The AI Agents Staircase

ADVANCED

Fully Autonomous AI Agents
AI executing real-world tasks with minimal human intervention (e.g., Devin AI, OpenDevin).

Self-Learning AI Agents
AI improving itself based on feedback and past experiences (e.g., Adaptive AI, AutoRL).

Reinforcement Learning & Fine-Tuning
Customizing AI behavior via RLHF, supervised fine-tuning (e.g., LoRA, PEFT).

Autonomous Planning & Decision-Making
AI making independent decisions based on user goals (e.g., Reflexion, Ada Planner).

Agentic Workflows
Structured workflows where AI agents can decide and act autonomously (e.g., AutoGPT, BabyAGI).

Multi-Agent Collaboration
AI agents interacting, delegating, and solving problems in teams (e.g., CrewAI, MetaGPT).

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INTERMEDIATE

Agent-Oriented Frameworks
Tools for orchestrating multiple AI agents (e.g., LangChain Agents, AutoGen, CrewAI).

Multi-Step Reasoning
Planning and breaking tasks into smaller steps for execution (e.g., Chain-of-Thought Prompting).

Function Calling & Tool Use
Allowing AI to call external tools and execute actions (e.g., OpenAI Functions, AutoGen).

Memory & Retrieval Mechanisms
Short-term and long-term memory (e.g., Retrieval-Augmented Generation, ChromaDB).

Context Management
Handling long conversations, session history, and user interactions (e.g., Memory in LangChain, RAG).

BASIC

APIs & External Data Access
Connecting AI to external data sources via APIs (e.g., OpenAI API, Hugging Face, LangChain).

Prompt Engineering
Designing optimized prompts to improve AI responses and accuracy.

Embeddings & Vector Databases
Storing and retrieving semantic information (e.g., Pinecone, Weaviate, FAISS).

Large Language Models (LLMs)
Models like GPT, Claude, Gemini, and LLaMA that generate human-like responses.