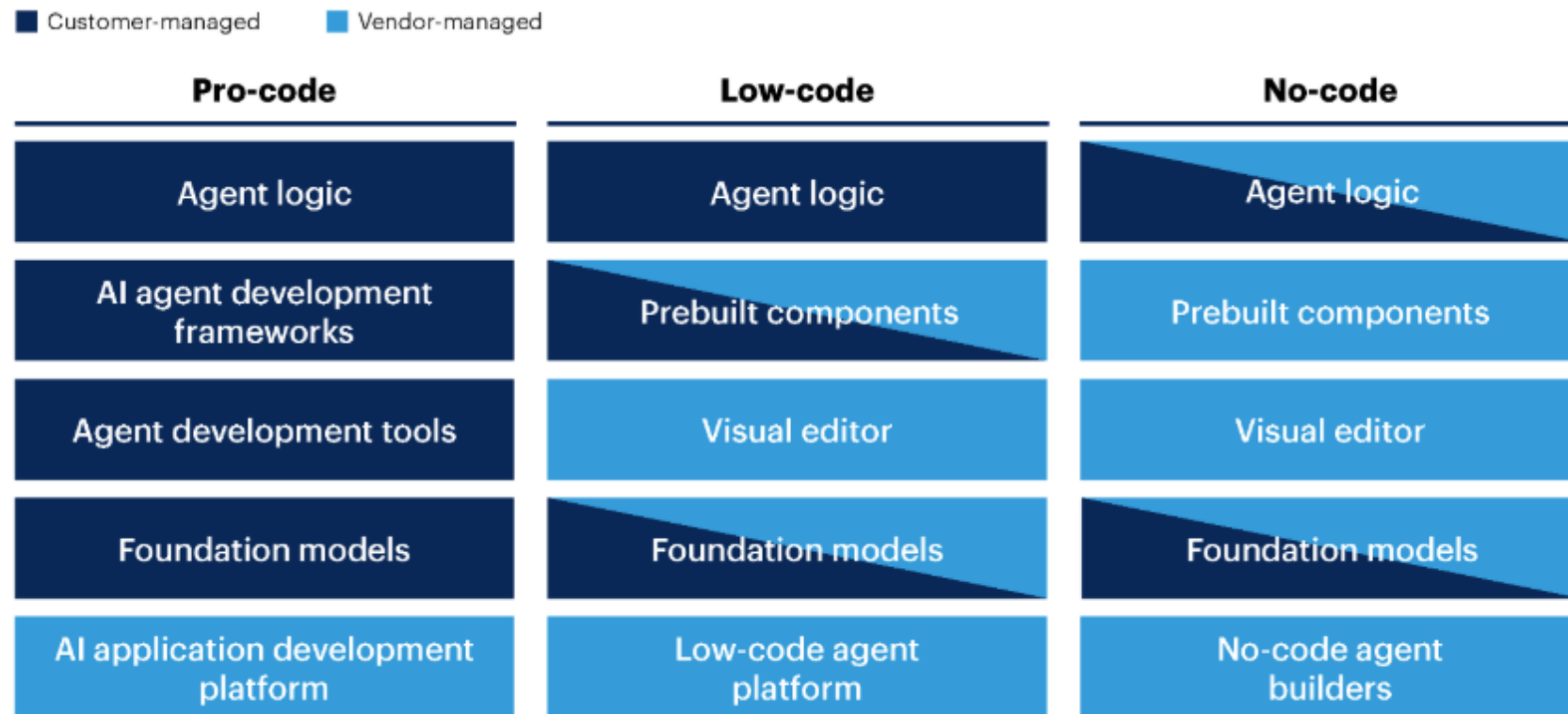Carnegie Mellon University

Anatomy of AI Agents
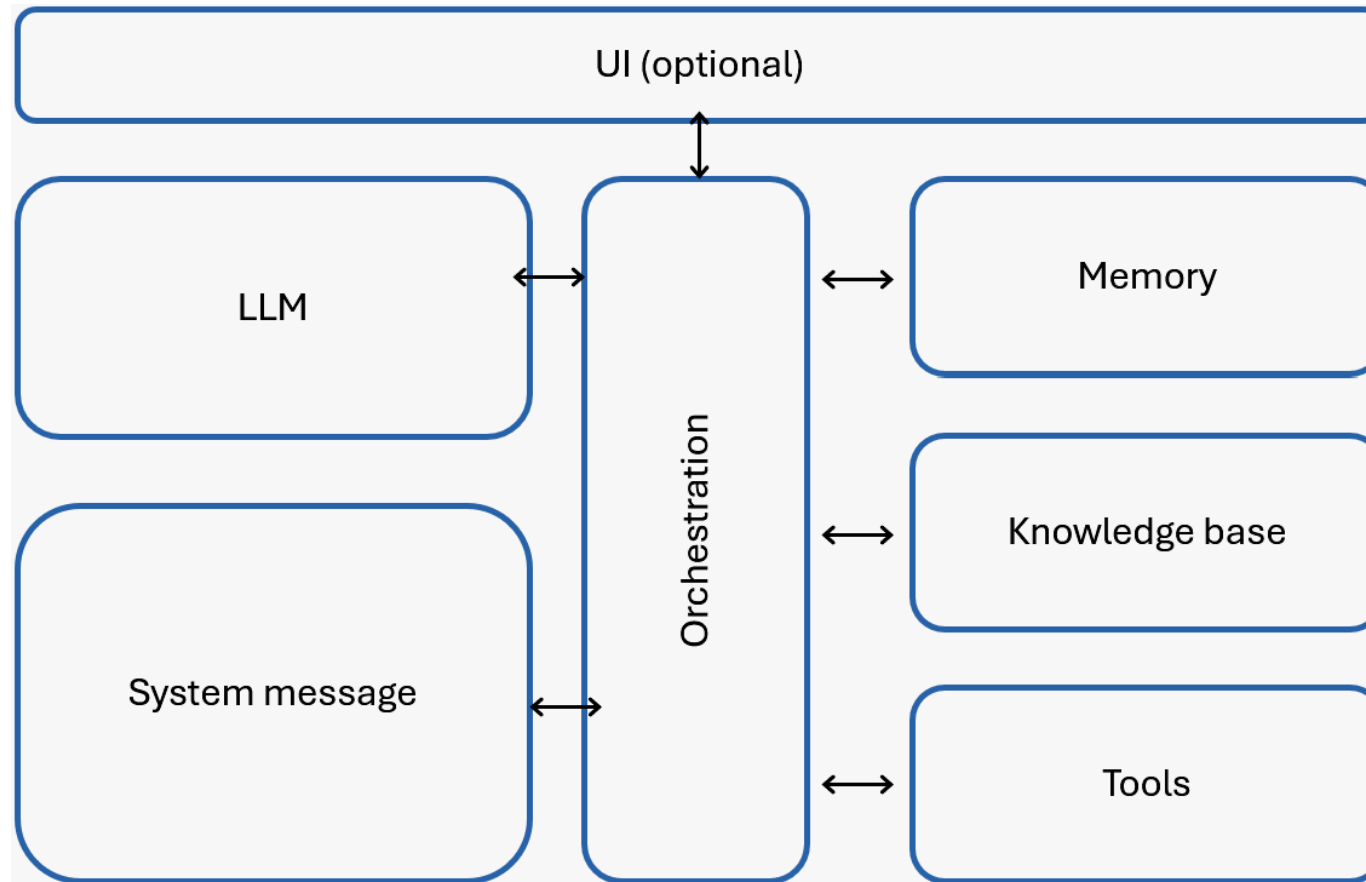
Building AI Agents – Tech Stack Options

Source: Gartner

No-Code Agent Builders (NCAB) – Tech Options

Platform	Customer Support	Internal Automation	Sales/Marketing	Data Analysis/BI	Broad 3rd-Party Integrations	Self-Host Option	True No-Code for Non-Tech	Open-Source	Strong Enterprise Compliance
Microsoft Copilot Studio	✔	✔	✔	✔	✔	✘	✔*	✘	✔
Salesforce Agentforce	✔	✔	✔	✔	✘*	✘	✔	✘	✔
Google Vertex AI (Gen App Builder)	✔	✔	✔	✔	✘	✘	✘	✘	✔
IBM watsonx.ai (Agent Lab)	✔	✔	✔	✔	✘	✔	✘	✘	✔
Relevance AI	✔	✔	✔	✔	✔	✘	✔	✘	✔
n8n	✔	✔	✔	✔	✔	✔	✘	✔	✘
Stack AI	✔	✔	✔	✔	✔	✘	✔	✘	✔
Langflow	✔	✔	✔	✔	✔	✔	✔	✔	AstraDB Only

Intro to LangFlow

- Open-source No-code Agent Builder.

- Designed for building and managing language model workflows via Drag-and-drop interface.

- Visual interface for creating AI-driven applications with the ability to leverage pre-built templates and components

- Integrates with various language models and tools (e.g., OpenAI, Vertex AI, HuggingFace, Web browser UI)

- Sign-up to use it via this URL: https://www.datastax.com/

Demo

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AI Agent Example

- Let's Build an AI Agent that can help you practice interview questions for a target job based on job title, description, company and interviewer – if applicable-.

Step 1: Input Processing

Collect from the user the target job title, job description, company name and interviewer's name - if provided-.

Step 2': Task Planning

Agent breaks down the interview coaching process into manageable steps:
Search for job title and description in target company
Search for Interviewer's Name - if provided-
Find 10 questions for the interview process
Ask the user if interested in practicing the interview questions
Ask questions
Grade User Response
Provide Feedback

Step 3: Reasoning Engine

Agent evaluates the type of questions needed to be asked and future user response evaluation

Step 4': Execution Engine

Agent searches for questions to be asked in the interview along with implementing a strategy for grading user responses

Step 4: Tool Integration

Agent integrates with Exa Search API to get the matching job description

Step 5: Response Generation

Agent asks the questions and continues with asking the user if interested in practicing the questions

AI Agent Execution

- Import the Interview_Prep_AI_Agent.json found on GitHub

- Generate Exa Search API Key: https://exa.ai/

- Update the Exa Search API Key and Google Generative AI Key

- Start using the agent!

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Questions
&
Thank You!

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