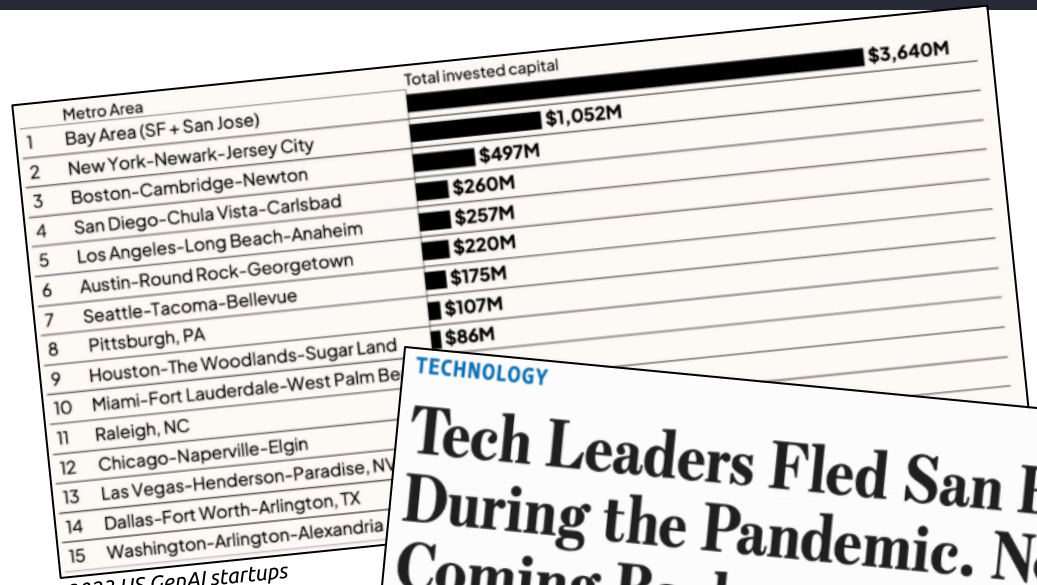
Capgemini
APPLIED INNOVATION EXCHANGE

Agents of Change

Transforming Industries with AI Agents

San Francisco: >50% of global AI funding since 2022



	Metro Area	Total invested capital
1	Bay Area (SF + San Jose)	$3,640M
2	New York-Newark-Jersey City	$1,052M
3	Boston-Cambridge-Newton	$497M
4	San Diego-Chula Vista-Carlsbad	$260M
5	Los Angeles-Long Beach-Anaheim	$257M
6	Austin-Round Rock-Georgetown	$220M
7	Seattle-Tacoma-Bellevue	$175M
8	Pittsburgh, PA	$107M
9	Houston-The Woodlands-Sugar Land	$86M
10	Miami-Fort Lauderdale-West Palm Be	
11	Raleigh, NC	
12	Chicago-Naperville-Elgin	
13	Las Vegas-Henderson-Paradise, NV	
14	Dallas-Fort Worth-Arlington, TX	
15	Washington-Arlington-Alexandria	

2023 US GenAI startups

San Francisco really is the AI capital of the world

INTERNATIONAL • ARTIFICIAL INTELLIGENCE

AI start-ups are booming in San Francisco's 'Cerebral Valley'

By Corine Lesnes (San Francisco (United States) correspondent)

TECHNOLOGY

Tech Leaders Fled San Francisco During the Pandemic. Now, They're Coming Back.

Founders and investors who moved to Miami and elsewhere are returning to a boom in artificial intelligence and talent

Banking & Financial Services

Bay Area's power of proximity attracts talent back to the region

ARTIFICIAL INTELLIGENCE • STARTUPS • VENTURE

SF Bay Area Share Of Startup Funding Hits A Multiyear High

SAN FRANCISCO, July 13 (Reuters) - In a frenzy unseen since the birth of social media in the early 2000s, investors are pouring billions into generative AI and fueling a startup boom in San Francisco.

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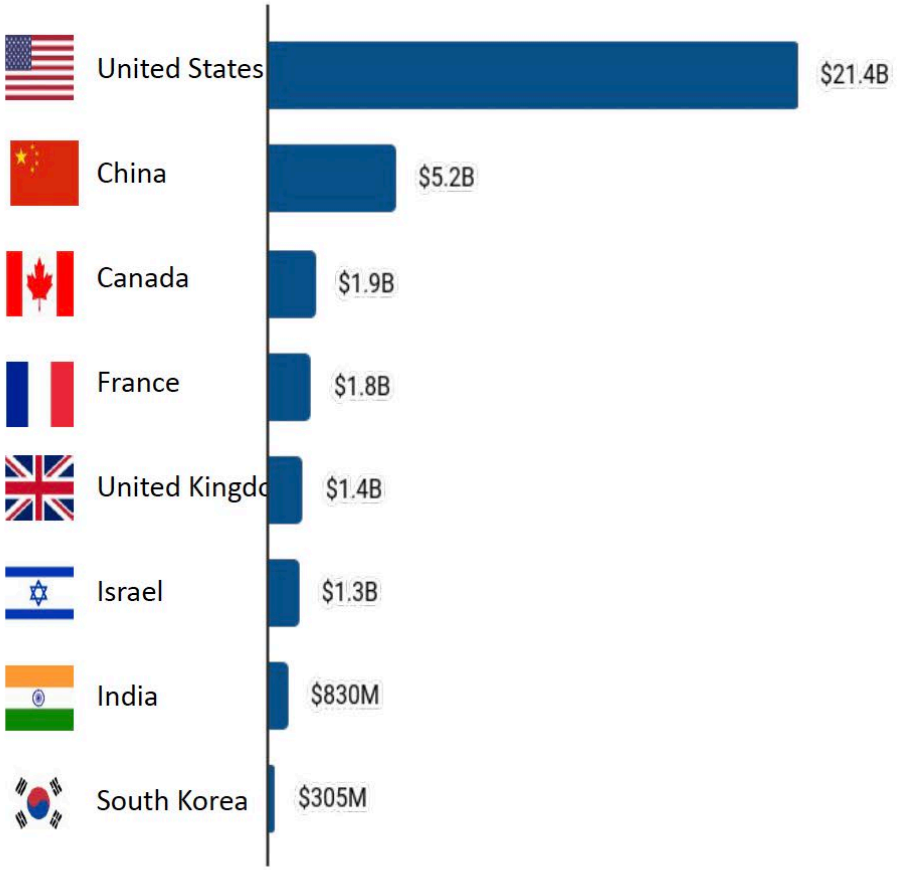
Generative AI Funding by Geography (rolling 12)

Distribution by Country - Total Funding ($)



	# Rounds	Top Funded Company
United States	1683	Anthropic (4.5B)
China	945	SenseTime (2.8B)
Canada	36	Cohere (885M)
France	85	Mistral AI (1.2B)
United Kingdo	40	Exscientia (429M)
Israel	104	AI21 Labs (336M)
India	59	Gupshup (486M)
South Korea	152	Mathpresso (148M)

Top Cities by Funding

San Anselmo	$4.5B
San Francisco	$4.4B
Hong Kong	$3.2B
New York City	$2.5B
Palo Alto	$2.5B
Paris	$1.7B
Toronto	$1.5B
Cambridge	$1.1B
London	$985M
Tel Aviv	$827M

Note: Funding includes only Equity Funding. It excludes Debt, Grant, Post-IPO and ICO funding.

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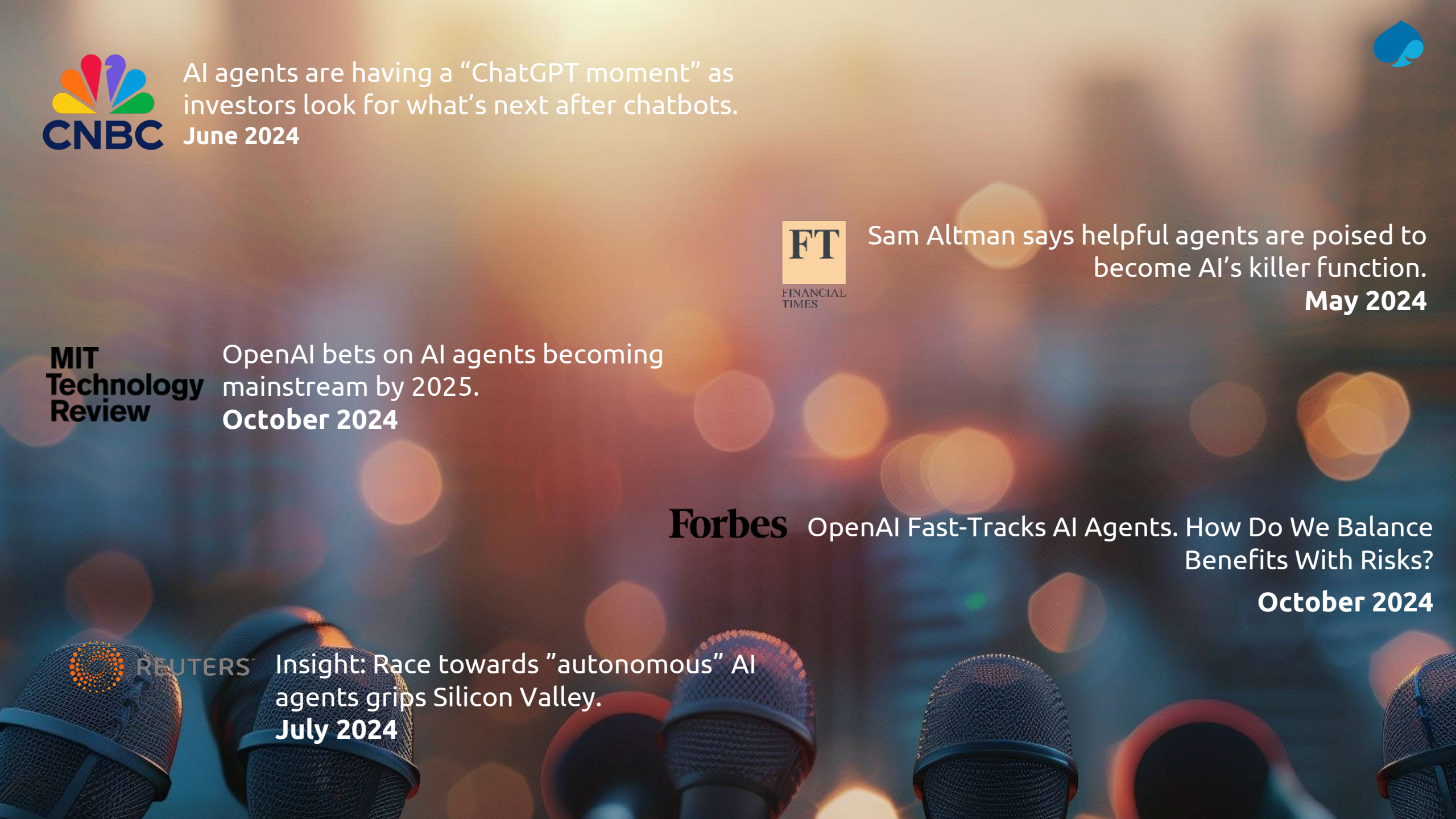
2024-2025 investments: AI Agents


CNBC
AI agents are having a “ChatGPT moment” as investors look for what’s next after chatbots.
June 2024
FT
FINANCIAL TIMES
Sam Altman says helpful agents are poised to become AI’s killer function.
May 2024
MIT Technology Review
OpenAI bets on AI agents becoming mainstream by 2025.
October 2024
Forbes
OpenAI Fast-Tracks AI Agents. How Do We Balance Benefits With Risks?
October 2024
REUTERS
Insight: Race towards ”autonomous” AI agents grips Silicon Valley.
July 2024

Key Research Papers Published in 2023-2024

AI Agent Research Paper

- The Landscape of Emerging AI Agent Architectures for Reasoning, Planning, and Tool Calling: A Survey
- Levels of AI Agents: from Rules to Large Language Models
- Position Paper: Agent AI Towards a Holistic Intelligence
- Visibility into AI Agents
- Autonomous Agents in Software Development: A Vision Paper
- A Survey on Large Language Model based Autonomous Agents

Multi Agent Research Paper

- ChatDev: Communicative Agents for Software Development
- Enhancing Cooperation through Selective Interaction and Long-term Experiences in Multi-Agent Reinforcement Learning
- Transforming Competition into Collaboration: The Revolutionary Role of Multi-Agent Systems and Language Models in Modern Organizations
- MegaAgent: A Practical Framework for Autonomous Cooperation in Large-Scale LLM Agent Systems
- MetaGPT: Meta Programming for A Multi-Agent Collaborative Framework
- AutoGen: Enabling Next-Gen LLM Applications via Multi-Agent Conversation

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AI Agent Startups, Tools, and Frameworks

Startups

Productivity

Task Automation

Ailice, Cognosys, embra, FLOWDE, GPT Researcher, iMean.AI, Lindy, Lutra, Matrices, Relevance AI, tektonic ai

Specialization

Customer Service

airkit.ai, Chaindesk, easyway, Floatbot, siena, SIERRA, Voiceflow

Finance

AGENTSMYTH, avanzai

Healthcare

Hippocratic AI — Do No Harm

Procurement

DIDERO

Sales

B2B ROCKET, Opencord.AI

Voice

Synthflow

Foundation

Developer

Cleric, codel, Cognition, Composabl, imbue, Magic, OpenHands, SoftwareAgent.ai, SWE-agent, YeagerAI

Framework

Adala, AutoGPT, BabyAGI, Eidolon AI, Lagent, LangChain, LlamaIndex, MemGPT, MiniAGI, MultiOn, Qwen-Agent, SlashGPT, XAgent

Multi Agent System

Agency Swarm, agent forge, AgentVerse, AgentOps.ai, AI Legion, AGENTS, AutoGen, CHARDEV, crewai, Internet of Agents, iX, L2MAC, MetaGPT, sagentic.ai, Sibyl, taskade

Platform

ANON, ARTISAN, beam, Ema, FlowiseAI, gigbee.ai, INSTA LILY, lyzr, Promptly, Questflow, SECONDROID, Sema4.ai, Cimba.ai, Spell, Sprouts Ai, Steamship, SuperAGI, WORDWARE

Security

nullify, Pixee

Testing

BlinqIO, Gimlet, QA.tech

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Copilots are so 2023. AI Agents are pilots.

The problem with ChatGPT

Meet Ben: An autonomous AI Agent

Perception
Sensors, APIs, and curated databases equip the agent with the ability to understand its environment

Knowledge Base
A repository of information utilized for decision-making and task execution

Reasoning & Decision
Processing and analyzing data and knowledge to make informed decisions

Learning & Adaption
Agents learn from experiences, enhancing performance progressively

Action & Execution
Execute tasks via control systems and interfaces

Communication & Interaction
Engaging with users and other agents through natural language processing and dialogue management

Monitoring
Monitoring performance and environment for self-assessment

Planning & Coordination
Planning and coordinating actions for effective goal achievement

Short-term memory

Long-term memory

Memory

Calendar

Calculator

CodeInterpreter

Search

… etc.

Tools

Planning

Reflection

Self-critics

Chain of thoughts

Subgoal decomposition

Action

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Ben’s 2025 upgrade

Ben’s heartbeat. He acts before and after tasks.

Ben has a heartbeat

Ben AI: Autonomous AI Sales Rep

Chris AI: Autonomous Customer Service Rep

Liza AI: Autonomous Procurement Manager

Bob AI: Autonomous HR Team Lead

Ann AI: Autonomous Product Owner

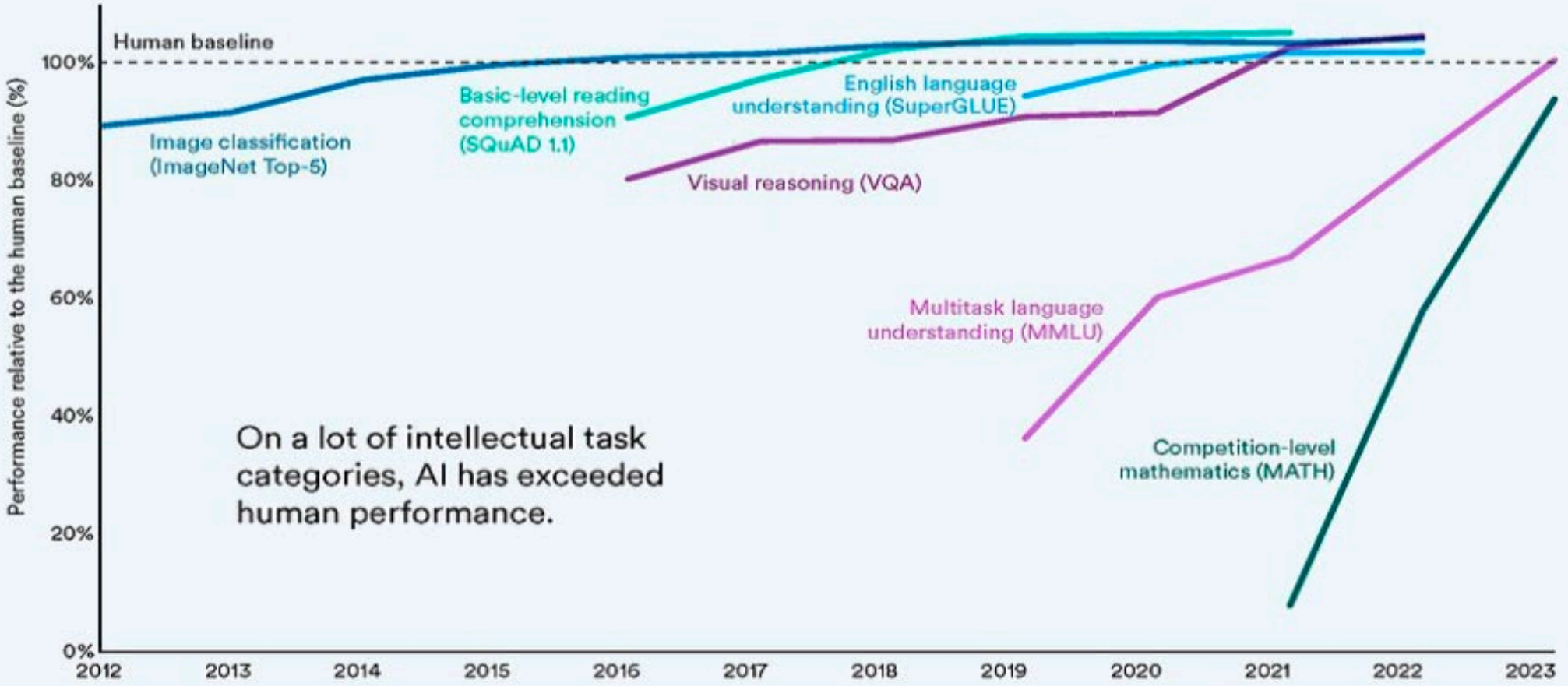
Zoe AI: Autonomous Lead Developer

Susan AI: Autonomous CTO

Sarah AI: Autonomous CMO

Select AI Index technical performance benchmarks vs. human performance

Source: AI Index, 2024 | Chart: 2024 AI Index report



Stanford University

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Harvard Business Review

AI Can (Mostly) Outperform Human CEOs

by Hamza Mudassir, Kamal Munir, Shaz Ansari, and Amal Zahra

September 26, 2024

Yaroslav Danylchenko/Stocksy

AI Agents excels in strategic decision-making
In a simulated automotive industry scenario, GPT-4o outperformed human participants in product design, market response, and profitability metrics.

AI struggles with unpredictable events
Despite its success in optimization, GPT-4o failed to handle unexpected "black swan" events, leading to its termination by the virtual board for prioritizing short-term gains over long-term flexibility.

Hybrid leadership is the future
The synergy between human CEOs and AI will define future leadership, with AI complementing human leaders by focusing on data-driven analyses while humans handle vision, values, and sustainability.

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Susan AI: Autonomous CEO

Multi-Agent Systems

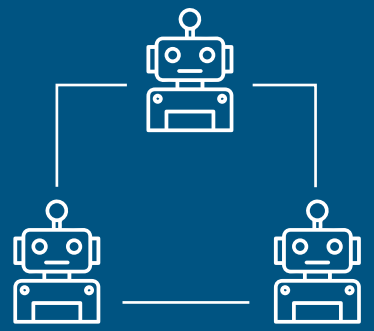
Countless
autonomous agents

Each agent is a subject
matter expert

Collaborating towards a
common objective

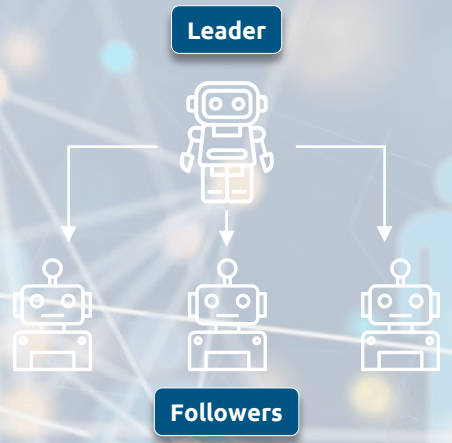
Multi-Agent Systems

Equi-Level Structure



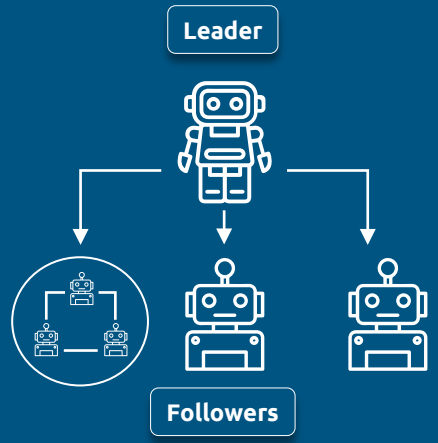
LLM agents operate at the same hierarchical level, each with its role and strategy, without hierarchical advantage over others

Hierarchical Structure



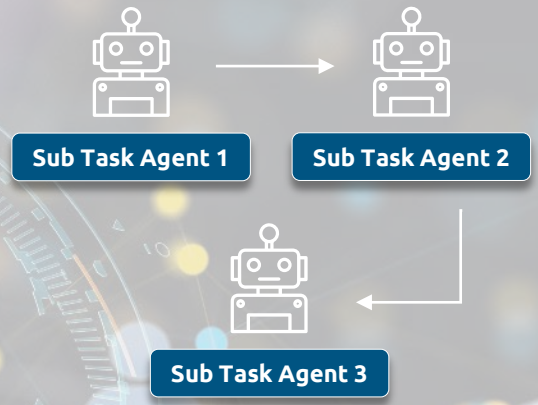
Hierarchical structures involve a leader guiding and planning while followers respond and execute instructions

Nested Structure



It forms sub-structures within equi-level or hierarchical systems in a multi-agent setup. In this, some agents delegate complex tasks by creating sub-systems and inviting other agents to assist

Sequential Structure



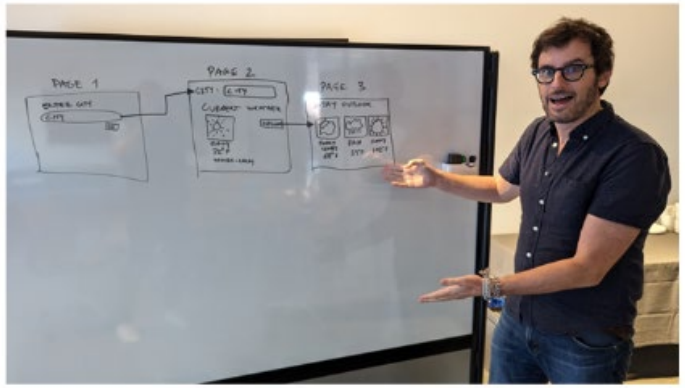
A decision-making framework where agents act in sequence, influenced by prior actions

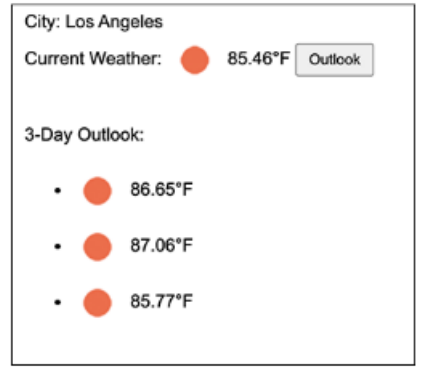
Multi-Agentic Collaboration

Source: Large Language Model based Multi-Agents: A Survey of Progress and Challenges

They think. They act. They collaborate.

Traditional use of code generation





Whiteboard Sketch

Idea sketch
Wireframe

LLM

Code generation

Human iteration
VS Code

Debugging Deploying

Web Application

Running

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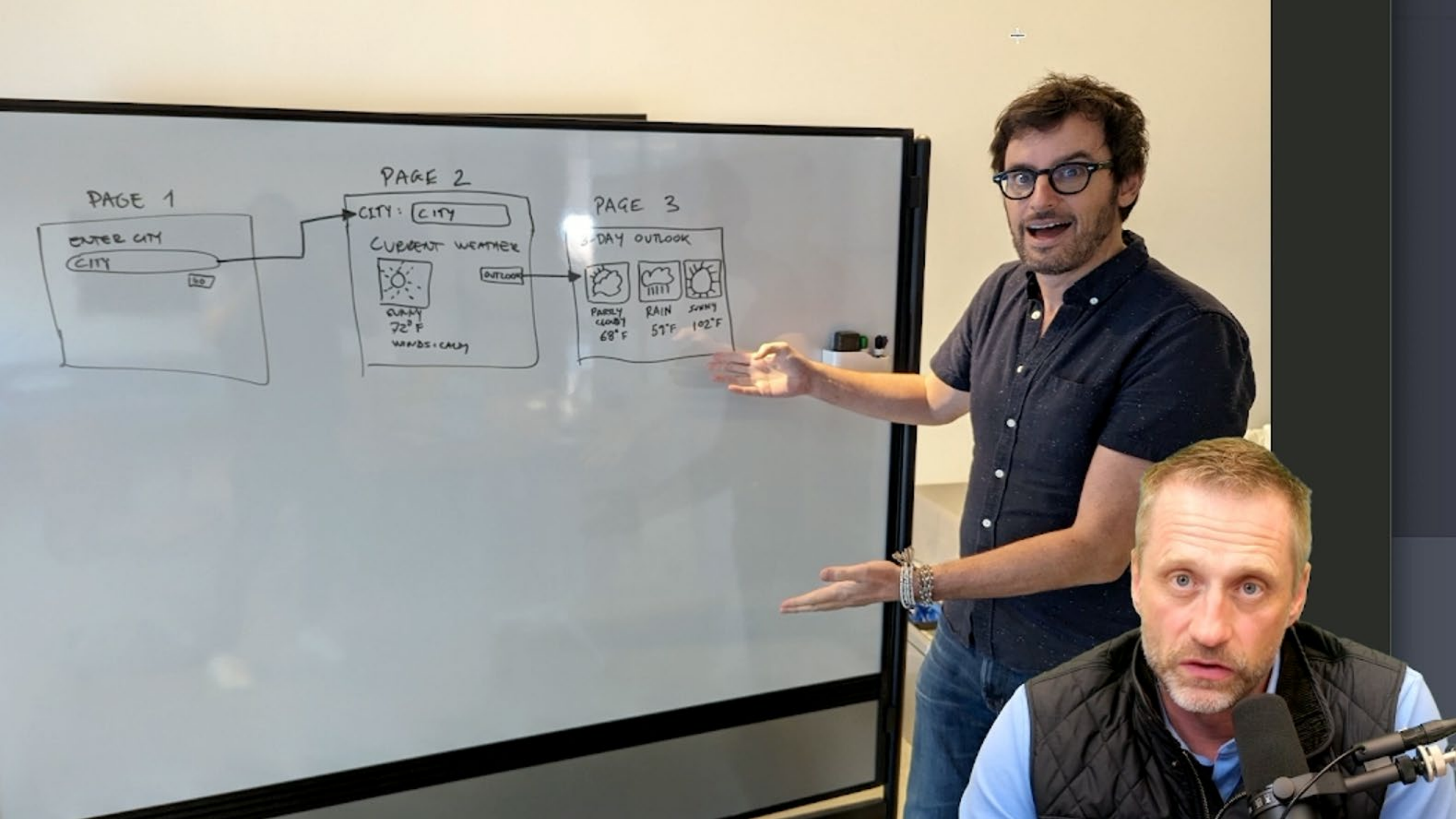
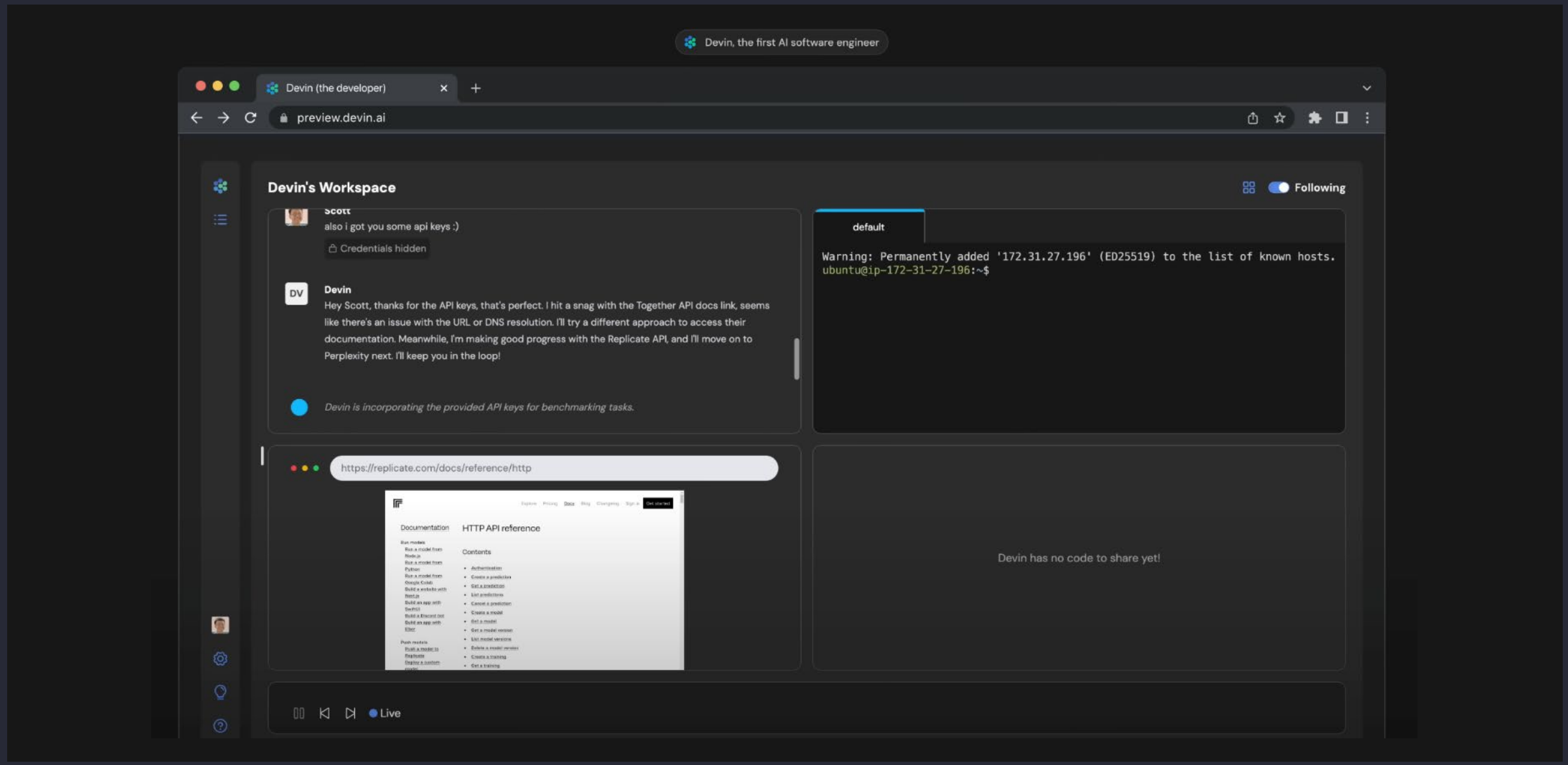

PAGE 1
ENTER CITY
CITY
GO
PAGE 2
CITY: CITY
CURRENT WEATHER
OUTLOOK
SUNNY
72° F
WINDS: CALM
PAGE 3
5-DAY OUTLOOK
PARTLY CLOUDY
68° F
RAIN
57° F
SUNNY
102° F

An autonomous AI Agent takes on a complex task



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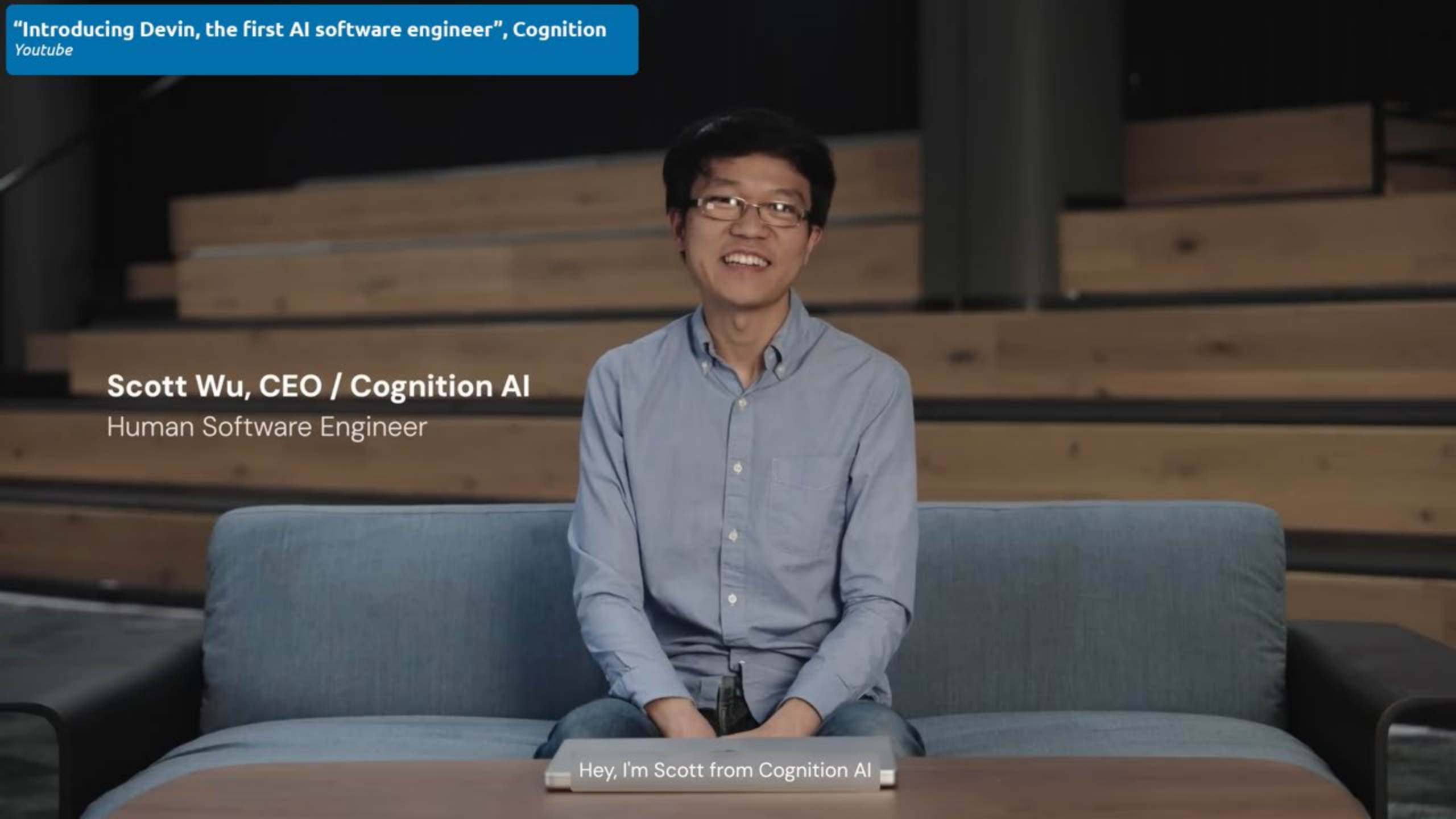
“Introducing Devin, the first AI software engineer”, Cognition
Youtube



Proof of Value
NEO: Software Development using a Hierarchical Structure

WIP

NEO AGENTS

Capgemini APPLIED INNOVATION EXCHANGE

Create a project with a user-friendly interface where users can enter a stock symbol to get the latest price, view charts showing the stock's performance over the last ten days, and collect some news about the company

Launch APP! View Code!

List of Agents:

1. Soheil (TechLead)
2. Luke (API Engineer)
3. Leo (Backend Engineer)
4. Max (Frontend Engineer)
5. Sara (Senior Fullstack Engineer)
6. Jane (QA Engineer)

NEO Agents

Agents trained on Capgemini methodology and know-how, including:

- Capgemini DevOps
- Integrated Architecture Framework
- AD-Distributed Information Systems
- TMap

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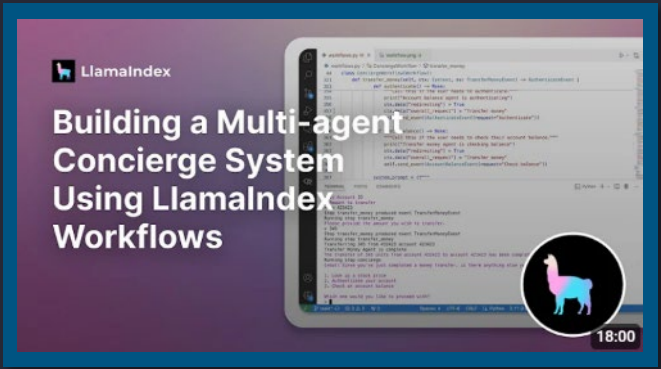
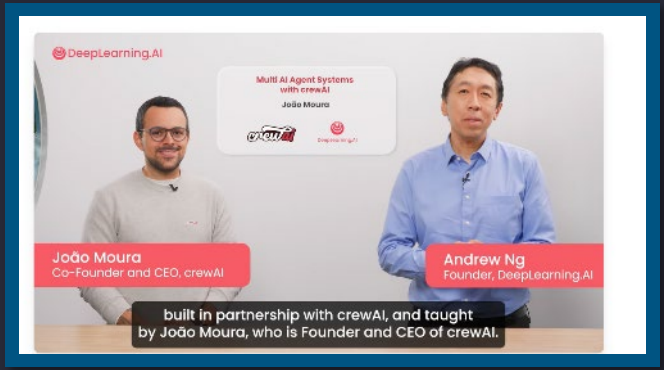
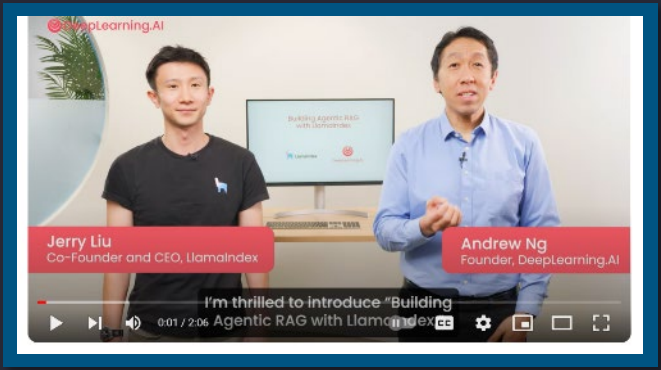
AI Agent & Multi-Agent System – Tutorials







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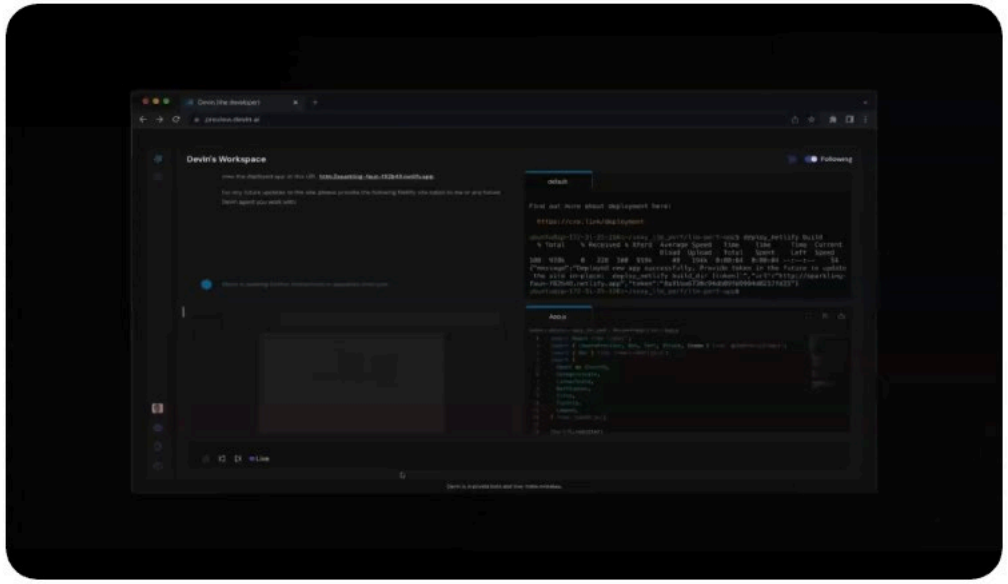
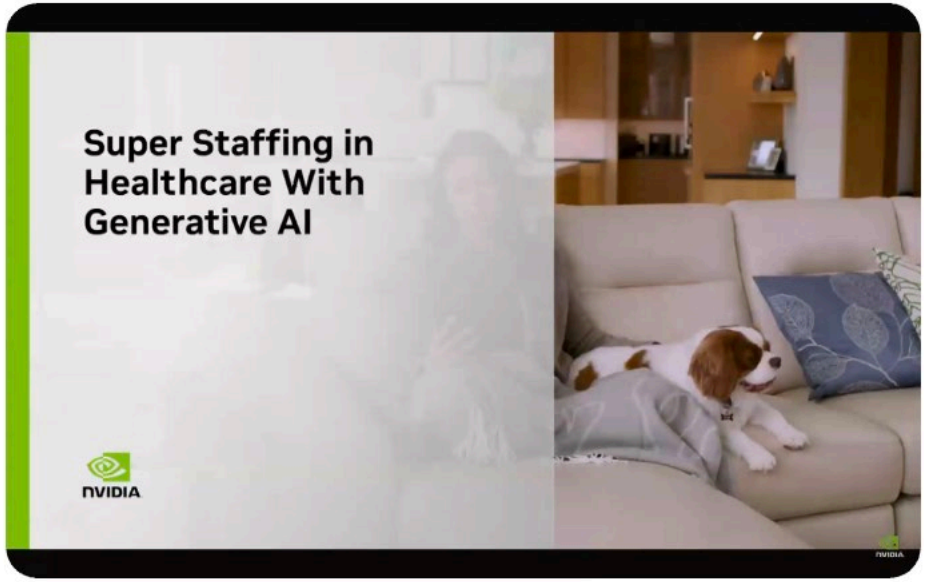
AI Agent Example

Devin: AI Software Engineer Agent



- Devin AI is an advanced software engineer designed to handle complex engineering tasks by planning, executing, and making thousands of decisions autonomously
- Equipped with common developer tools like a shell and code editor, Devin can collaborate with users, recall context, and fix mistakes while providing real-time progress updates and feedback integration.

Hippocratic AI: Healthcare Agents



- AI agent, developed with Hippocratic AI, leveraging advanced technologies like automatic speech recognition and a trillion-parameter LLM, powered by NVIDIA ACE microservices
- Experience seamless, personalized conversations in under a second, backed by insights from 27 health systems

Source: Cognition AI | Hippocratic AI

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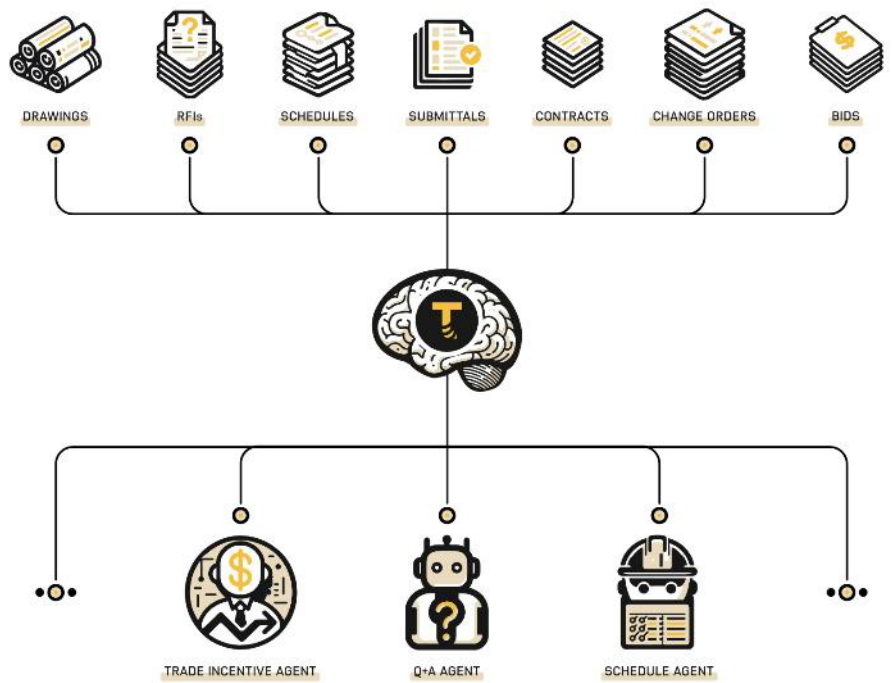
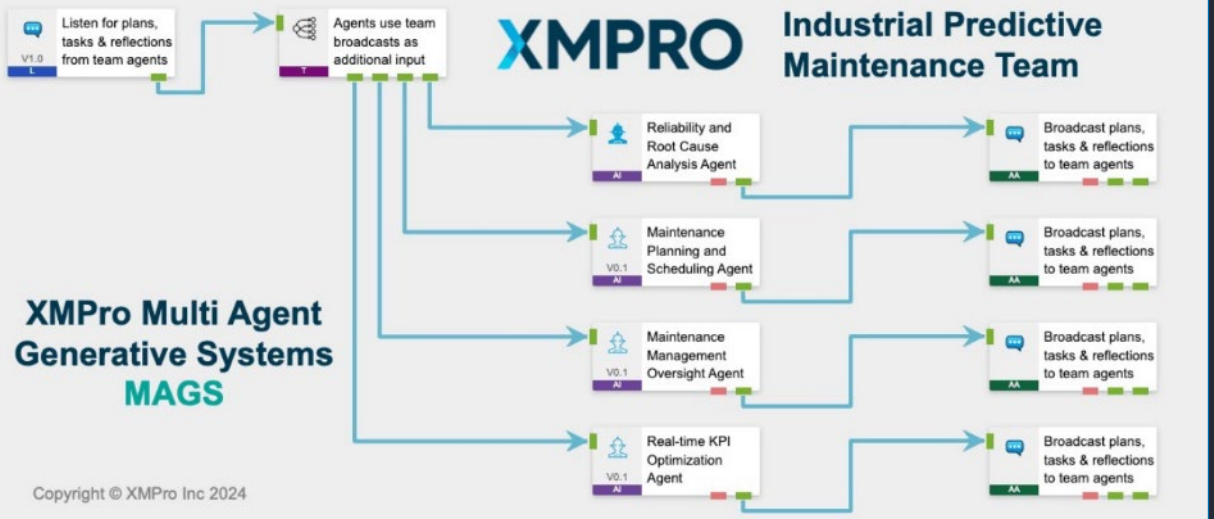
Multi-Agent Systems – Applications



Multi-Agent Systems by Trunk Tools – Construction Management



Multi-Agent Systems by XMPRO – Industrial

Source: Trunk Tools | XMPRO

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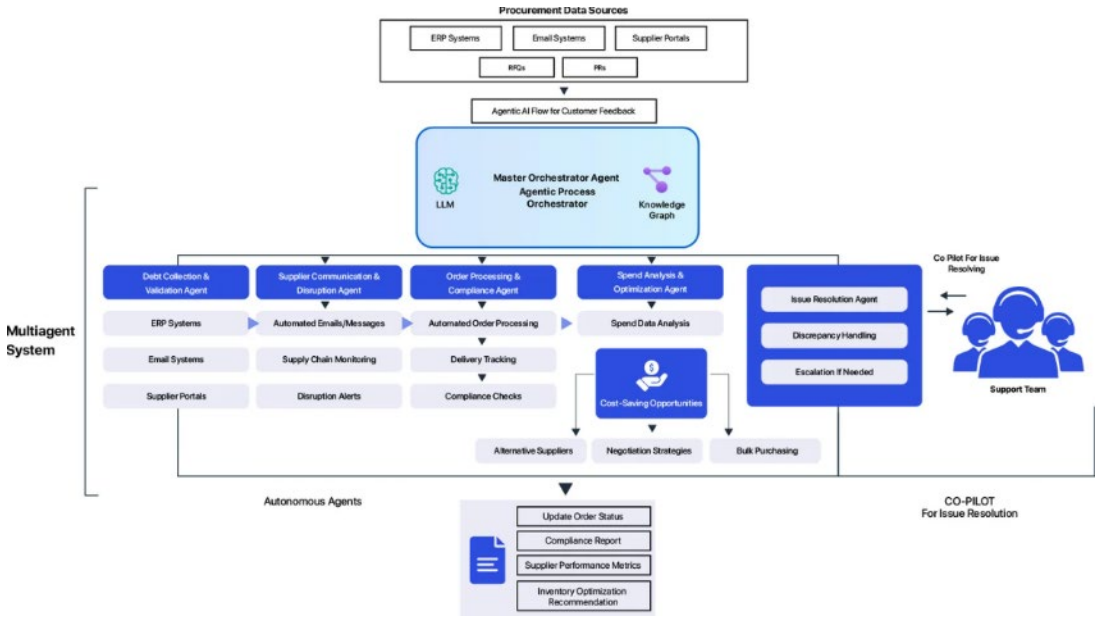
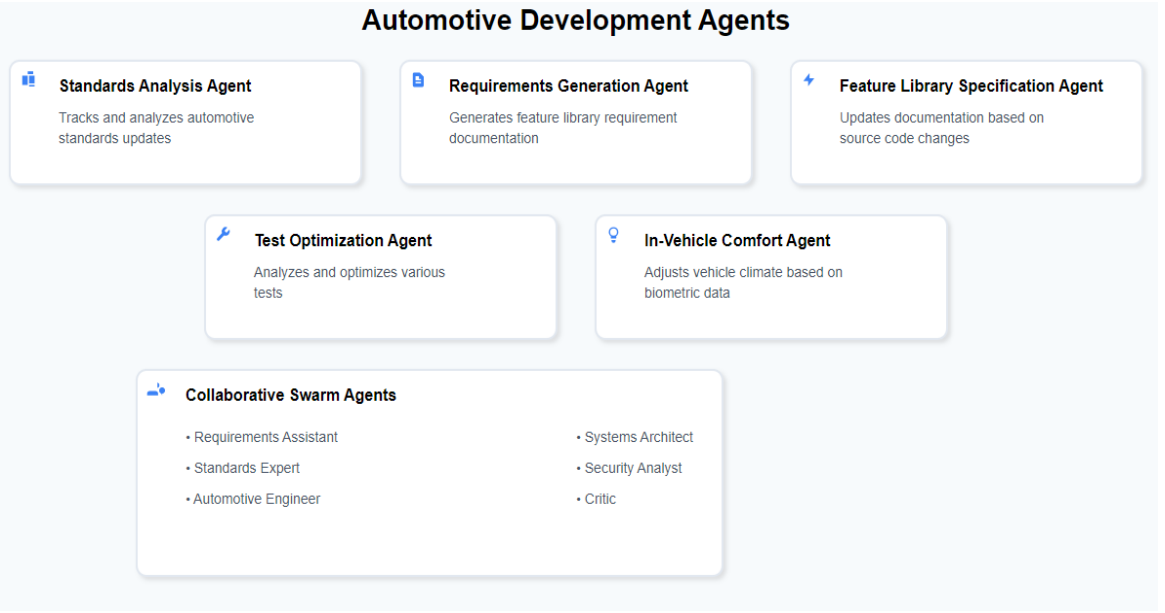
Multi-Agent Systems – Applications



Multi-Agent Systems by Akira.ai – Procurement



Multi-Agent Systems by SODA.Auto – Automotive

Source: Akira.ai | SODA.Auto

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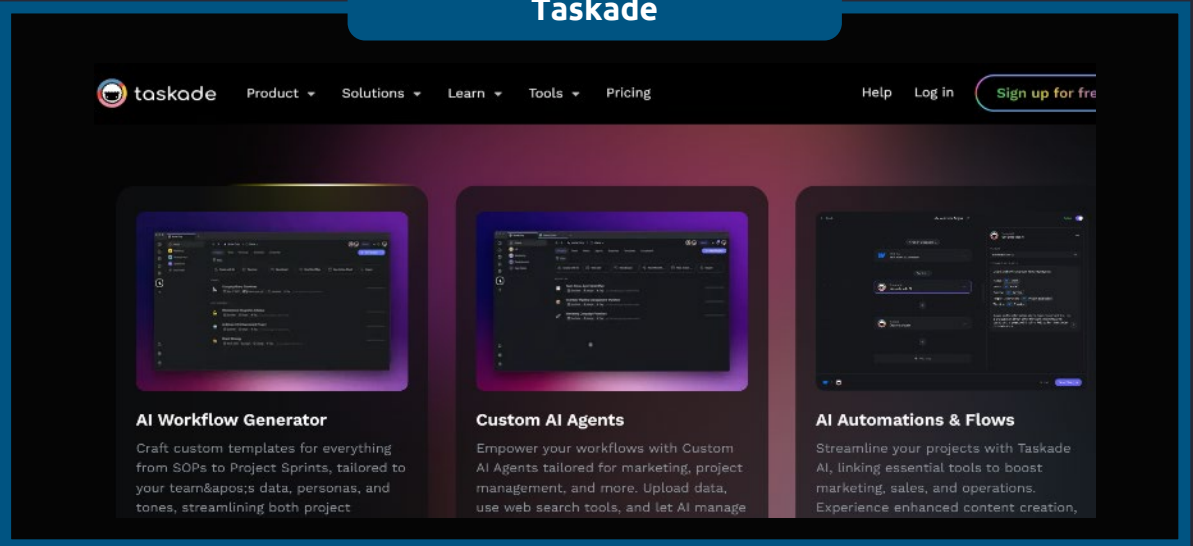
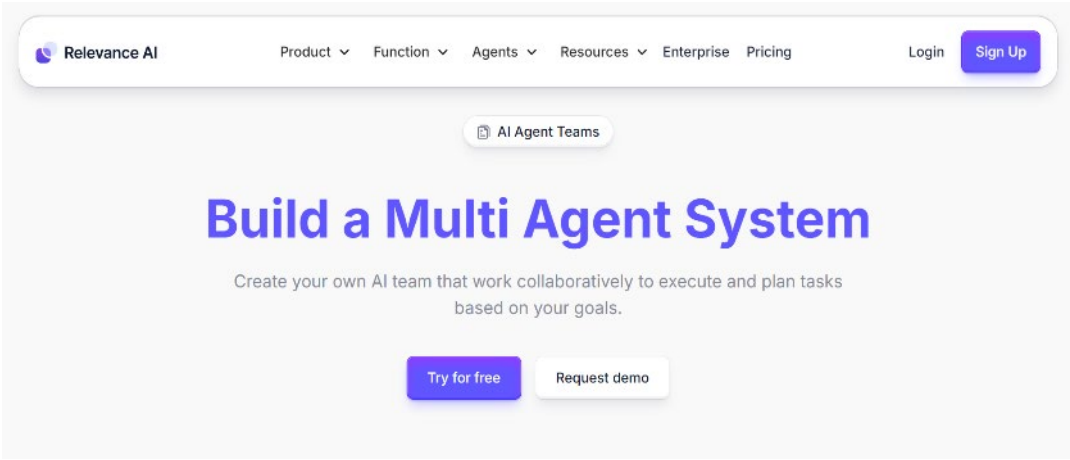
Multi-Agent Systems – No-Code Platforms

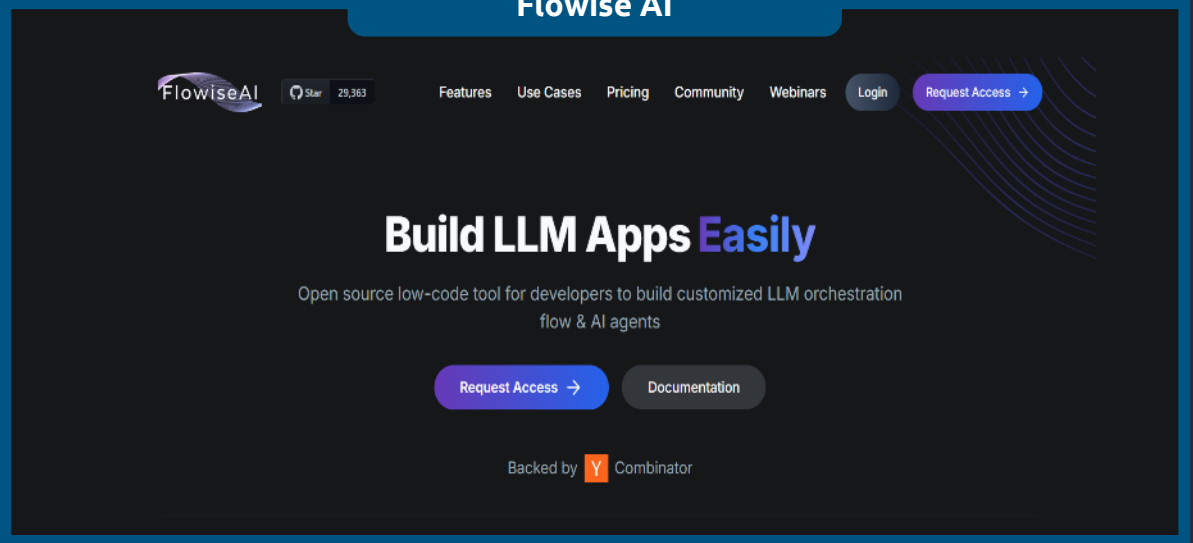
Taskade



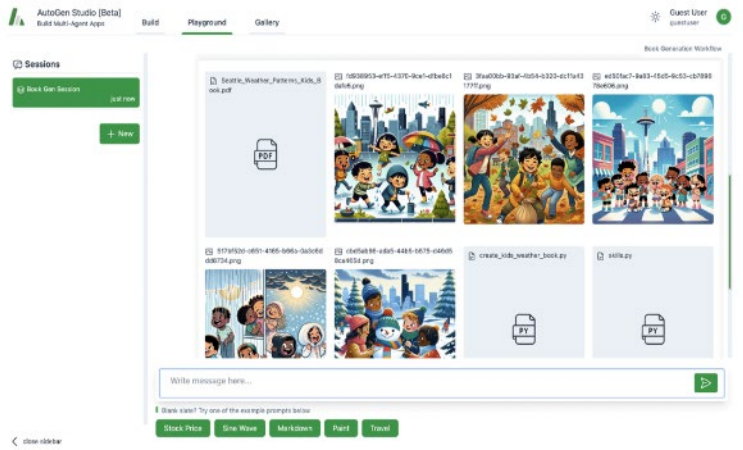
Relevance AI



Flowise AI



Autogen Studio



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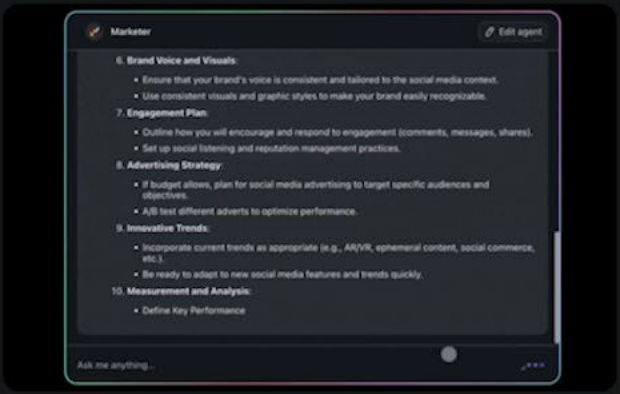
Create your first agent!

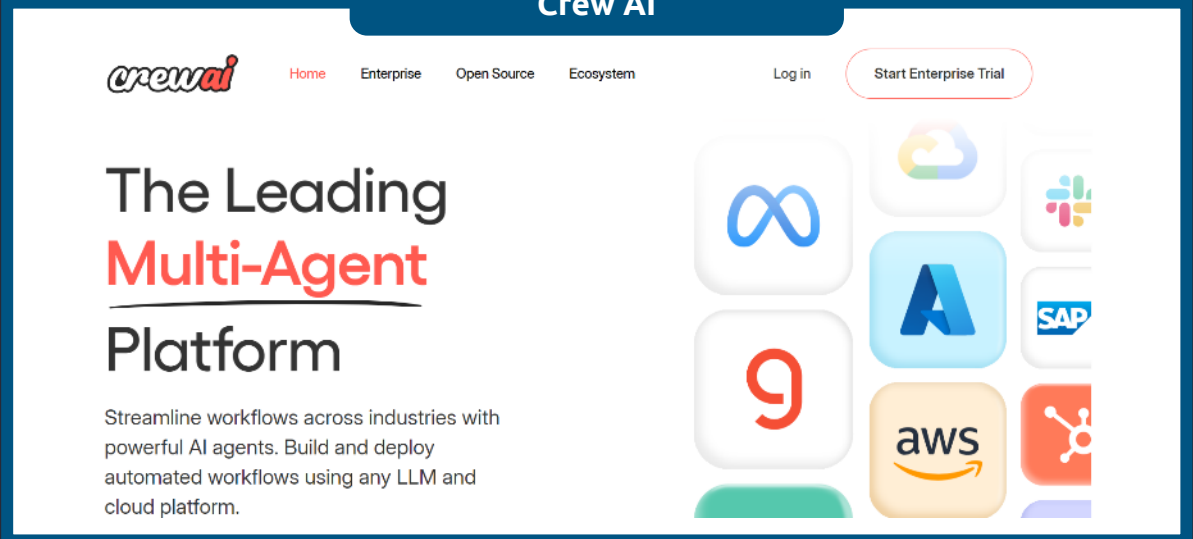
Build and train your virtual team with Taskade. Craft personalized AI Agents, enrich them with your knowledge, and automate tasks through custom commands, web search, and more. Learn more.

Create agent

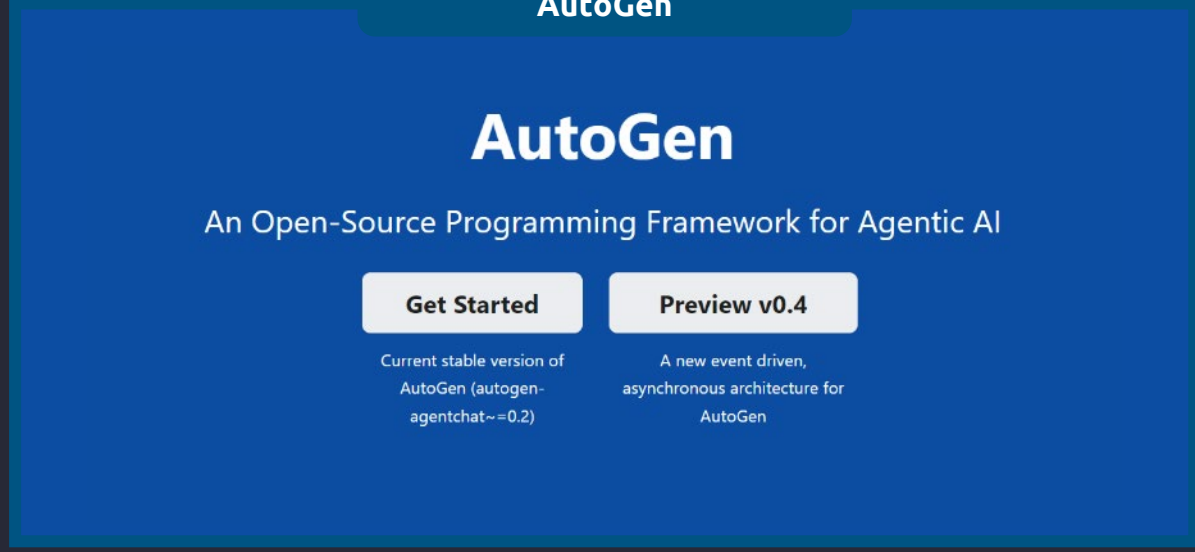


AI Agent and Multi-Agent Systems – Key Frameworks

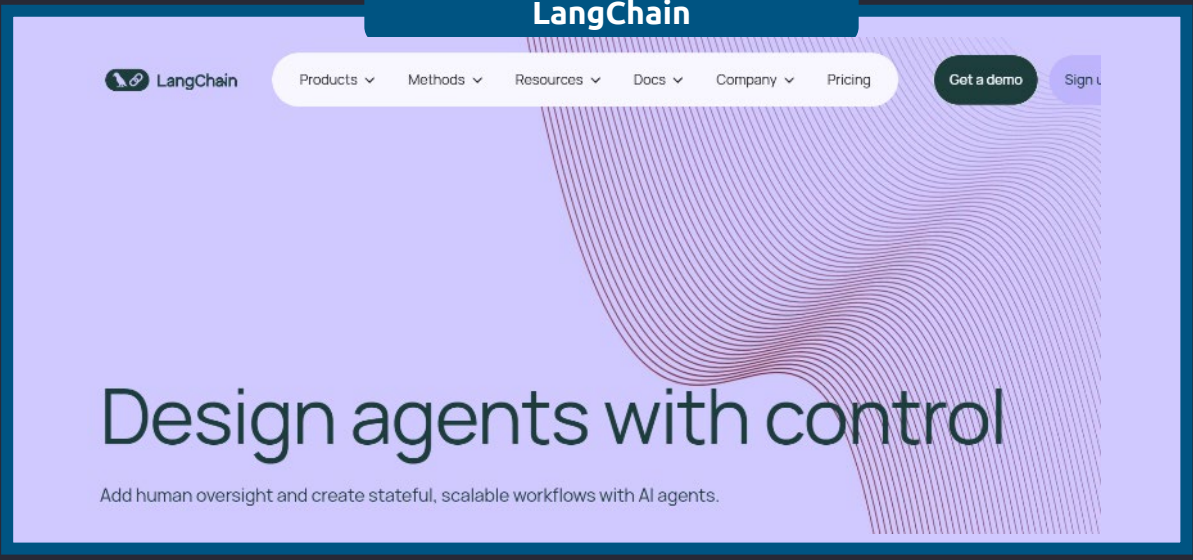
Crew AI



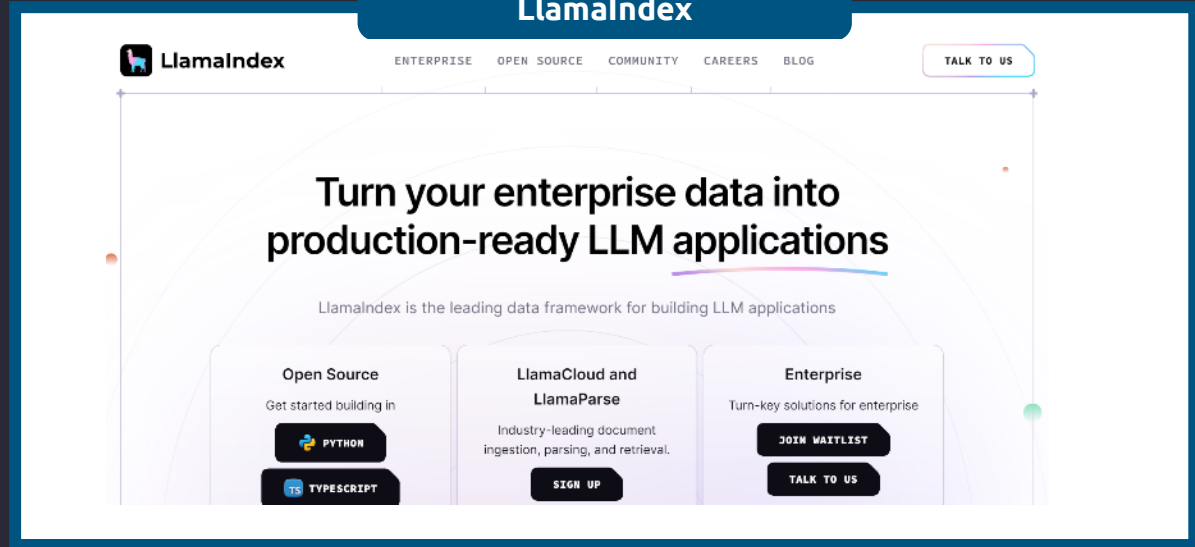
AutoGen



LangChain



LlamaIndex



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PAYMAN

Sign Up For Our Beta!

AI That Pays Humans

Payman gives your AI Agents the ability to have access to capital so that they can pay humans for their expertise in completing specialized tasks they need done.

andreas.sjostrom@capgemini.com

Apply To Be Part Of Our Limited Beta

Email already part of waitlist.

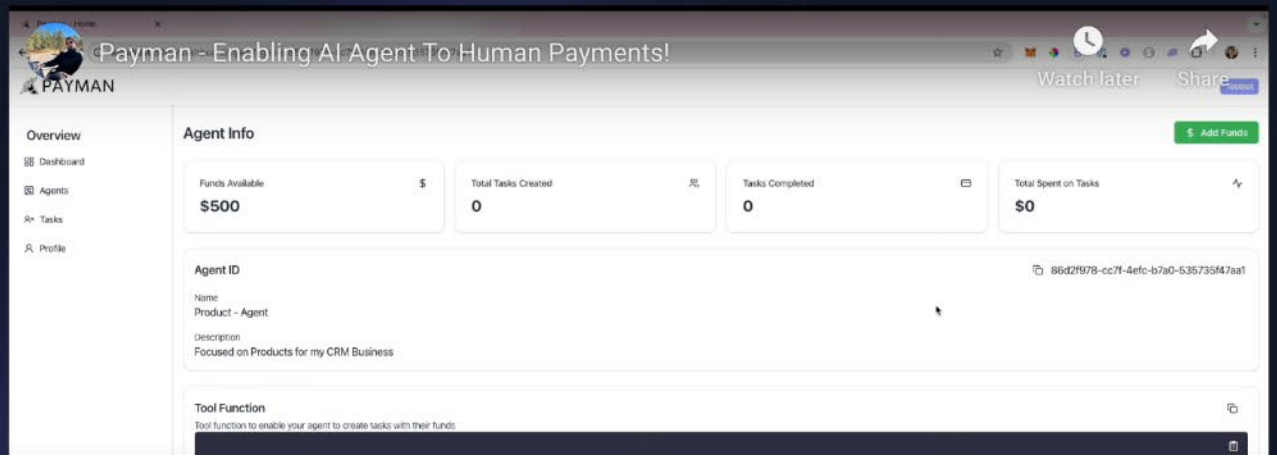
Building Tomorrow's AI-Human Dynamics

Empower Your AI Capital Allocation

Payman simplifies the process by empowering AI agents with the capital they need, no bank account required.

Connect with Skilled Professionals Talent Access

Gain access to a curated network of skilled human professionals ready to complete tasks beyond AI capabilities.



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AI Agent Adoption

AI Agent & Multi-agent Customer Landscape

Frameworks

accenture, ACXIOM, adyen, ally, aurecon, BCG Boston Consulting Group, Clearbit, databricks, DATASTAX, Capgemini, Deloitte., elastic, instacart, KPMG, MOODY'S, ORACLE, pwc, Rakuten, replit, Retool

Leading Enterprises Trust Frameworks like Crew AI, LangChain, and LlamaIndex for Building AI Agents, Multi-Agent Systems, and LLM Applications

No-code Platforms

AUTODESK., descript, e-Magic, HAWKINS ELECTRONIC SERVICES PTY. LTD., redis, Roku, SafetyCulture, Unilever

Enterprises Trust No-Code Platforms Like Relevance AI and Taskade

IT & Software | **Accounting and Professional services** | **Engineering** | **Fintech** | **Retail** | **FMCG** | **Consumer Electronics**

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Your competition transforms to “AI First,” building new AI Agent leveraging capabilities.

New organizations will not be “AI First” ; they will be “AI Only.”

Let’s think together!

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How will you transform your business with access to an abundance of expert talent at near-zero cost?

Let’s think together!

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Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2023 global revenues of €22.5 billion.

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