

AI Agents 101

Building Your Foundation in Autonomous Workflows

November 05, 2025

Zaki Medina

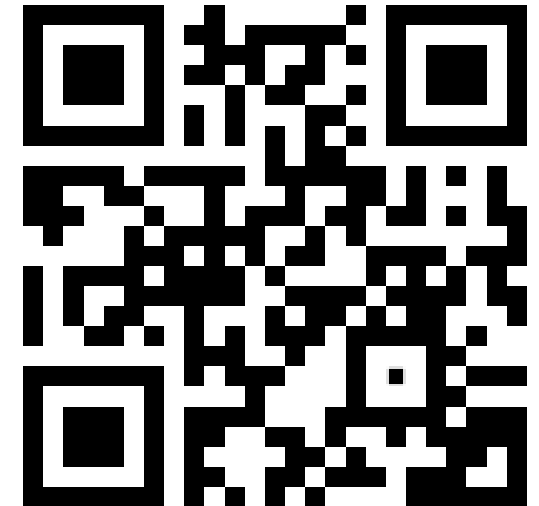
GENERATOR



Type prompt here...

Zaki Medina

- Serial Entrepreneur, Problem Solver & Curious Cat
- 17+ years in the game
- Currently
 - CTO and COO at REVIVE Healthcare Group (Healthcare, Supply Chain)
 - CTO and CPO at Muva Health (Healthcare, Marketplace)
- 5x Fortune 100 companies
- 2x Mid Market
- 3x Exits (2x in Healthcare)
- 4x Learnings
- \$942M+ net NEW revenues
- \$8M+ raised in fundraising

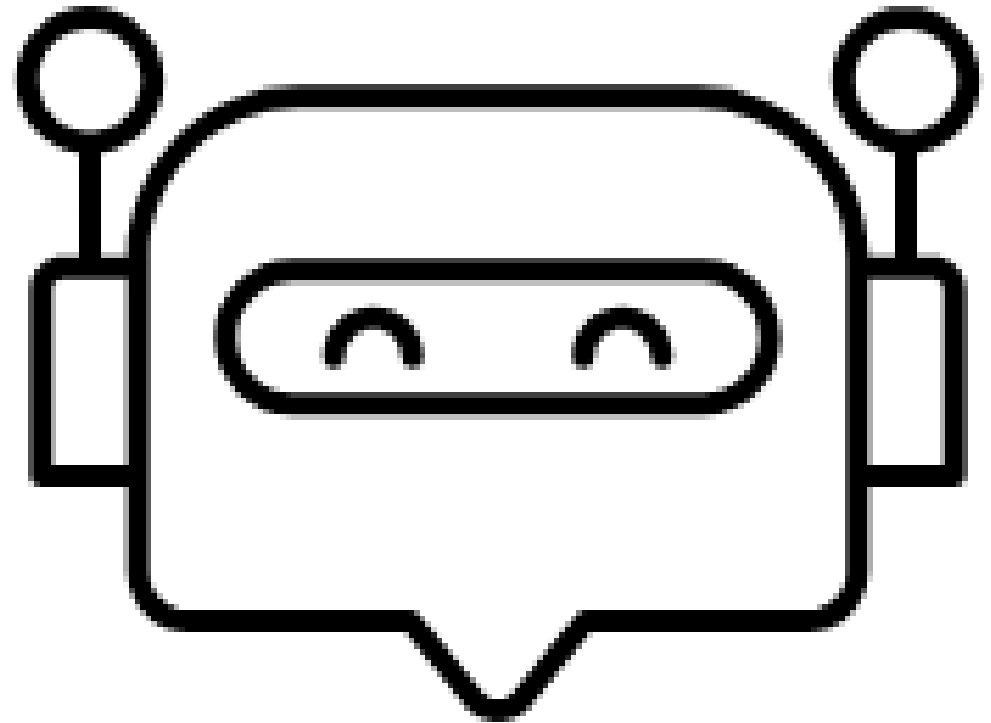


zakimedina8@gmail.com

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Agenda

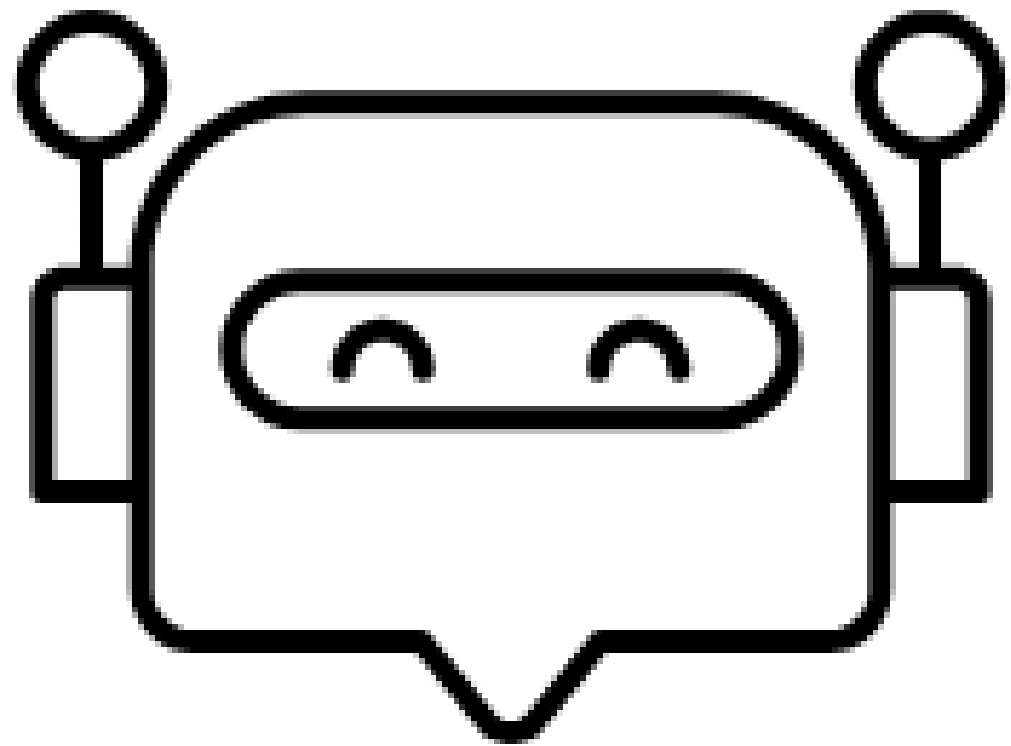
1. Intro to AI Agents
2. Demystifying AI Agents
3. Real World Use Cases & Tools
4. Getting Started Strategy





Part 1

Intro to AI Agents



Intro to AI Agents



Cut through the Jargon and Focus on the Practical applications of Agentic AI on your Business



Today's session will equip you to understand, evaluate and implement AI Agents in your organization, regardless of your technical background

What are AI Agents?

Normal ChatGPT Interaction
(like a Q&A assistant)

Summarize this customer email

Here is the Summary

**REACTIVE &
COMMAND-BASED**

AI Agent
(autonomous software that takes action)

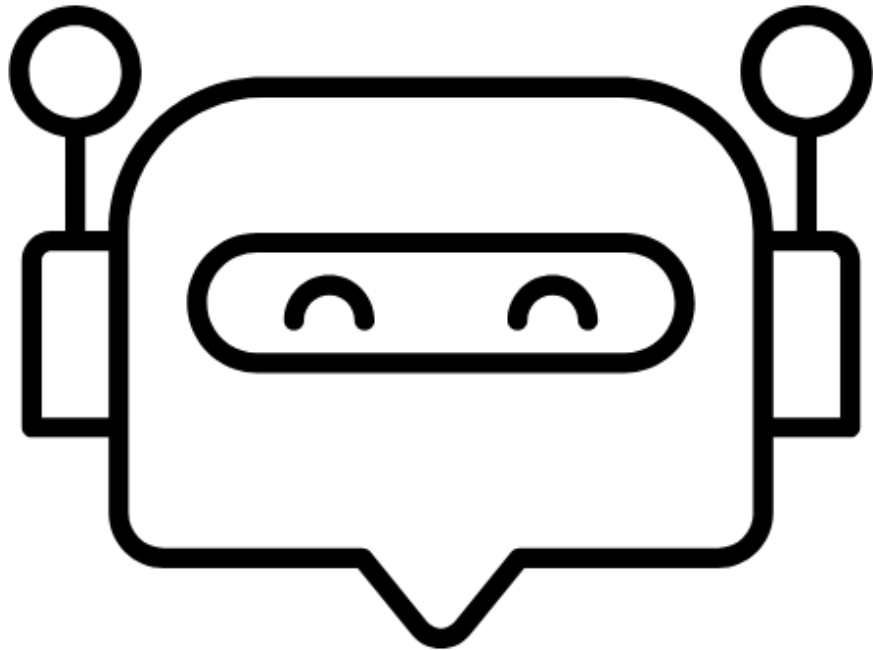
Handle customer emails for me



- Logs into inbox
- Reads messages
- Drafts replies

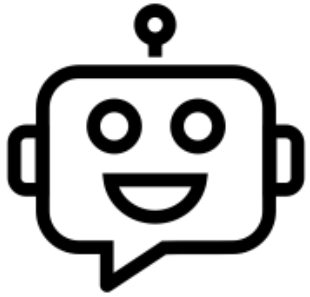
**PROACTIVE &
AUTONOMOUS**

Latest Definition of an AI Agent?



An **AI Agent** is a software program that uses an **LLM** to **achieve its specific goal(s)** by observing its environment and iteratively **acting upon it** using the **tools at its disposal**.

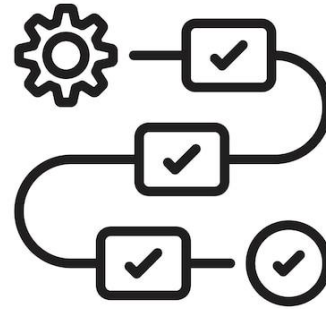
Comparison of the World before AI Agents



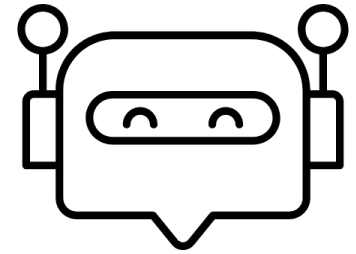
Chatbots



RPA



AI Workflows

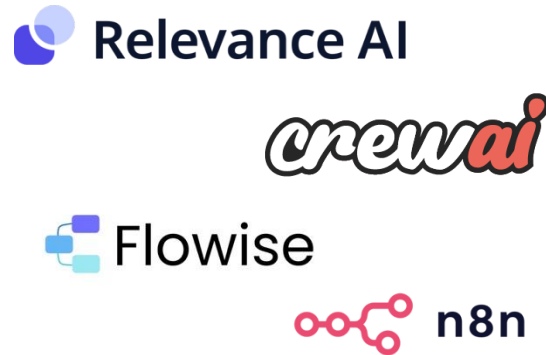


AI Agents

Popular Examples of AI Agents



**GPT-Powered
Assistants**



**Low Code AI Agent
Platforms**



**Industry-specific
Agents
e.g. Salesforce
Einstein**

Key Concepts of AI Agents



Autonomy



Reasoning



Tool use



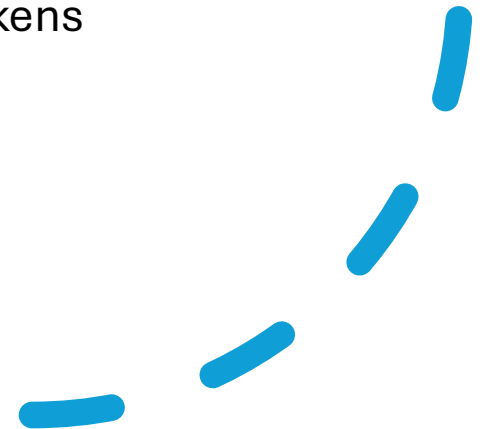
Goal Setting

Comparison: LLMs vs. AI Agents

Feature	LLMs (Passive AI)	AI Agents (Agentic AI)
Interaction Model	Prompt-response	Goal-directed, continuous reasoning
Initiative	Waits for user input	Can initiate actions proactively
Task Complexity	Handles single-turn tasks	Handles multi-step, multi-turn tasks
Memory	Typically, stateless (no memory)	Stateful with short-term or long-term memory
Use Case Example	Summarize an article	Research a topic, summarize multiple sources, draft and send an email
Learning & Adaptation	Does not learn from past prompts	Can adapt over time with feedback or memory
Autonomy	Fully dependent on user interaction	Capable of autonomous decision-making

Pricing in Gen AI is based on Tokens ... but what are they?

- **What Are Tokens?**
 - **Tokens** are the building blocks of language for AI models — they represent pieces of words.
- Roughly:
 - **1 token $\approx$ 4 characters** or **$\sim 3/4$ of a word.**
- Example:
 - “Store retail analytics” $\rightarrow$ 3 tokens
 - “AI helps customers personalize offers” $\rightarrow$ 7 tokens



How Token-based Pricing Works

Gen AI platforms (like OpenAI or Anthropic) charge per 1,000 tokens processed:

- Input tokens = what the user asks (prompt)
- Output tokens = what the AI responds with

Token Type	Price per 1,000 tokens for GPT-4-turbo
Input	\$0.01
Output	\$0.03

Token-Based vs. Traditional Pricing



Aspect	Token-Based (AI)	Traditional SaaS Pricing
Unit of Cost	Per token (input + output)	Per user or per month
Flexibility	Scales with actual language use	Fixed or tiered
Transparency	Easy to audit via token counts	Harder to link usage to value
Optimization	Prompt design can cut cost	No cost control via usage tuning

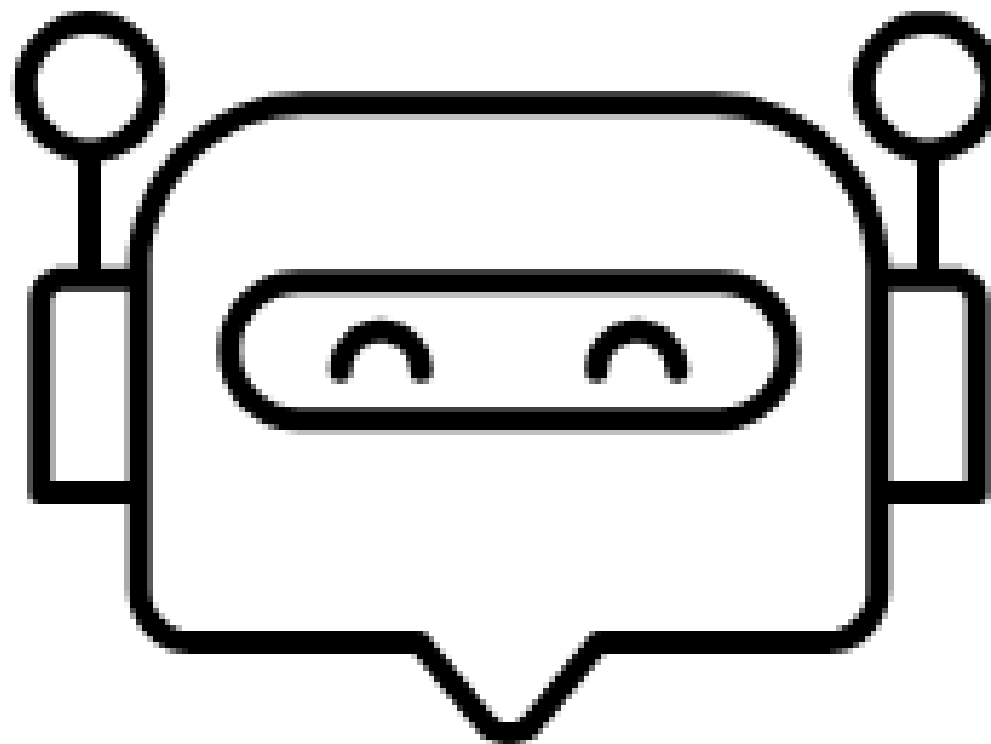
Enterprise Use Case – Token Calculation

- **Scenario:**
 - ACME Inc. utilizes a Gen AI-powered chatbot to assist suppliers, partners, and customers with product education and compliance-related FAQs.
 - Average **input prompt**: 150 tokens
(“What item would solve X for me?”)
 - Average **output** (AI response): 350 tokens
(Detailed answer with item with datasheet information, availability and lead times)
- **Cost Calculation (per query):**
 - $(150 \times \$0.01 / 1,000) + (350 \times \$0.03 / 1,000) = \textbf{\$0.012 per interaction}$
- **Monthly Estimate:**
 - 20,000 customer interactions
→ $20,000 \times \$0.012 = \textbf{\$240/month}$



Part 2

Demystifying AI Agents



Demystifying AI Agents



NOW THAT WE UNDERSTAND WHAT AI AGENTS ARE,
LET'S EXPLORE HOW THEY WORK UNDER THE HOOD
AND EXAMINE THEIR KEY COMPONENTS.

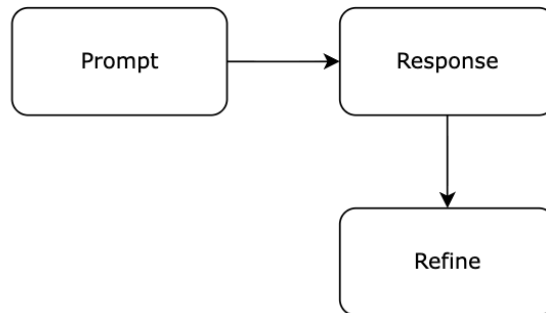


THIS SECTION WILL GIVE YOU INSIGHT INTO THE
BUILDING BLOCKS THAT ENABLE AGENTS TO
FUNCTION AUTONOMOUSLY.

LLMs to Agents

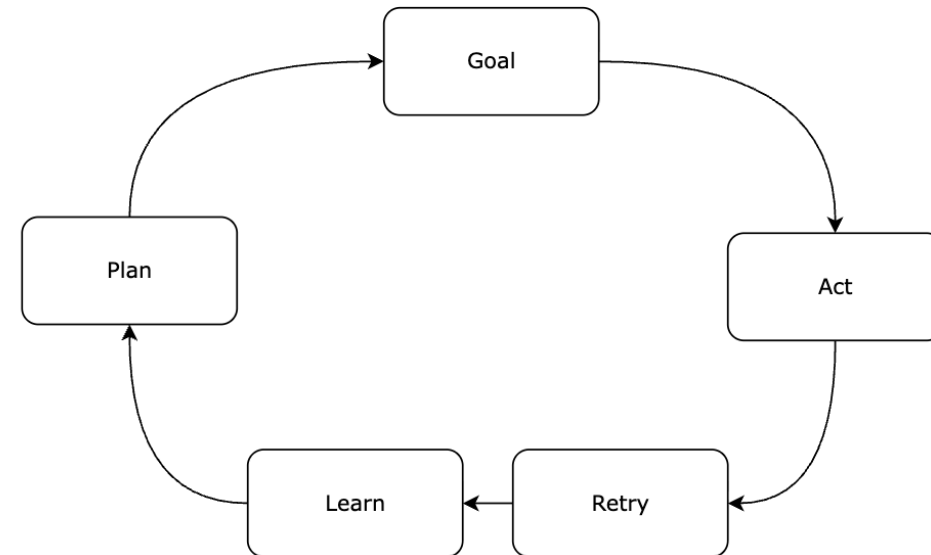
How LLMs are used

Prompt-based

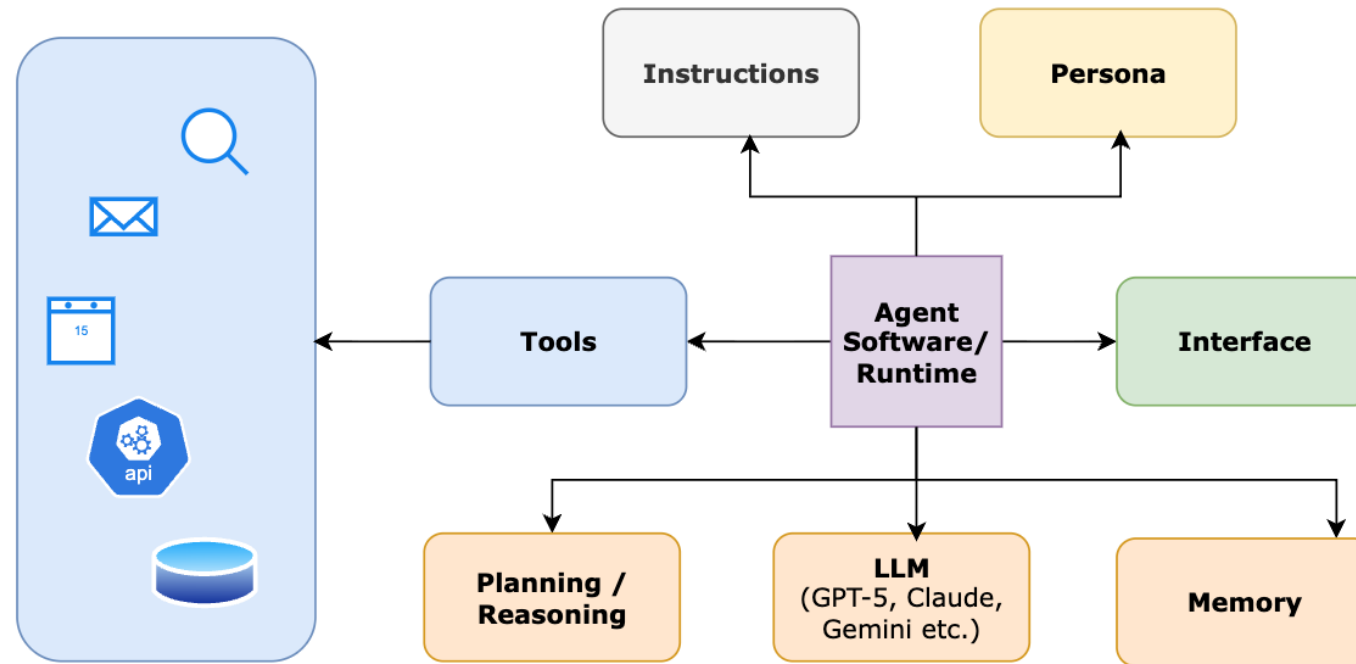


How LLMs become Agentic

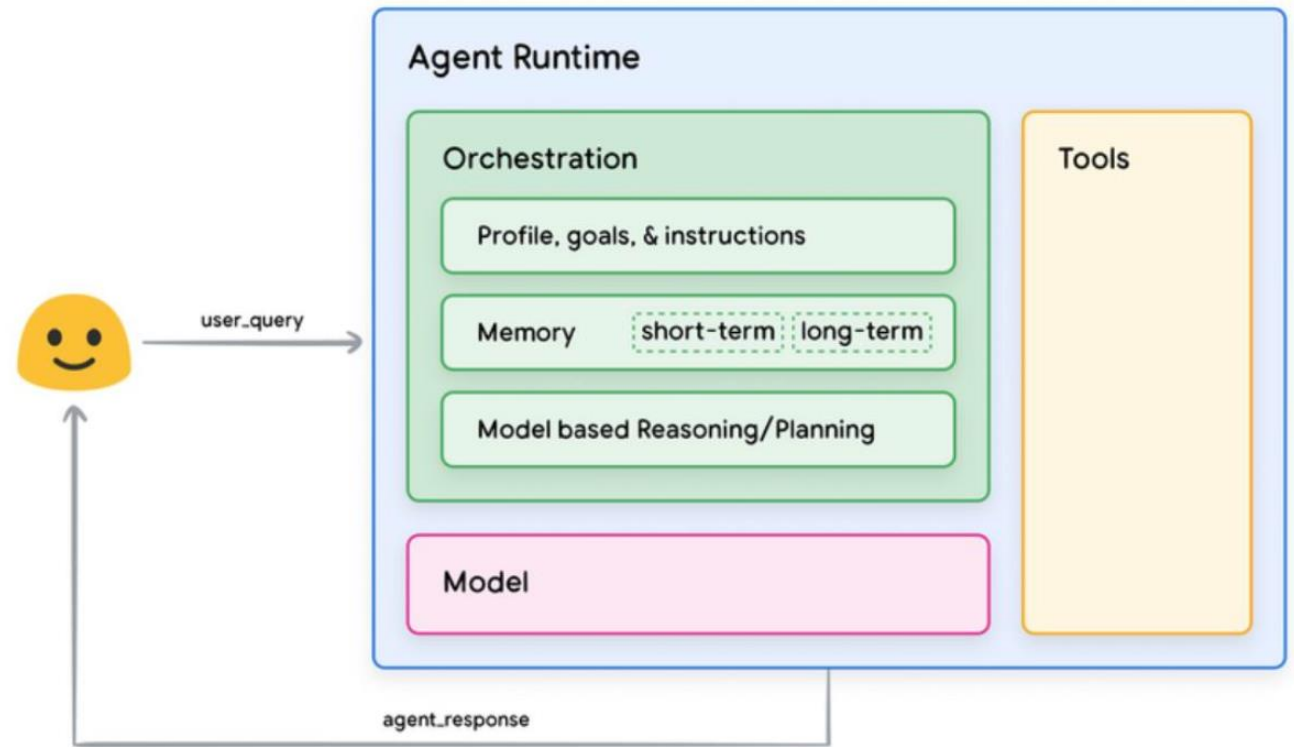
Agentic



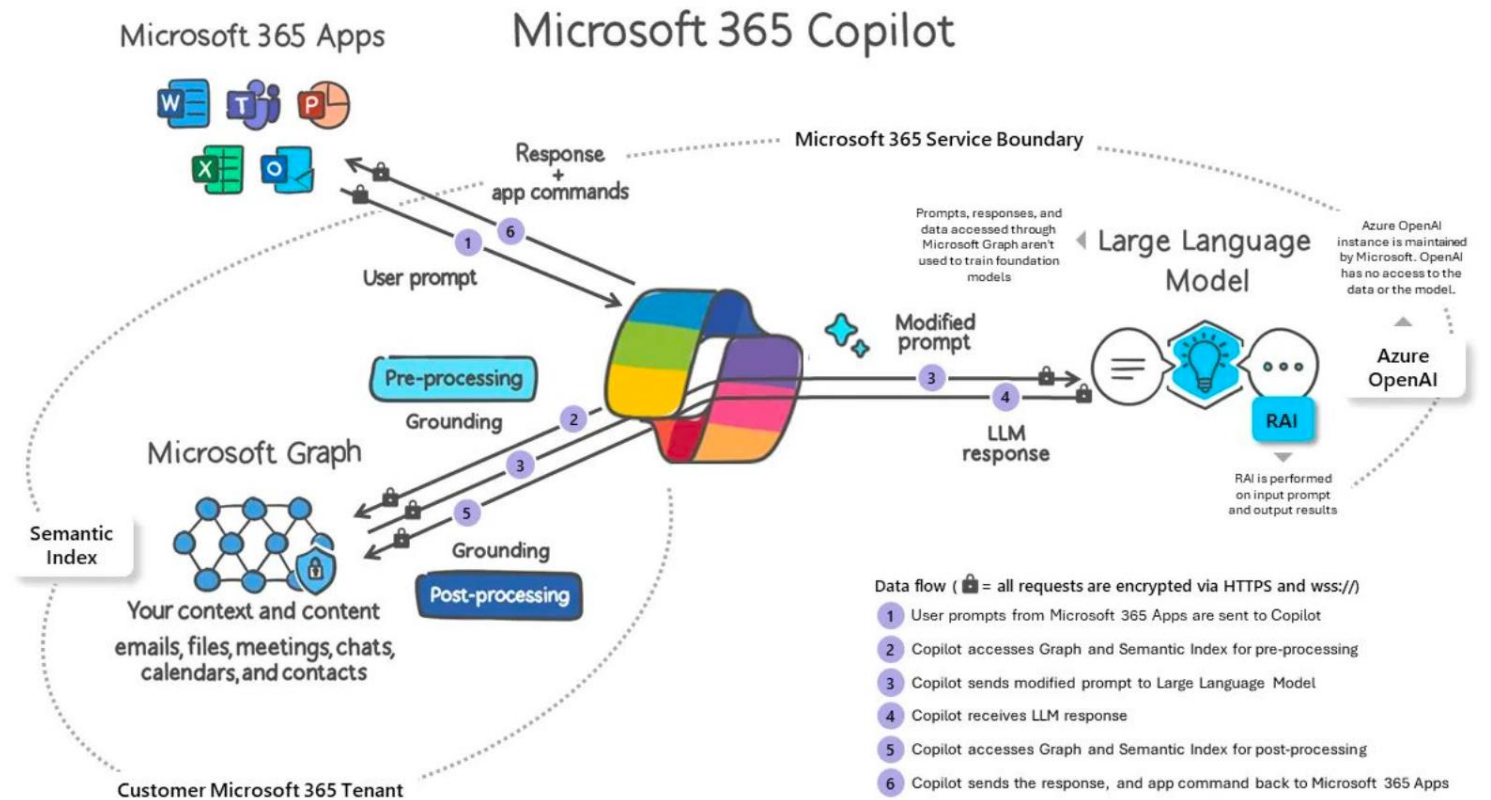
Inside an AI Agent



Inside an AI Agent ... according to Google



Agents in Action



Components of AI Agent

Memory

Stores context, past interactions, and learned patterns

Execution

Takes actions in the real world or digital environment



Planning

Creates strategies to achieve goals and handle contingencies

Tool Use

Interfaces with external systems, APIs, and applications

Feedback Loops

Evaluates outcomes and adjusts approaches accordingly

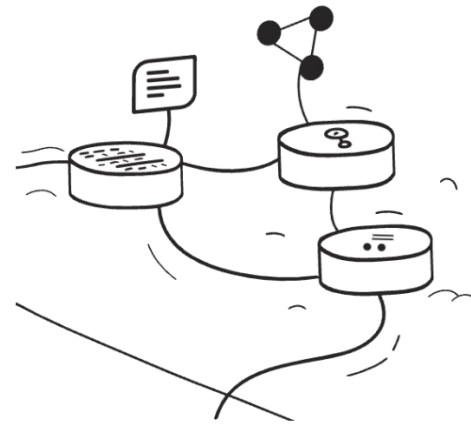
Memory & Feedback Loops

Memory Systems

- Short-term (conversation context)
- Long-term (persistent knowledge)
- Episodic (specific past interactions)

Feedback Mechanisms

- Human feedback (ratings, corrections)
- Self-evaluation (comparing outcomes to goals)
- Environmental signals (success/failure metrics)



Example: A customer service agent that remembers past interactions with a specific customer and improves its responses based on satisfaction ratings.

Planning & Execution

Goal Understanding

- Interpret user instructions and define success criteria

Task Decomposition

- Break complex goals into manageable subtasks

Strategy Selection

- Choose optimal approach based on available tools and constraints

Action Execution

- Carry out steps in sequence with appropriate timing

Outcome Evaluation

- Assess results and determine if goal was achieved.

Tool Use and APIs used by AI Agents

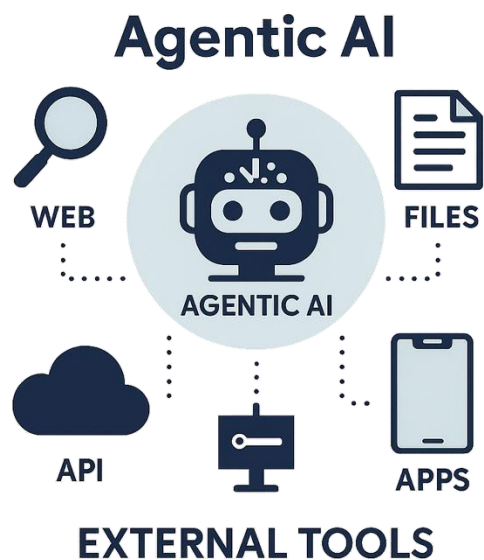
Common Tools Used by Agents

- Web search (Google, Bing)
- Database queries (SQL, vector DBs)
- CRM systems (Salesforce, HubSpot)
- Communication tools (Email, Slack)
- Data analysis (Excel, Python)
- Content creation (Word, image generators)



Advanced agents can select the appropriate tool for each subtask and chain them together to solve complex problems.

External Tools



Alpha Vantage

Apify

ArXiv

AWS Lambda

Shell (bash)

Bearly Code Interpreter

Bing Search

Brave Search

ChatGPT Plugins

Connery Action Tool

Dall-E Image Generator

DataForSEO

Dataherald

DuckDuckGo Search

E2B Data Analysis

Eden AI

Eleven Labs Text2Speech

Exa Search

File System

Golden Query

Google Cloud Text-to-Speech

Google Drive

Google Finance

Google Imagen

Google Jobs

Google Lens

Google Places

Google Scholar

Google Search

Google Serper

Google Trends

Gradio

GraphQL

HuggingFace Hub Tools

Human as a tool

IFTTT WebHooks

Infobip

Ionic Shopping Tool

Lemon Agent

Memorize

Mojeek Search

Nuclia Understanding

NVIDIA Riva: ASR and TTS

OpenWeatherMap

Oracle AI Vector Search: Generate Summary

Quickstart

Polygon Stock Market API Tools

PubMed

Python REPL

Reddit Search

Requests

SceneXplain

Search Tools

SearchApi

SearxNG Search

Semantic Scholar API Tool

SerpAPI

SQL Database

StackExchange

Tavily Search

Twilio

Upstage

Wikidata

Wikipedia

Wolfram Alpha

Yahoo Finance News

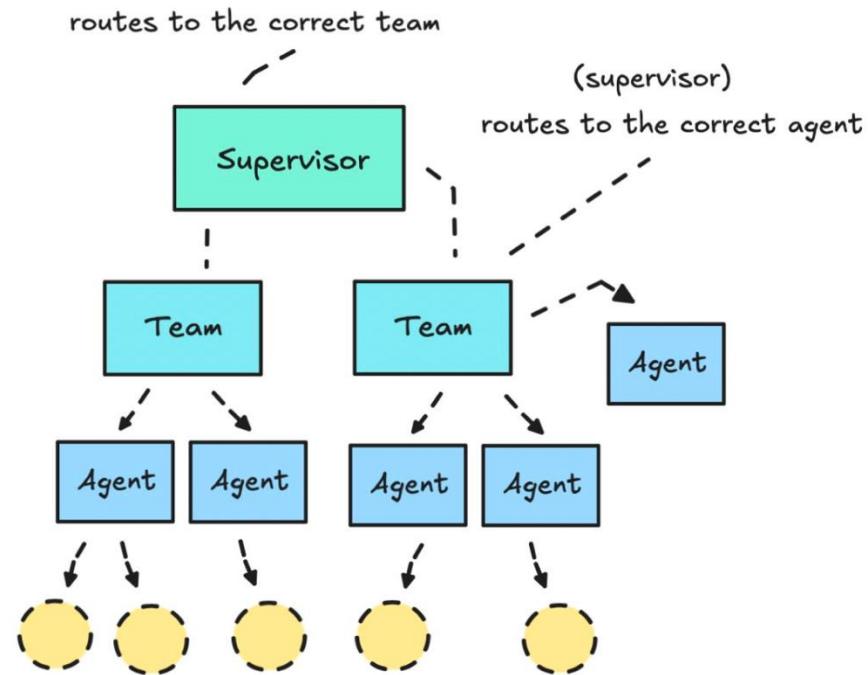
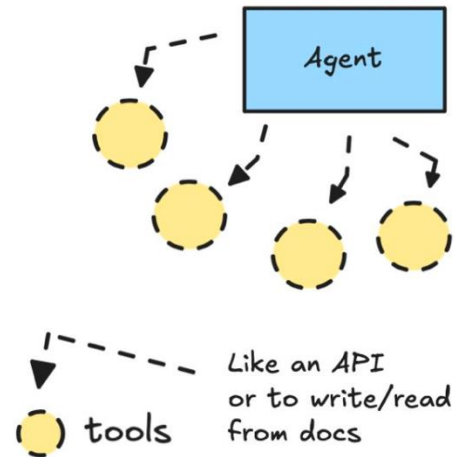
You.com Search

YouTube

Zapier Natural Language Actions

Multi-Agent Systems

Single vs Multiagent Systems



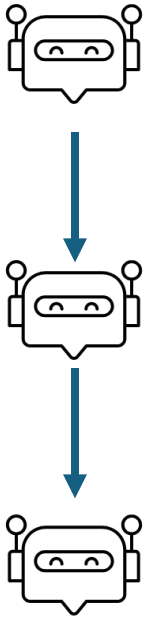
Example: Multi-agent system for writing blog posts

- Agent A plans the outline
- Agent B compiles research
- Agent C writes the 1st draft blog post
- Agent A reviews the draft and then requests:
 - Agent B – do more research
 - Agent C – write a 2nd draft

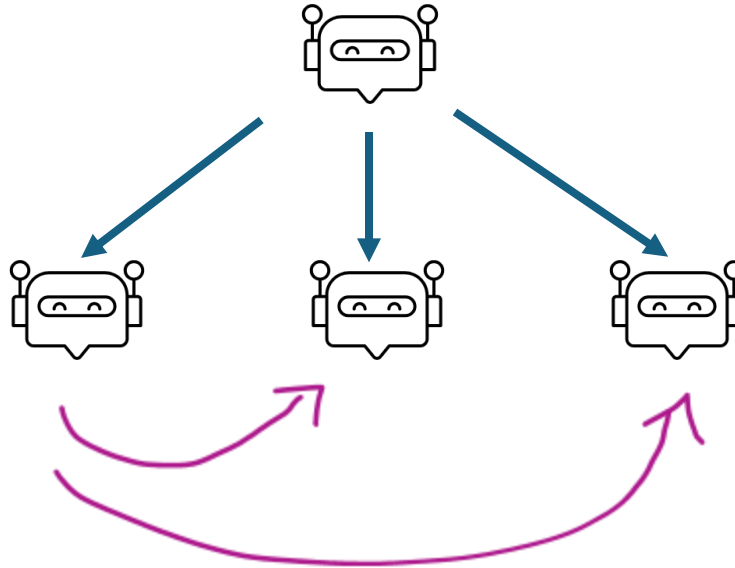
This iterative improvement process continues until Agent A is satisfied with the quality of the blog post.

Multi-Agent Team structures

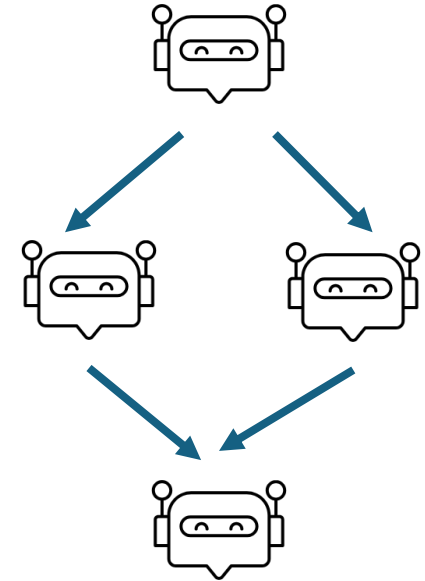
Sequential



Hierarchy



Parallel



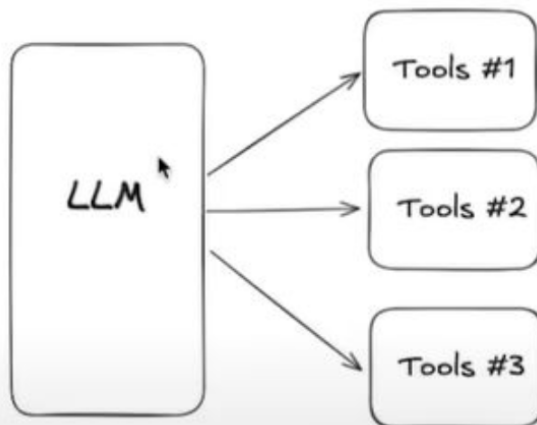
Challenges with Tool Calling

LLMs by themselves are incapable of doing anything meaningful

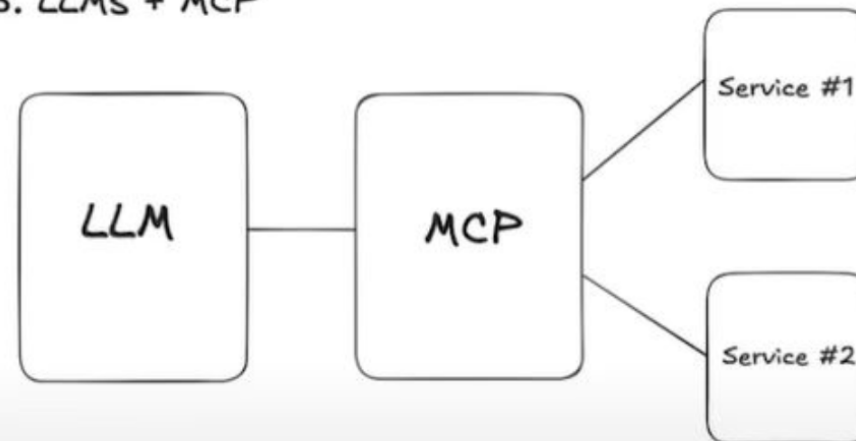
1. Just the LLM by itself



2. LLMs + Tools



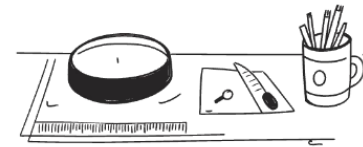
3. LLMs + MCP



What is Model Context Protocol (MCP)

What is MCP?

A standardized protocol for structured agent interaction with tools and large language models.

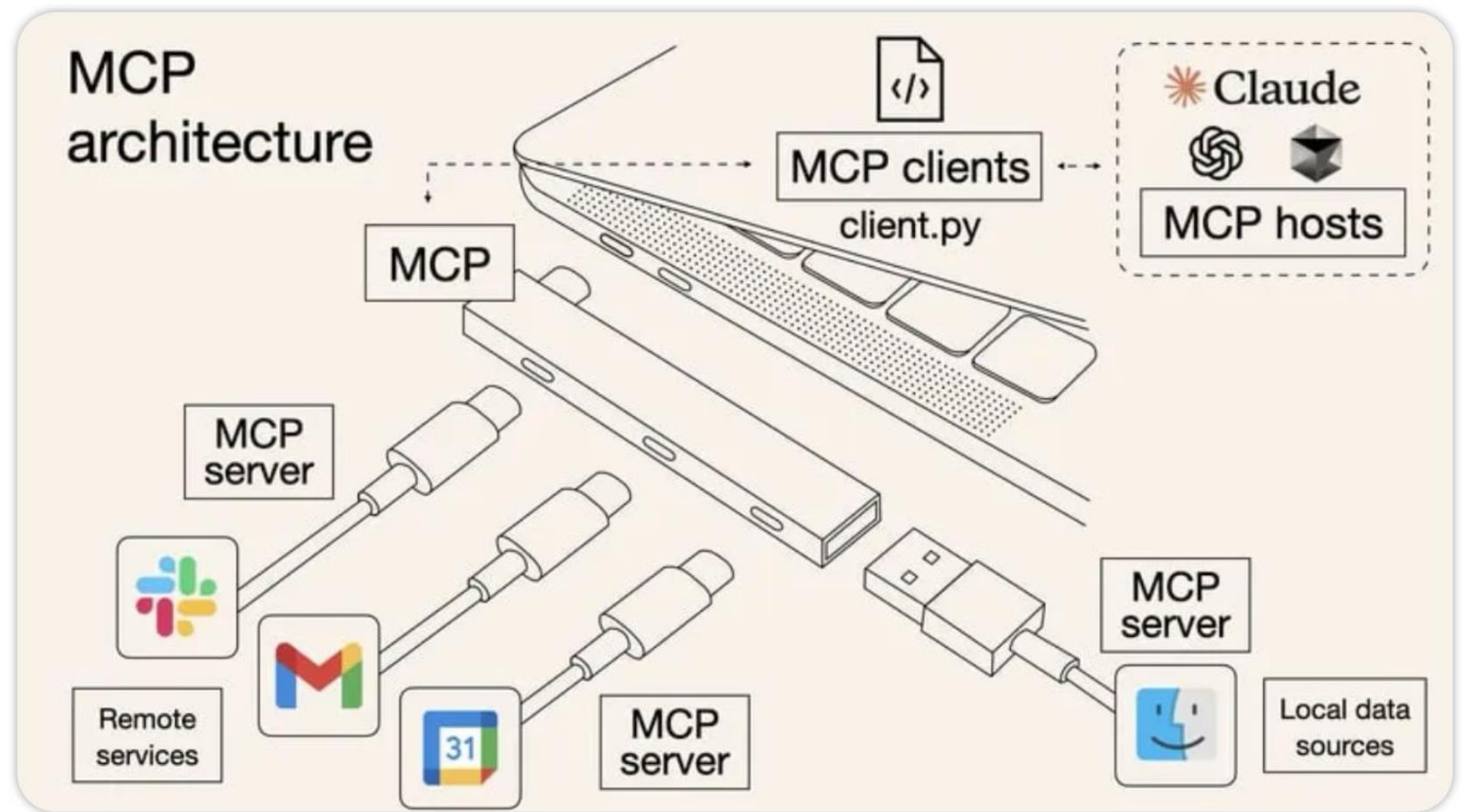


Key Benefits

- Consistent API interface
- Standardized tool definitions
- Improved agent reasoning capabilities
- Better interoperability between systems

MCP is an emerging open standard that provides a structured protocol for agents to interact consistently with both large language models and external tools.

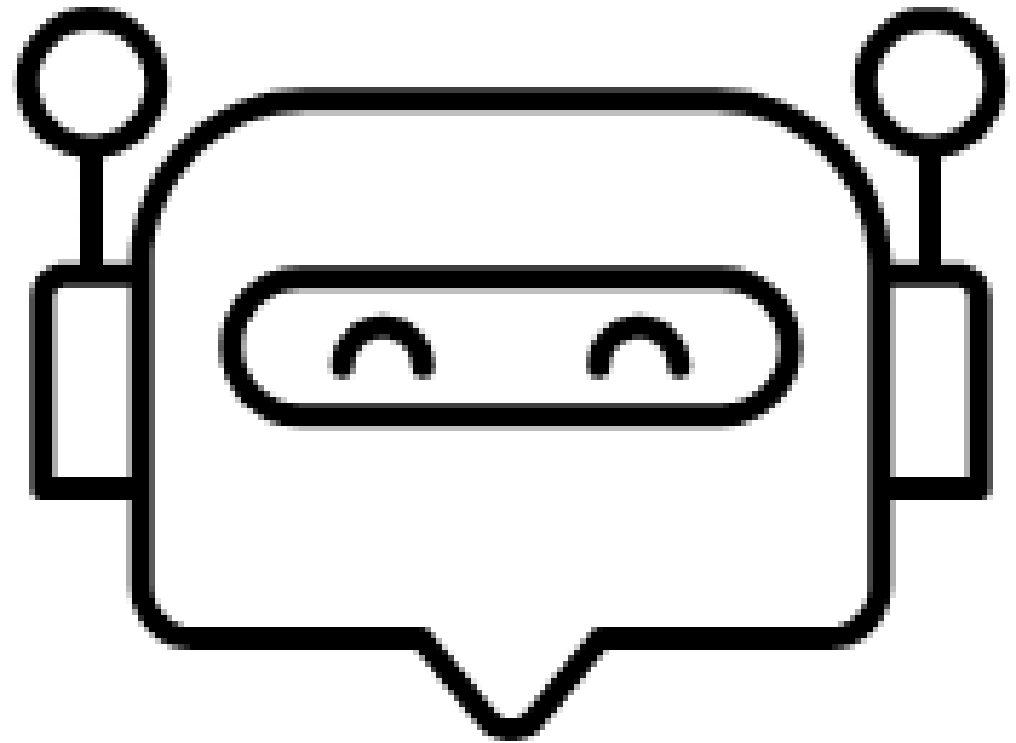
Analogy of MCP





Part 3

Real World Use Cases & Tools



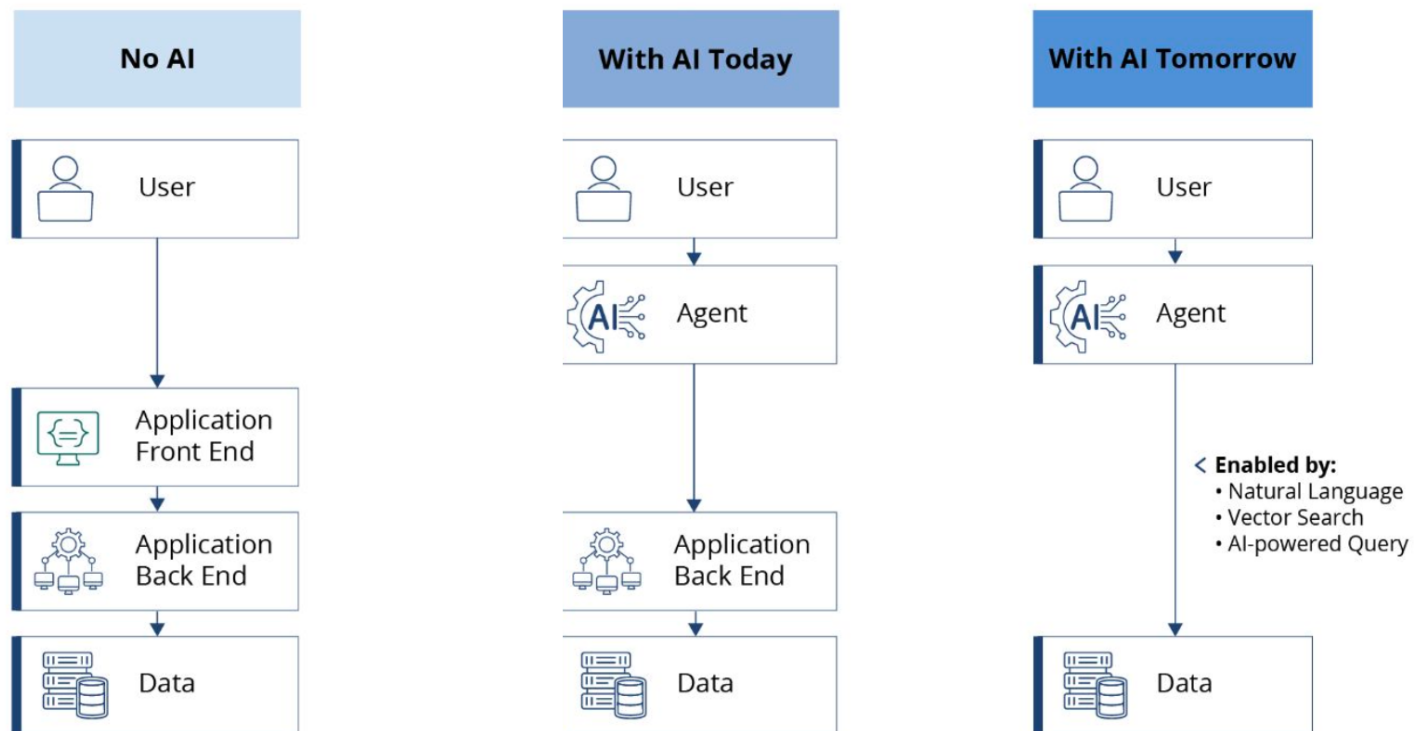
Real-World Agentic Use Cases & Tools (vs GPT)

- Now that we understand what AI agents are and how they work, let's explore **practical applications** and the **tools** that make them possible.
- We'll examine specific industries and functions where agents are already delivering value.



Reflection

In the age of agents, will we need applications?



AI Agent Landscape Overview

THE AI AGENT LANDSCAPE



68% of enterprise leaders plan to deploy AI agents within the next 12 months.

(Source: McKinsey 2024)



Open-source agent frameworks like LangChain and AutoGen have over 100K GitHub stars combined



The agent tools market is projected to exceed \$15B by 2027 (Gartner)



OpenAI

Meta



LangChain

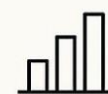
Google



AutoGen



Cognosys



Top use cases:

Personal productivity, customer support, R&D, financial operations, and marketing automation

(Gartner)

<https://aiagentsdirectory.com/landscape>

 **AI Agents Directory**

[Leaderboard](#) [Directory](#) [Agent Arena](#)

[Request](#) [Submit](#) [Login](#)

AI Agents Market Landscape

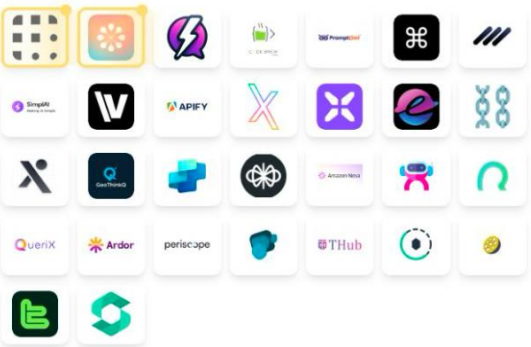
Interactive ecosystem map of AI agents, tools, and assistants

July 2025 • Categories: 65 • Agents: 1529

☐ Free ☐ Open Source ☐ Featured ☐ Show Names

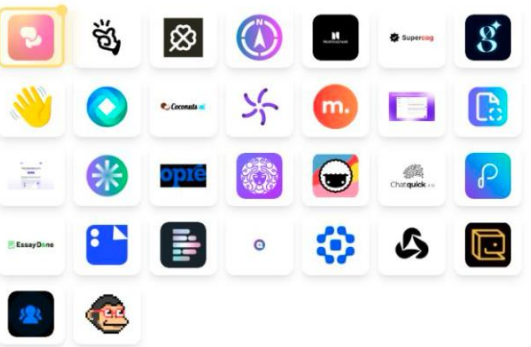
AI Agents Platform > 156

Platforms that allow users to create, customize, and deploy AI...

[Show 126 More](#)

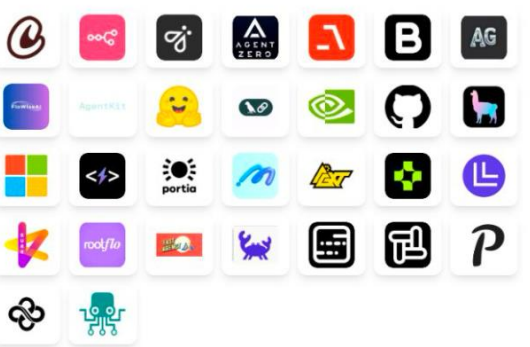
Productivity > 108

AI assistants that help you get more done by automating repetitive...

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AI Agents Frameworks > 101

Development frameworks that help to build and deploy AI agents.

[Show 71 More](#)

Agents in the Real World

AI agents are transforming operations across industries:

- Financial services (fraud detection, advisory)
- Healthcare (patient scheduling, records management)
- Retail (inventory optimization, customer service)
- Manufacturing (quality control, maintenance)
- Professional services (research, document review)



We'll now explore four key functional areas where agents are having immediate impact.

Use Case: Operations

Procurement

Agents that automatically identify purchasing needs, research vendors, compare prices, and initiate purchase orders.

Reporting

Agents that gather data from multiple systems, analyze trends, and generate comprehensive reports with insights.

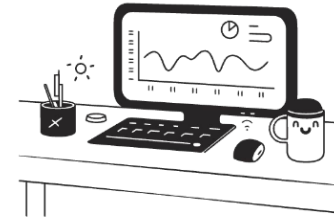
Scheduling

Agents that optimize resource allocation, schedule maintenance, and manage facility operations.

Use Case: Project Management

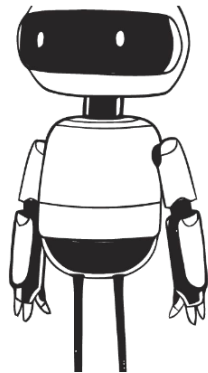
How Agents Transform Project Management

- Automatic task creation and assignment based on project plans
- Proactive identification of bottlenecks and dependencies
- Meeting scheduling and summary generation
- Progress tracking and stakeholder updates
- Resource allocation optimization



Example: A construction firm using agents to track milestones, manage vendor communications, and predict potential delays across multiple projects.

Use Case: Sales & Customer Support



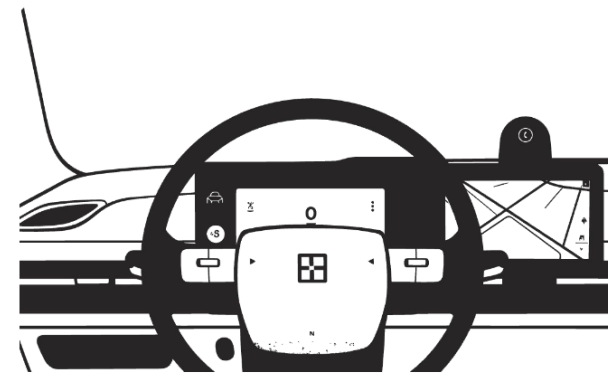
Lead Qualification

Agents that research prospects, score leads, and personalize outreach based on digital footprints.



Ticket Resolution

Agents that categorize issues, retrieve solutions, and resolve common problems without human intervention.



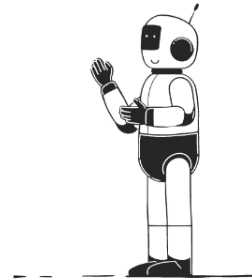
Follow-up Management

Agents that maintain relationships through timely, personalized communications based on customer history.

Use Case: Research & Knowledge Management

Research Capabilities

- Competitive intelligence gathering
- Market trend analysis
- Document summarization and insights extraction
- Content curation and knowledge base maintenance
- Literature reviews and citation management

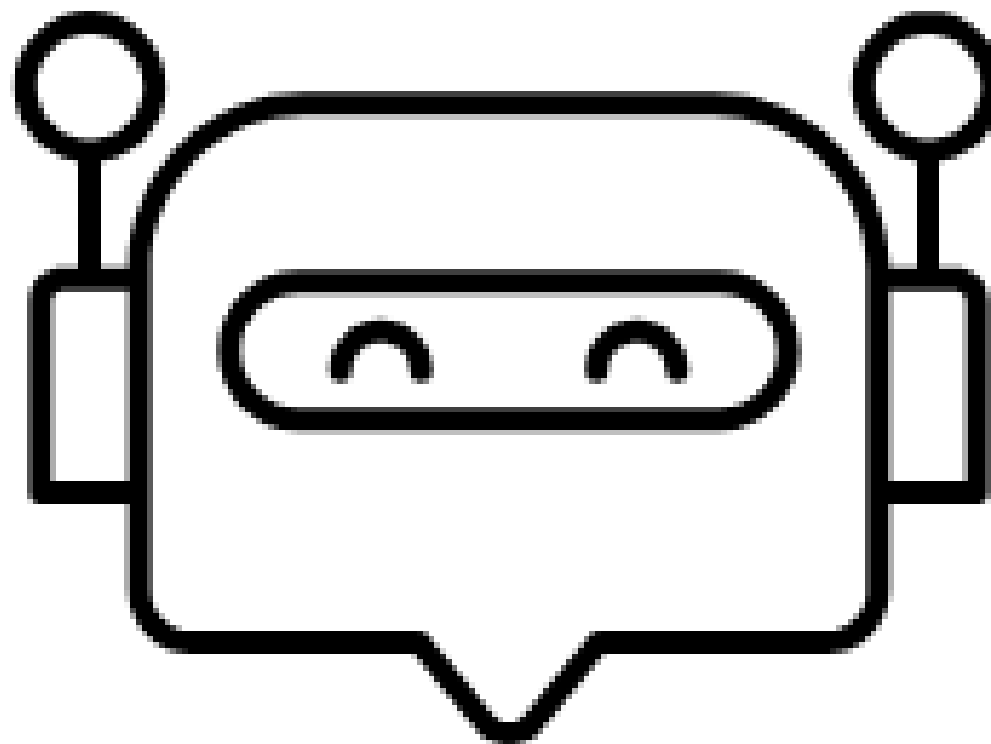


Example: A pharmaceutical company using agents to monitor scientific publications, identify relevant clinical trials, and summarize findings for R&D teams.



Part 4

Getting Started Strategy



Discussion: What are the Biggest Blockers?

- 1 Technical Skills**
Does your team have the expertise to implement and maintain AI agents?
- 2 Organizational Approval**
What stakeholders need to sign off on agent implementation?
- 3 Cost Considerations**
What's your budget for implementation, licensing, and ongoing operation?
- 4 Data Access**
Can agents access the systems and information they need to function?



Build vs Buy Comparison

Building In-House

Pros: Complete customization, IP ownership, platform independence

Cons: Requires technical expertise, longer timeline, ongoing maintenance

Best when: You have unique requirements, sensitive data, or strong technical teams

Buying Solutions

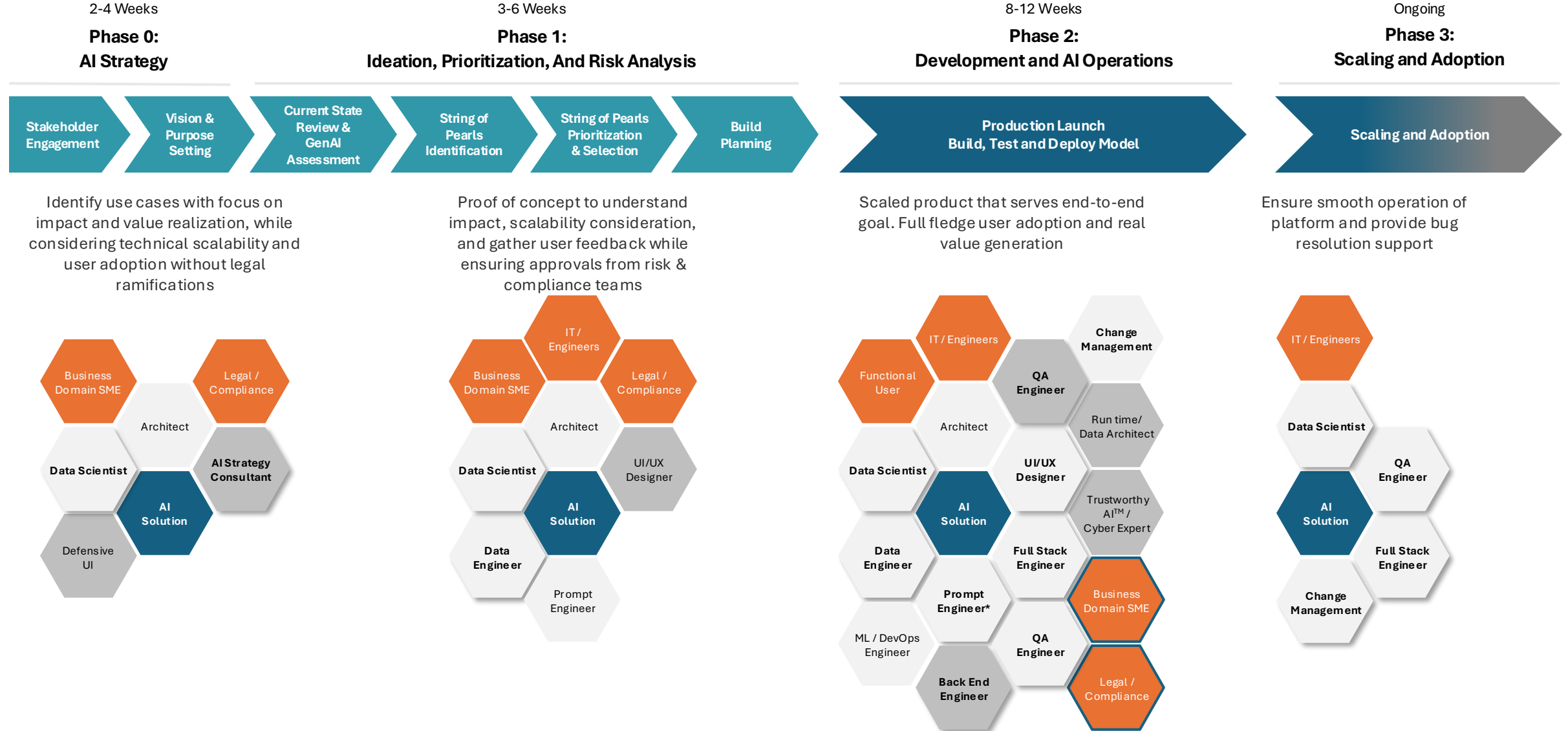
Pros: Faster deployment, professional support, lower initial investment

Cons: Less customization, ongoing subscription costs, potential vendor lock-in

Best when: Speed is critical, requirements align with available solutions



AI Implementation ... It takes a Village



No-Code & Low-Code Options

Zapier

Connect GPT with 5000+ apps through visual workflows. No coding required, but limited to predefined triggers and actions.

n8n

Visual app builder with AI capabilities. Great for creating agent-powered dashboards and user interfaces.

MindOS

Specialized agent platform with visual builders. Balances ease of use with powerful agent capabilities.

AI Agent Framework Comparison

(No Code)

Framework	Best For	Complexity	Key Features
Zapier	Tool integration, memory management	Medium	Rich ecosystem, modular design
MindOS	Multi-agent collaboration	Medium-High	Agent conversation, customization
n8n	Role-based agent teams	Medium	Human-like collaboration and flow

AI Agent Framework Comparison (Code)



Framework	Best For	Complexity	Key Features
LangChain	Tool integration, memory management	Medium	Rich ecosystem, modular design
AutoGen	Multi-agent collaboration	Medium-High	Agent conversation, customization
CrewAI	Role-based agent teams	Medium	Human-like collaboration and flow

ROI, Ethics, & Governance

ROI Considerations

- Time savings (hours per week × hourly cost)
- Error reduction (cost of mistakes × frequency)
- Scalability (handling volume without adding headcount)
- Customer satisfaction improvements

Governance Frameworks

- Transparency and monitoring about agent use
- Human oversight and intervention protocols
- Data sharing, privacy and security measures

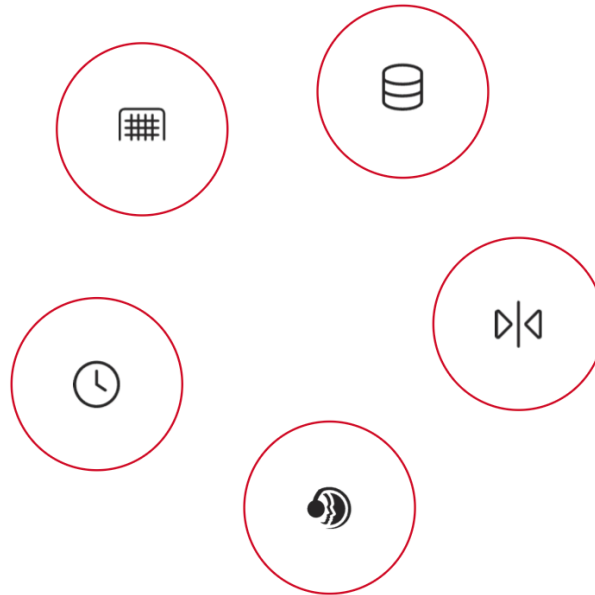


Responsible deployment requires balancing efficiency gains with appropriate controls and transparency.

Components of an AI Agent Implementation

Clear Goal
Specific problem to solve with
measurable success criteria

Timeline
Realistic expectations for
development and deployment



Data Access

Necessary information sources and
system integrations

Tool Selection

Identified platforms or frameworks
that match requirements

Team Skills

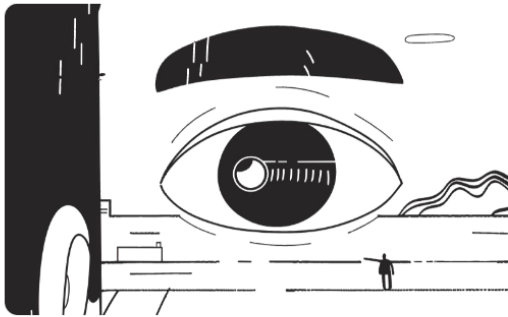
Technical capabilities to implement
and maintain

Tool Match for each Use Case



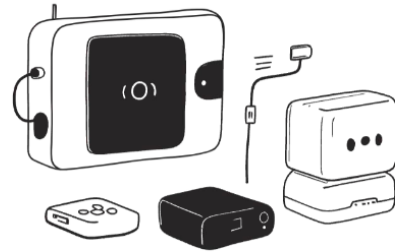
Use Case	Recommended Tools	Key Requirements
Operations	n8n, Zapier + GPT	System integrations, structured data handling
Project Management	MindOS, Asana + AutoGen	Timeline awareness, collaboration features
Sales & Support	Relevance AI, Salesforce Einstein	CRM integration, conversation capabilities
Research	Superagent, CrewAI	Web search, document analysis, summarization

Tools to get Started



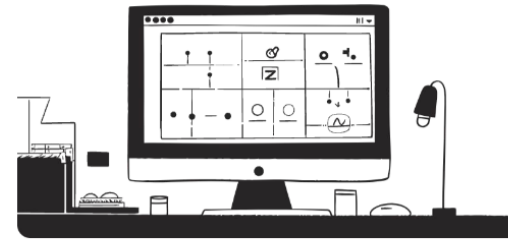
zapier

Enterprise-grade agent platform with strong security, compliance, and integration capabilities.



n8n

Open-source workflow automation tool that can be enhanced with AI agent capabilities.



MindOS

Low-code platform for building and deploying custom AI agents with sophisticated memory systems.



Superagent

Premade Agents which can provide outcomes as a service

Poll: Build or Buy?

- Build Custom agents in-house.
- Use no-code/low-code platforms
- Purchase pre-built agent solutions
- Hybrid approach (specify in chat)
- Not sure yet – need more explanation

Courses

Browse our courses and click through to see upcoming dates.

<https://www.softed.com/courses>

Topic: **AI**

Certification: **All**

Duration: **All**



Agentic AI on Azure: Build, Deploy, and Scale Intelligent Agents in the Enterprise

Learn to design, build, and deploy enterprise-grade AI agents with Azure AI Studio and Azure OpenAI.

AI 2 days



AI Agents with Google's ADK Bootcamp: Build with Gemini, Protocols & AgentOps

A two-day live course on building AI agents with Google's ADK.

AI 2 days



Building Agentic App with the OpenAI SDK

A hands-on course on building AI agents with OpenAI's SDK and REST APIs. Learn to create intelligent, tool-using agents, integrate Python and APIs, and design secure, production-ready applications—from chatbots to multi-agent systems.

AI 2 days



Intro To The Future of Work Using AI Agents

Learn how AI agents are transforming work—and how to use them today. In this hands-on, beginner-friendly course, you'll explore real use cases, understand the difference from traditional automation, and even prototype your own—no coding needed.

AI 4.5 hours

Thank you!

Zaki Medina

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