

DO NOT REMOVE – v2

Presentation Cleaning Notes – RK / JH

- Fonts changed in some spots to CiscoSans
- Compulsory slides added
- Titles changed to sentence case
- Page numbers added
- @ Speaker please check comments left on Slides 7 & 12
- JH 31/10 – updated title slides to title case and headers/body to sentence case. Updated colours to CL brand. Changed ampersands to “and”. Aligned content within guides wherever possible. Updated fonts to CiscoSansTT light. Updated header sizing for consistency.

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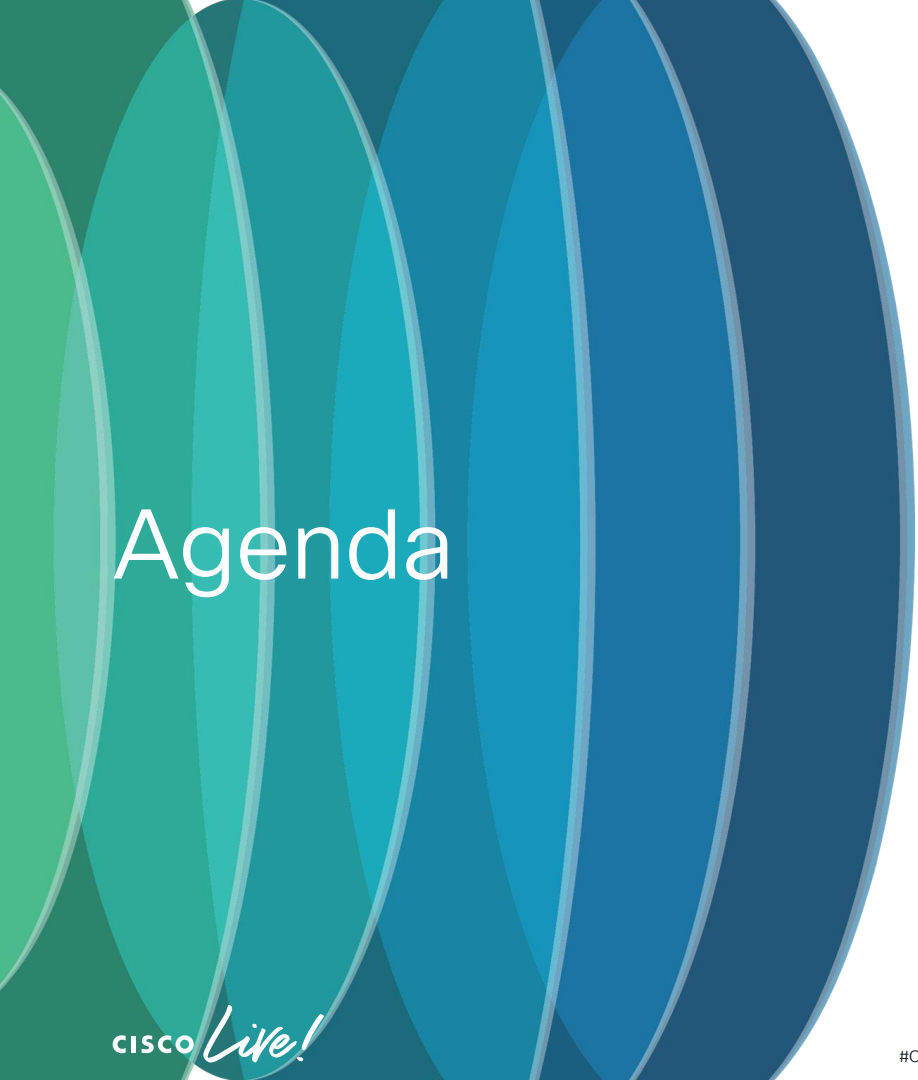
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Let Generative AI Agents Do the Work for You

Flo Pachinger, Developer Advocate
@flopachinger
DEVNET-2594



Agenda

1. Recap of AI
2. AI agents 101
3. Architecture
4. Agent frameworks



@flopachinger
flopach

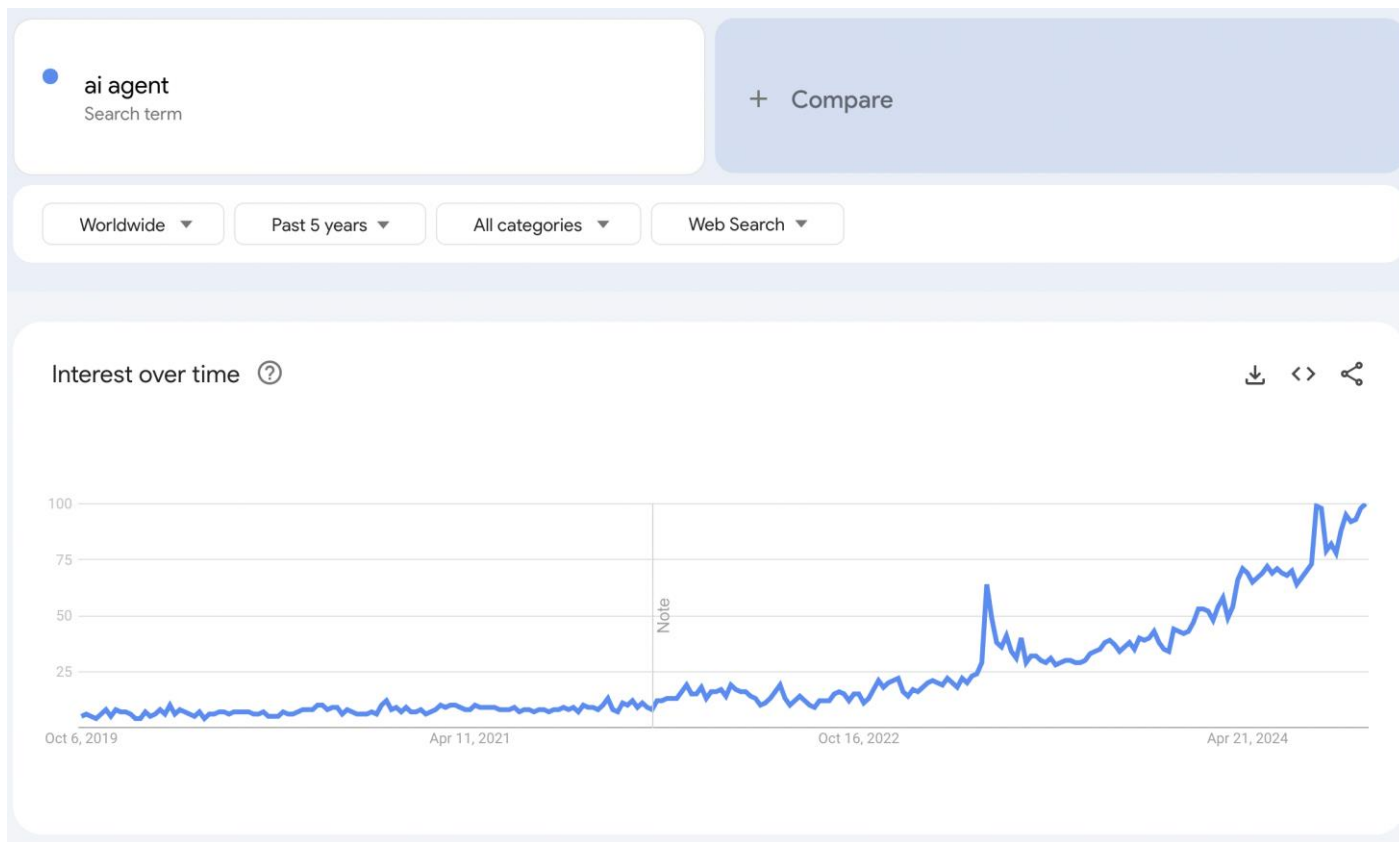
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Flo Pachinger

Developer Advocate

- Focusing on data and AI
- Based in Vienna, Austria
- **DevNet projects:**
 - API+Code assistant for Catalyst Center
 - Creator of johann (network monitoring tool)
 - Po Robot Arm Challenge @ CiscoLive 2022
 - Play Minecraft on Catalyst 9300 Switch



FT Financial Times

OpenAI bets on AI agents becoming mainstream by 2025

1 week ago

V The Verge

Agents are the future AI companies promise — and desperately need

OpenAI, Google, and Microsoft believe autonomous AI agents are the next best way to monetize LLMs.

2 hours ago



F Forbes

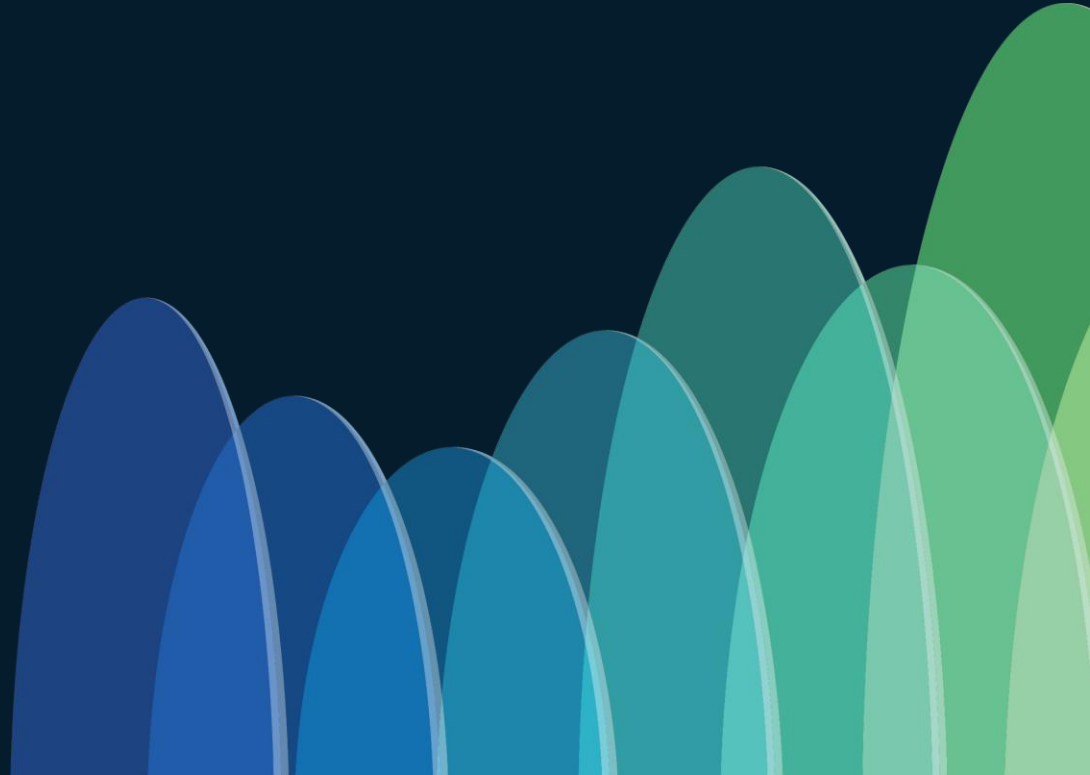
AI Agents Will Be The Key To Achieving ROI From AI

What Is An AI Agent? An agent is a composite and autonomous application that enables humans and AI to collaborate to complete a task. The...

2 weeks ago



AI Recap



*“The ability of a **digital computer or computer-controlled robot** to perform tasks commonly associated with intelligent beings”*

AI definition of Encyclopædia Britannica

Deep learning / LLM models: 2 Stages

Training

- Teaches the model to do specific tasks using existing data
- Powerful and many GPUs needed*

Inferencing

- Uses the trained model to make decisions
- Some GPUs needed*

GenAI architecture approaches

Prompt engineering

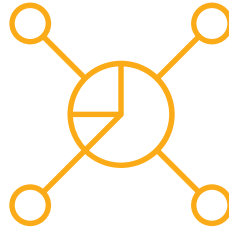
Retrieval augmented generation (RAG)

Model fine-tuning

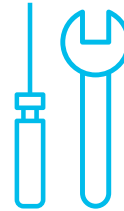
Pre-train from scratch



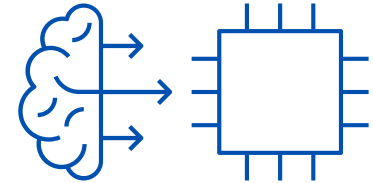
Natural language text describes the tasks for the model



Retrieving external knowledge for LLM-input



Enhancing the pre-trained base model with specific datasets



Training the LLM from scratch

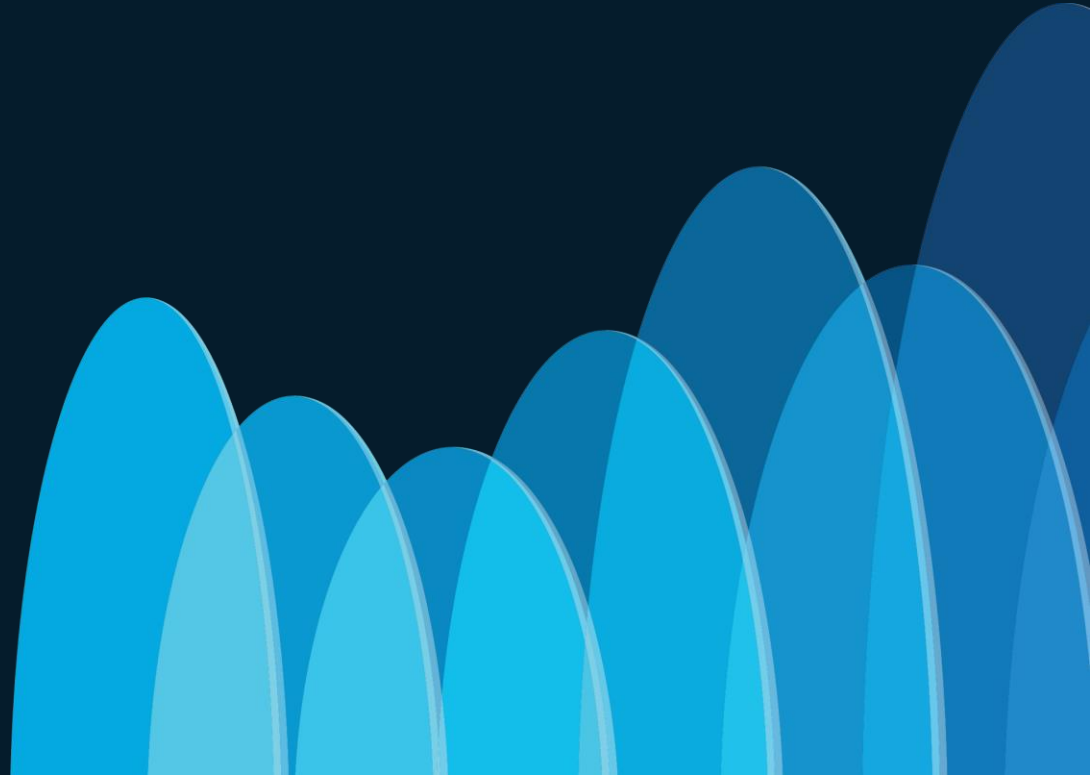
← lower *Costs and compute-intensiveness* higher →

What is an AI agent?

- **Autonomous unit programmed to:**
 - Perform tasks
 - Make decisions
 - Communicate with other agents



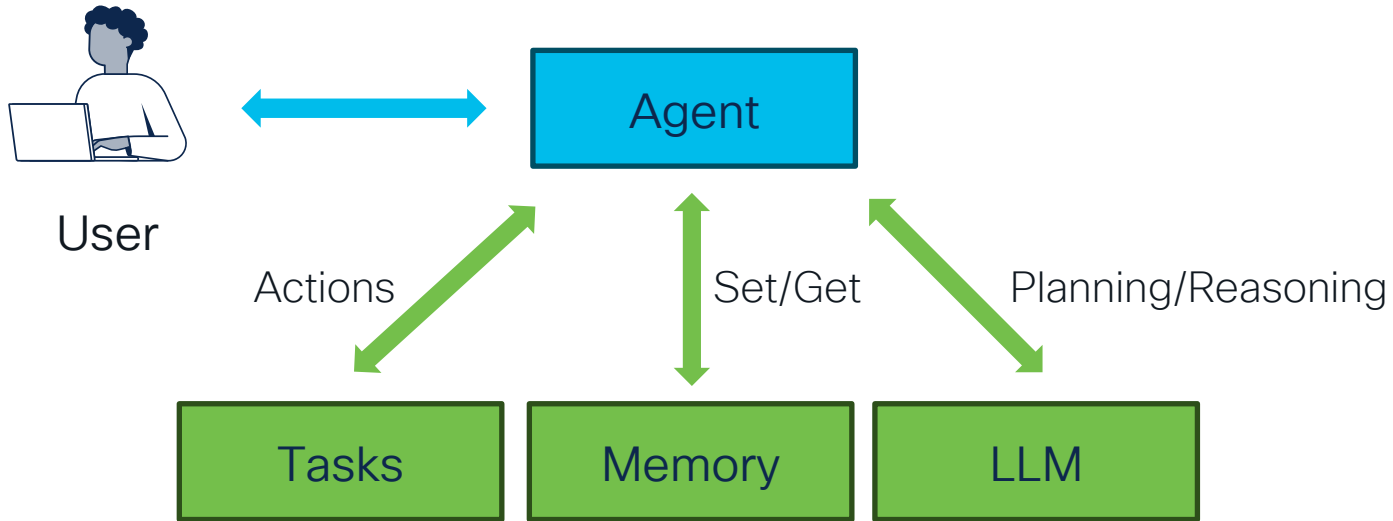
AI Agent Example Demo



AI Agents Architecture



AI agents architecture



Current AI agents frameworks landscape

Name	Creator	Description	Github Stars
Autogen	Microsoft	A programming framework for agentic AI	31.8k
Super AGI	SuperAGI	A dev-first Open-Source autonomous AI agent framework.	15.4k
crewAI	crewAllnc	Framework for orchestrating role-playing, autonomous AI agents.	19.9k
AgentGPT	reworkd	Assemble, configure, and deploy autonomous AI Agents in your browser.	31.5k
Langchain/ Langgraph	Langchain	framework for developing applications powered by large language models (LLMs)	93.3k

Outlook

- Expected to see **further integration in everyday life** (e.g., healthcare, finance, education).
- Advancements in **multimodal AI** (combining text, speech, and visuals) will make agents more versatile.
- Growing emphasis on **ethical AI development** and responsible use.
- **Collaborative AI**: More human-AI collaboration, improving productivity in hybrid work environments.
- Autonomous AI Agents: AI will handle more **autonomous decision-making** without human intervention.

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Thank you

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