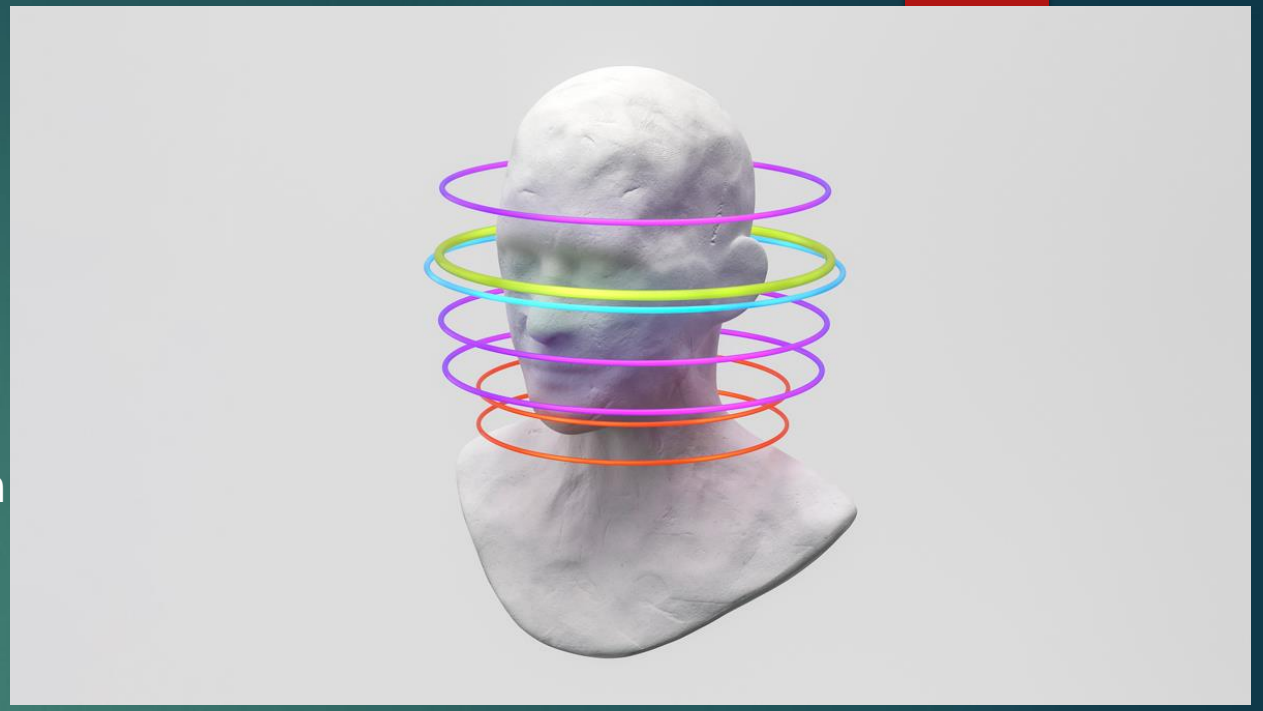
AGENTIC AI



Agentic AI refers to AI systems designed to behave like **autonomous agents**. These agents can **perceive**, **reason**, **plan**, **act**, and **adapt** in pursuit of goals, often in dynamic environments — *with minimal or no human intervention once deployed.*

It doesn't just give answers like a chatbot, it can:

- Understand tasks
- Make decisions
- Use tools or apps to get things done
- And keep getting better over time by learning from what it does

In short, Agentic AI is an AI that can work on its own to solve problems, complete tasks, and improve itself over time.

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HOW DOES AGENTIC AI WORK?

Agentic AI works like a smart helper that follows **four main steps** to solve problems. Here's how:

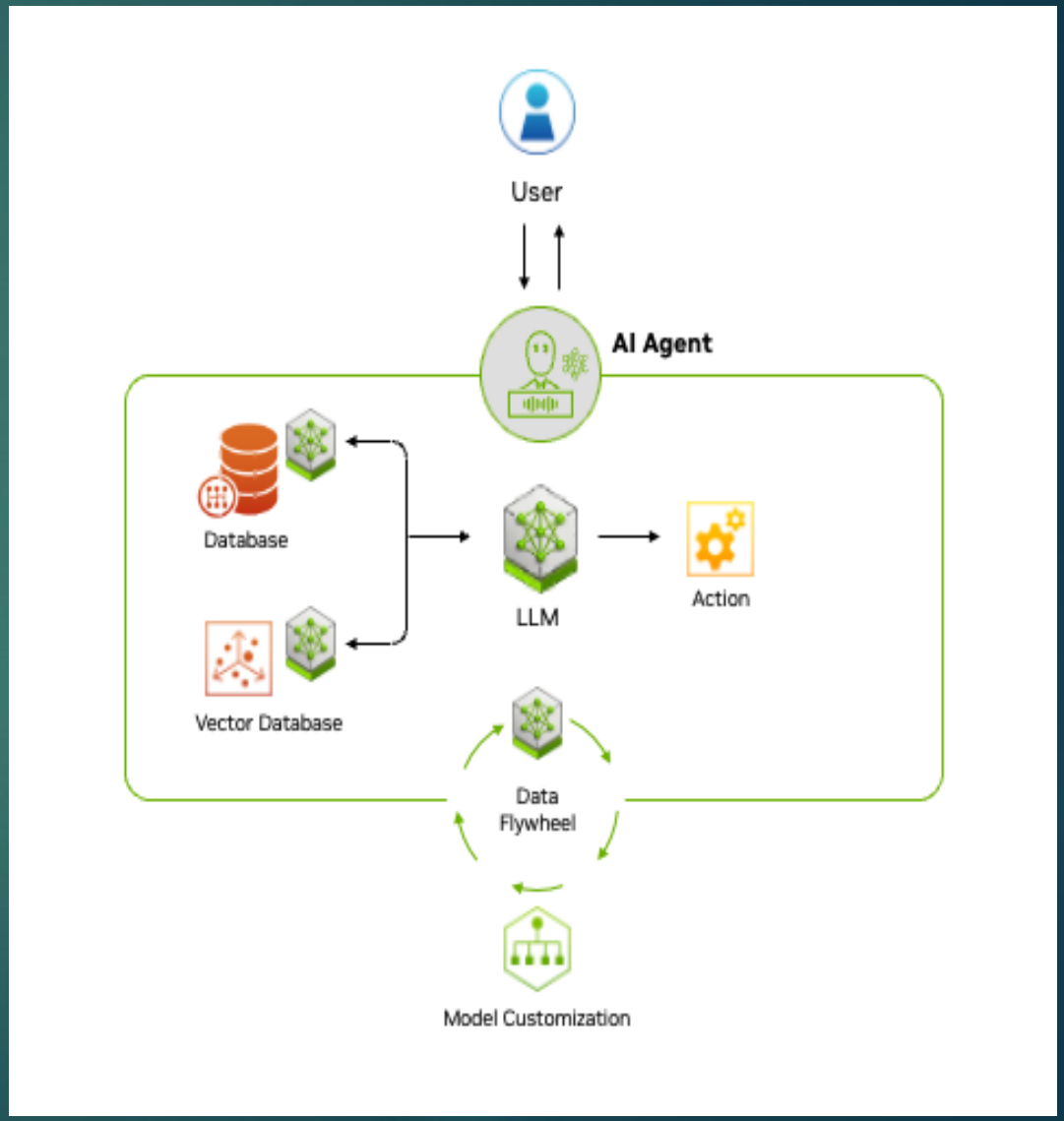
1. Perceive (Understand What's Happening)

The AI agent collects and looks at information from different places — like websites, sensors, or databases.

It tries to *understand what's important*, such as:

- What objects are in front of it
- What people are saying
- What data is useful for the task

Basically, it's like looking around and figuring out what's going on.



2. Reason (Think and Make a Plan)

A powerful language model (like ChatGPT) works as the "*brain*" of the system.
It:

- Understands the task
- Makes a plan
- Talks to other specialized models (for writing, recommending, analyzing, etc.)

It can also look into company data (using something called RAG — Retrieval-Augmented Generation) to give more accurate answers.

3. Act (Do the Task)

The AI doesn't just think — it **takes action**. It can:

- Send emails
- Update databases
- Generate reports
- Or even talk to customers

It uses software tools (called APIs) to do these things — like how apps talk to each other.
There are also **rules** to keep it safe.
For example, if it's a customer service bot, it might only be allowed to approve small refunds. Bigger ones must go to a human.

4. Learn (Get Smarter Over Time)

After doing a task, the AI **learns from what happened**.
It uses feedback and results to:

- Improve itself
- Avoid mistakes next time
- Make better decisions in the future

This learning loop is called a **"data flywheel"** — the more the AI is used, the smarter and more helpful it becomes.

Core Components of Agentic AI

1. Autonomous Decision-Making

Uses **Reinforcement Learning (RL), LLM-based reasoning, or symbolic AI** to make choices.
Example: An AI stock trader that buys/sells based on market trends.

2. Memory & State Management

Maintains **short-term (working memory)** and **long-term (vector DBs, knowledge graphs)** memory.
Example: ChatGPT remembering conversation history.

3. Tool Use (Function Calling)

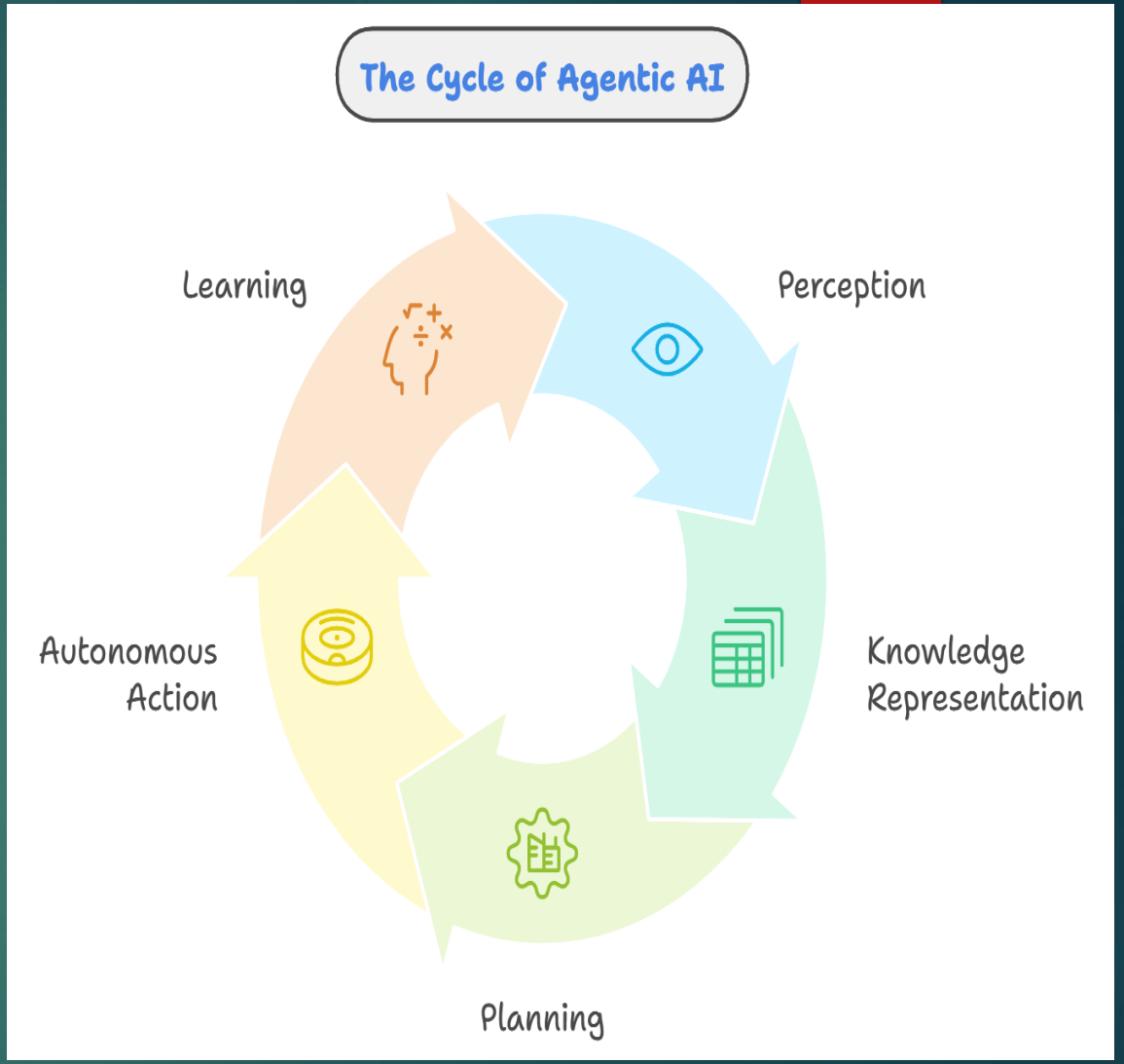
Can **call APIs, execute code, or control devices** (e.g., OpenAI Function Calling).
Example: An AI booking flights via an API.

4. Multi-Agent Systems

Multiple AI agents collaborate (e.g., one researches, one writes, one validates).
Example: AutoGPT's task decomposition.

5. Human-in-the-Loop (HITL) Safeguards

Asks for human approval on critical decisions.
Example: Medical AI confirming diagnoses with a doctor.



Agentic AI in Action

Agentic AI is transforming industries by automating tasks, enhancing efficiency, and improving decision-making. Key applications include:

1. Customer Service

AI agents handle routine queries, reduce response times, and enable lifelike "digital humans" for real-time interactions.

2. Content Creation

Generates high-quality, personalized marketing content, saving time and boosting engagement.

3. Software Engineering

Automates repetitive coding tasks, increasing developer productivity.

4. Healthcare

Analyzes medical data, assists in diagnosis, automates admin tasks, and provides 24/7 patient support.

5. Video Analytics

Processes live/archived footage for tasks like anomaly detection, quality control, and incident reporting.

PROS AND CONS OF AGENTIC AI

PROS

- Autonomy
- Speed
- Precision
- Multitasking
- Continuous Learning

CONS

- Safety Risks
- Job Displacement
- Explainability Issues
- High Development Cost
- Regulatory Uncertainty

THANK YOU