

How 11x Rebuilt Their Alice Agent: From ReAct to Multi-Agent with LangGraph | LangChain Interrupt

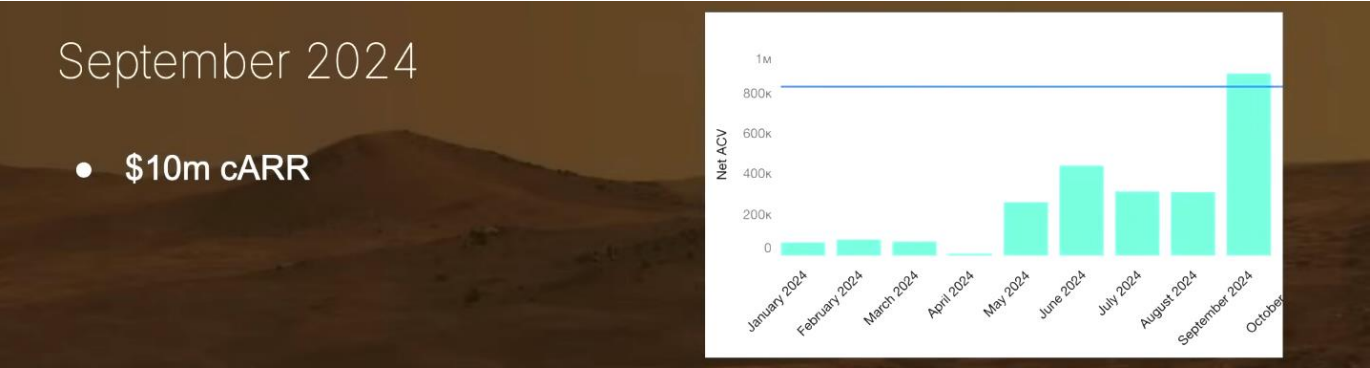
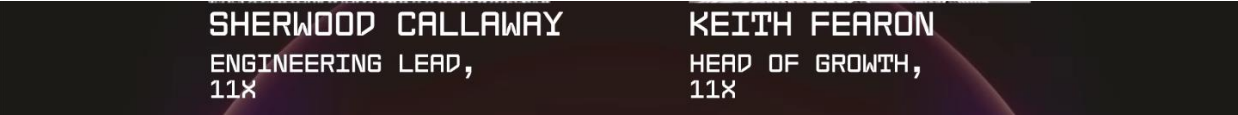
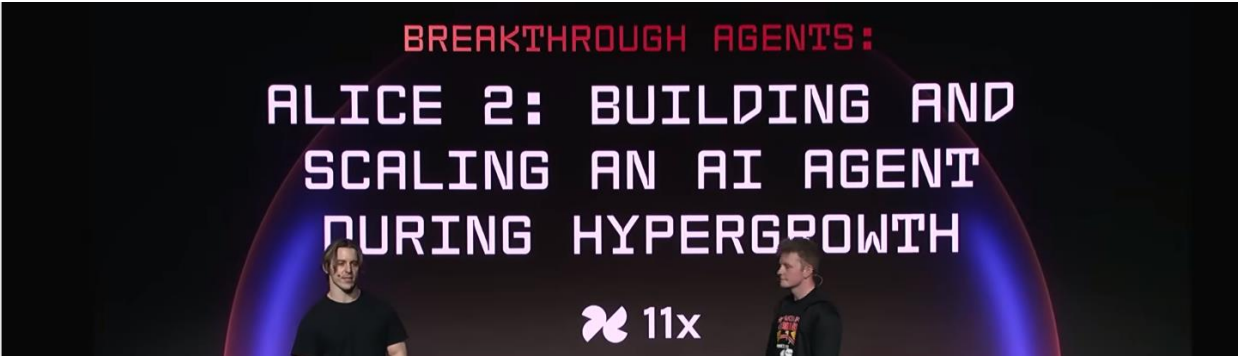
 **LangChain**
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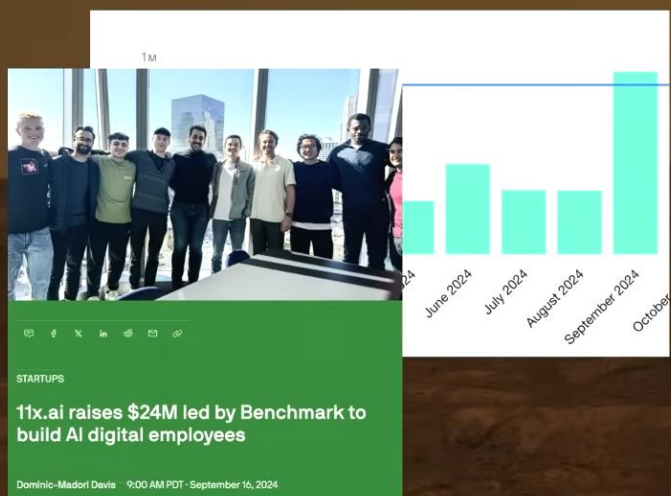
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11x's Sherwood Callaway and Keith Fearon share how they rebuilt their AI SDR Alice from scratch, detailing their architectural journey from ReAct agents to multi-agent systems using our agent stack -- LangGraph, LangGraph Platform, LangSmith, and LangChain. Learn about real-world agent architecture decisions, challenges faced, and practical lessons from building production AI agents.



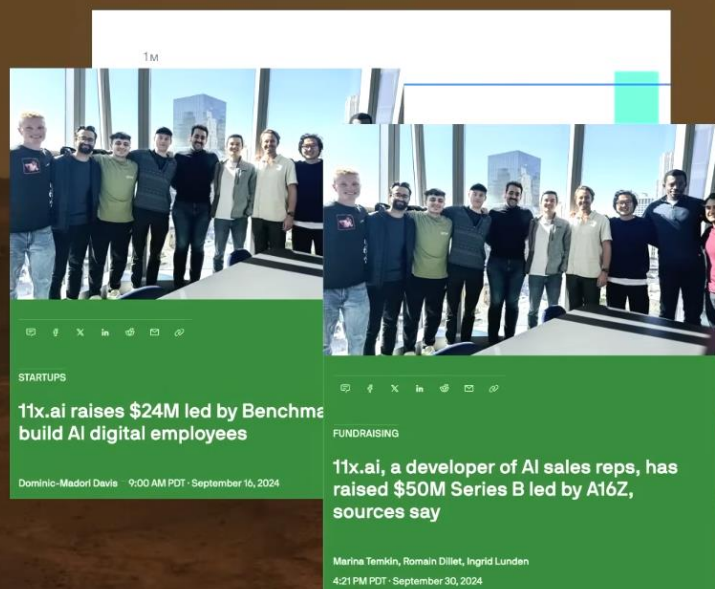
September 2024

- \$10m cARR
- Series A announced



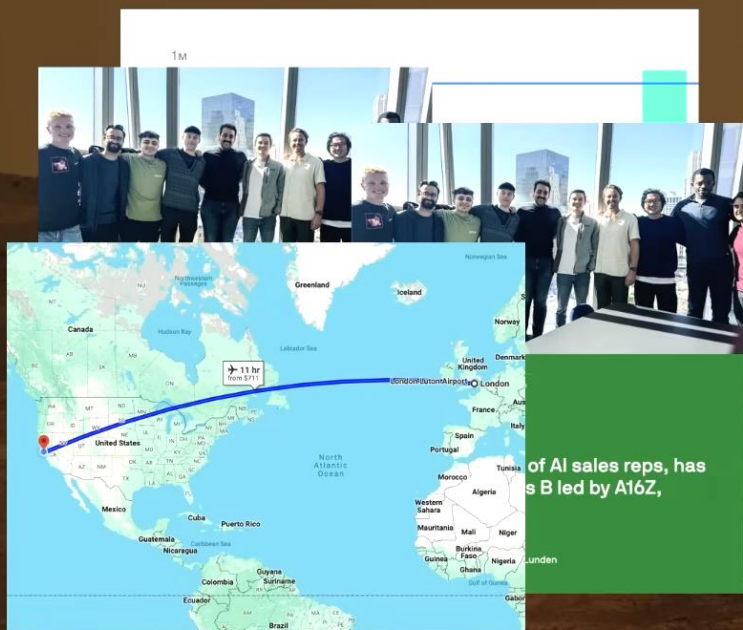
September 2024

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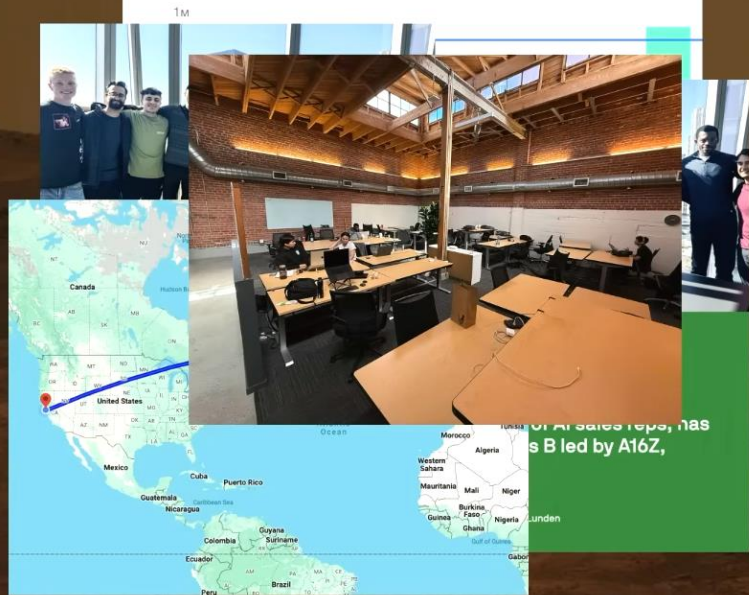
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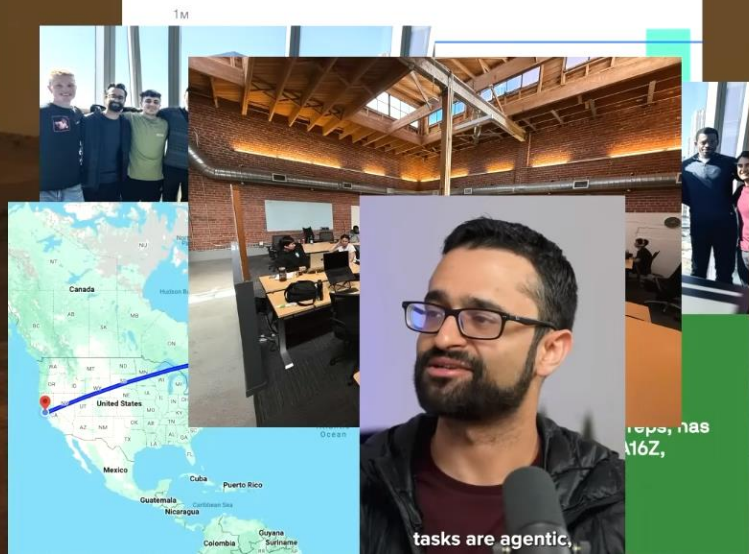
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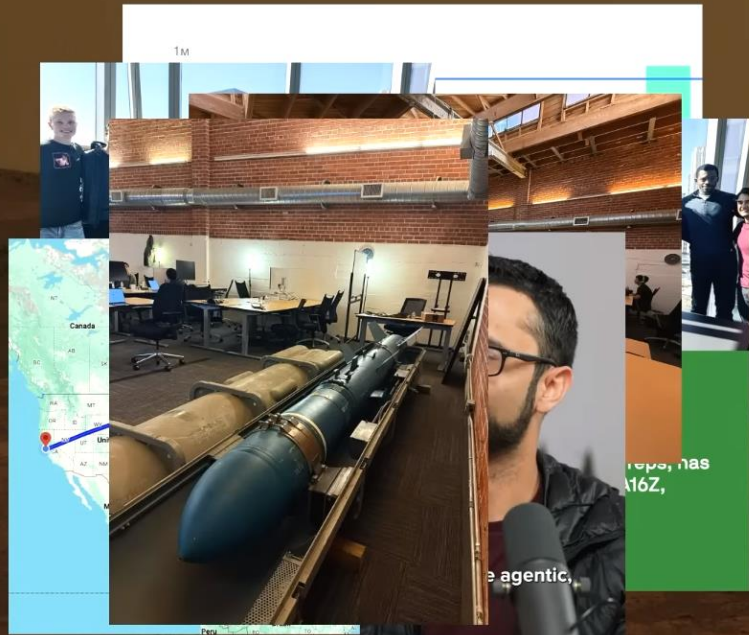
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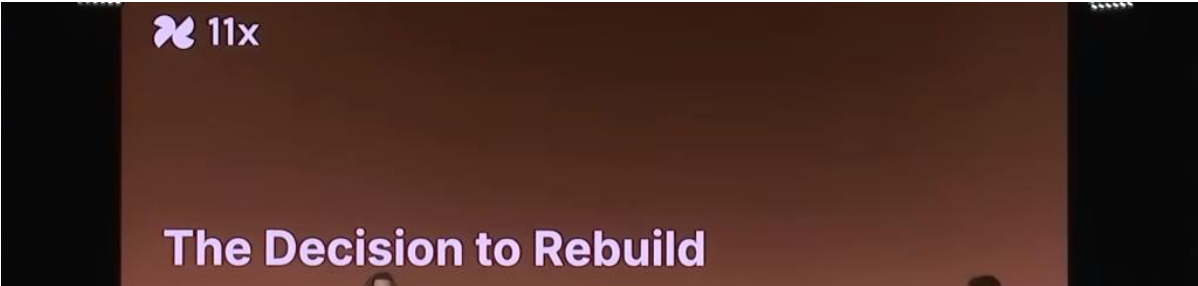
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- New CTO



September 2024

- \$10m cARR
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- New CTO
- Rocket?!





Define Audience

Describe Offer

Create Sequence

Adjust Messaging

Launch

11x

Establish ICP

Set Offer

Confirm Outreach

Automate

Campaign name...

Ideal Customer Profile

Current Job Title

Software Engineer

Department

Search Departments

Seniority

Manager

Company HQ Location

San Francisco Bay Area

Contact Location

New York, ...

Industries

Artists and Activists ...

Industry Keywords

Fintech, VR, SaaS, AI...

Company Headcount

501-1,000

Technologies

...

Preview Leads

220 estimated leads

Jean-philippe Monette

Lead Software Engineer

Komodo Health

Javier Guignard

Software Engineer Man...

Platzr

Muhammad Saqlain

Lead Software Engineer

Folio3 Software

Daryl Foster

Lead Software Engineer

Collective Health

Muttahir Rasheed

Lead Software Engineer

Folio3 Software

Sameer Siddiqui

Lead Software Engineer

Folio3 Software

Abhishek Nebh

Lead Software Engineer

Ymi

Tiago Catita

Lead Software Engineer

Cisco Thousandeyes

Kushal Gupta

Lead Software Engineer

Pixis

Kevin Huang

Lead Software Engineer

Boku

Faisal Maqsood

Lead Software Engineer

Folio3 Software

Qasim Javed

Lead Software Engineer

Folio3 Software

Creating a custom AI campaign creation workflow

Define Audience

Describe Offer

Create Sequence

Adjust Messaging

Launch

17x

Establish ICP

Set Offer

Confirm Outreach

Automate

Untitled Campaign

Step 1

Hey Jean-Philippe

Send after 0 days

Step 2

(Previous Subject)

Send after 2 days

Step 3

(Previous Subject)

Send after 2 days

Step 4

(Previous Subject)

Send after 2 days

Subject

Hey Jean-Philippe

Personalize Subject

Hey Jean-Philippe ,

I noticed your RSS/Atom library has achieved 480k weekly downloads -impressive scale. Given your work with healthcare data analytics at Komodo Health, you might be interested in how our framework simplifies complex LLM workflows, especially when dealing with multiple integrations across healthcare data systems.

Our platform, with 100+ pre-built integrations and 60+ supported models, is helping 100K+ developers streamline their AI application development. The modular framework significantly reduces integration complexity while maintaining enterprise-grade scalability - something I believe would resonate with your focus on technical excellence and scalable solutions.

Interested in learning more?

Thanks,

Sherwood

Example Lead: Jean-Philippe Monette
Lead Software Engineer at Komodo Health

Regenerate

Insert variable

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Example Lead: Jean-Philippe Monette
Lead Software Engineer at Komodo Health

Regenerate

Insert variable

Alice 1 was a major success...

1.8M Leads Sourced

5M Emails Sent

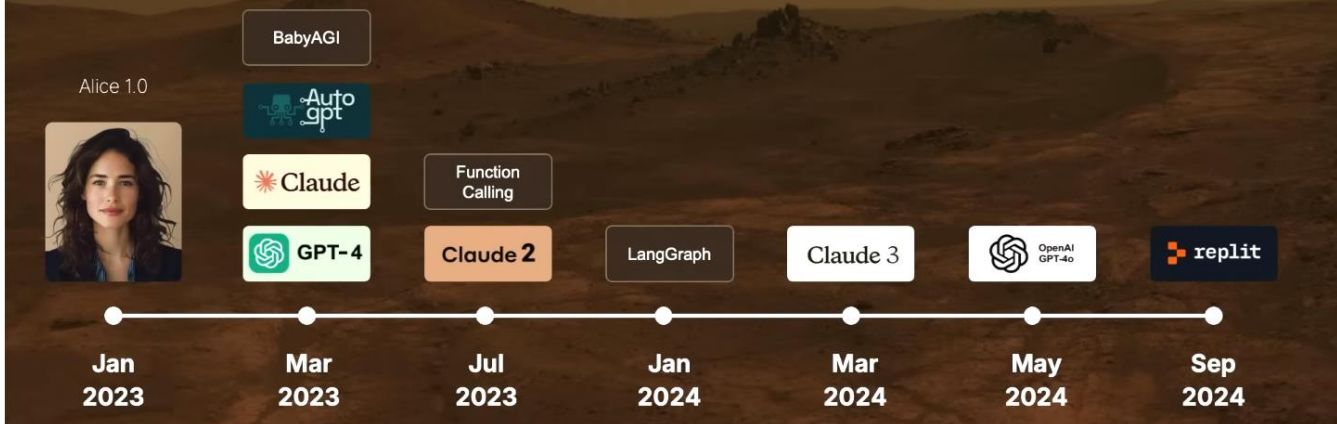
Replies

2% Reply Rate
On-Par with Human SDRs

But not a true digital worker

- Lots of button-clicking
- Manual input required (offers)
- Basic lead research
- “Meh” personalization
- No automatic replies

Meanwhile, the industry was evolving...



A sneak-peek into the future of software



Our vision for Alice 2

Chat Interface

Knowledgebase

Agentic Lead Sourcing

Deep Research

True Personalization

Automatic Replies

Self-Learning

Rebuilding Alice








The mission

- 3 months
- 2 engineers
- 1 product manager (Keith!)
- 300 customers to migrate

Key decisions

1. Start from scratch
2. Don't reinvent the wheel
3. Leverage vendors to move fast

Tech stack

| | | |
|-------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Application |  React |  TypeScript |
| APIs |  GraphQL | {REST:API} |
| Compute |  Amazon ECS |  docker |
| Database |  Amazon Aurora PostgreSQL |  OpenSearch |

Vendors (pt. 1)



Smartlead

Email Deliverability



Ampersand

CRM Integrations



Inngest

Events & Webhooks



Tavily

Web Search



Firecrawl

Web Scraping



Anthropic

LLMs

Vendors (pt. 2)



Stytch

Authentication



CloudGlue

Video RAG



OpenAI

LLMs



LlamaIndex

Document Parsing



Pinecone

Vector DB & Embeddings



Letta

Agent Framework

Partnering with LangChain

Industry Leader

Agent Framework

Cloud-Hosting

Observability

Familiar from Alice 1

TypeScript

Customer Support

LangChain products we use



LangChain SDK

LLM Calls



LangGraph SDK

Agent Framework



LangGraph Platform

Agent Cloud-Hosting

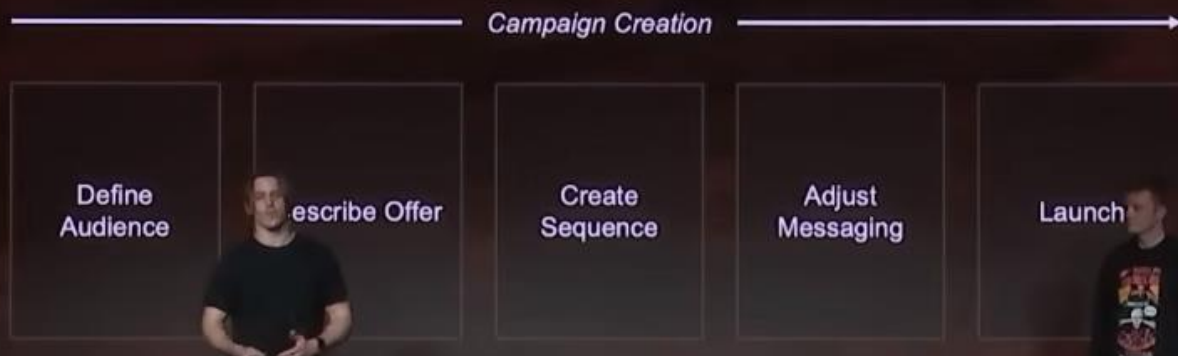


LangSmith

Observability

Finding the Right Agent Architecture

Alice should guide users through campaign creation



We tried three different agent architectures

1. ReAct
2. Workflow
3. Multi-agent

ReAct

Overview

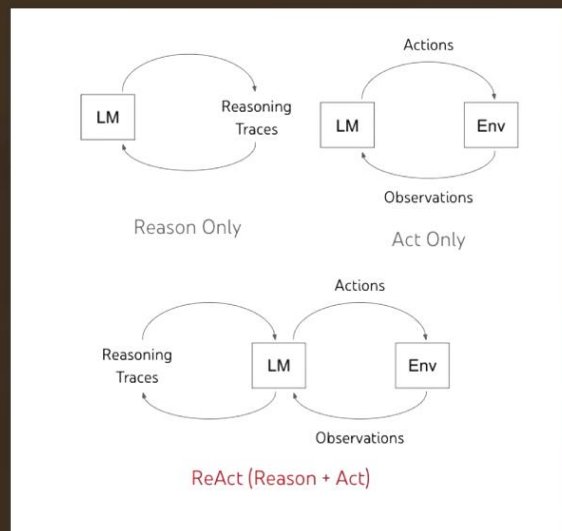
Invented by Google in 2022

Short for Reason + Act

Execution loop is split into three parts:

1. Reason
2. Act
3. Observe

Reasoning traces → better performance



ReAct

Our implementation

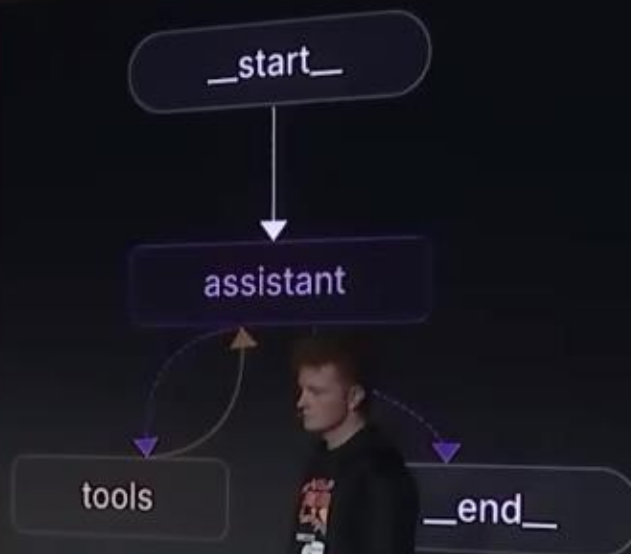
1 node

10+ tools

ReAct loop is implemented inside "assistant" node

Action = tool call

Graph runs to completion for every turn



ReAct

Tools

createCampaign

createAudience

createSequence

createSequenceStep

webSearch

webScrape

getLeadSearchSchema

runLeadSearchQuery

writeEmail

reviewEmail

writeLinkedInMessage

reviewLinkedInMessage

What to know about tools

- Necessary to take action
- Necessary to access info beyond the context window (RAG)
- Can be used to call other agents
- Preferable over "skills" (calculator vs. mental arithmetic)

Strengths of the ReAct architecture

- Simple
- Great at handling arbitrary user input over multiple turns

Issues with the ReAct architecture

- Bad at tools
- Infinite loops
- Recursion limit errors
- Mediocre outputs (audiences, sequences, emails, etc.)

How can we address these issues?

Workflow

Overview

“Systems where LLMs and tools are orchestrated through predefined code paths”

Not the same as agents

Highly-structured

Not a new technology (see: Airflow)

What are agents?

"Agent" can be defined in several ways. Some customers define agents as fully autonomous systems that operate independently over extended periods, using various tools to accomplish complex tasks. Others use the term to describe more prescriptive implementations that follow predefined workflows. At Anthropic, we categorize all these variations as **agentic systems**, but draw an important architectural distinction between **workflows** and **agents**:

- **Workflows** are systems where LLMs and tools are orchestrated through predefined code paths.
- **Agents**, on the other hand, are systems where LLMs dynamically direct their own processes and tool usage, maintaining control over how they accomplish tasks.

Workflow

Our implementation

15 nodes

5 stages

Graph does NOT run to completion for every turn

Uses “node interrupts”



The 5 stages correspond to the different stages of a campaign creation

Workflow

Strengths of the workflow architecture

- Tools are replaced with specialized nodes
- Clearly-defined execution flow with fixed number of steps
- High-quality outputs (audiences, sequences, emails, etc.)

Workflow

Issues with the workflow architecture

- Complex
- Doesn't support "jumping around" within campaign creation flow

What else can we try?

Multi-Agent

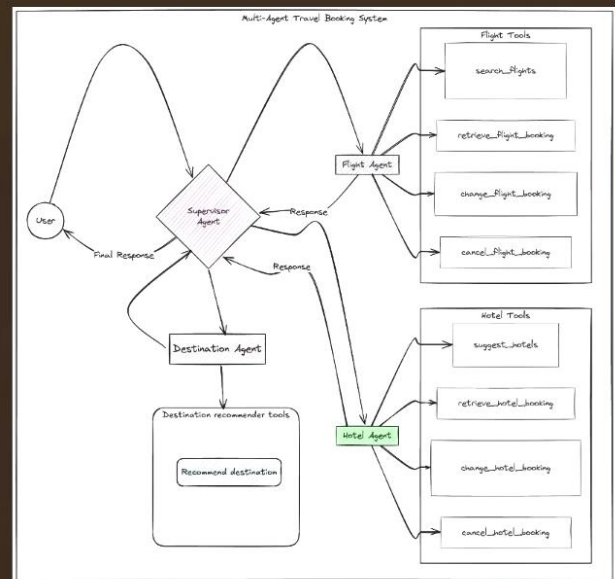
Overview

Hierarchical

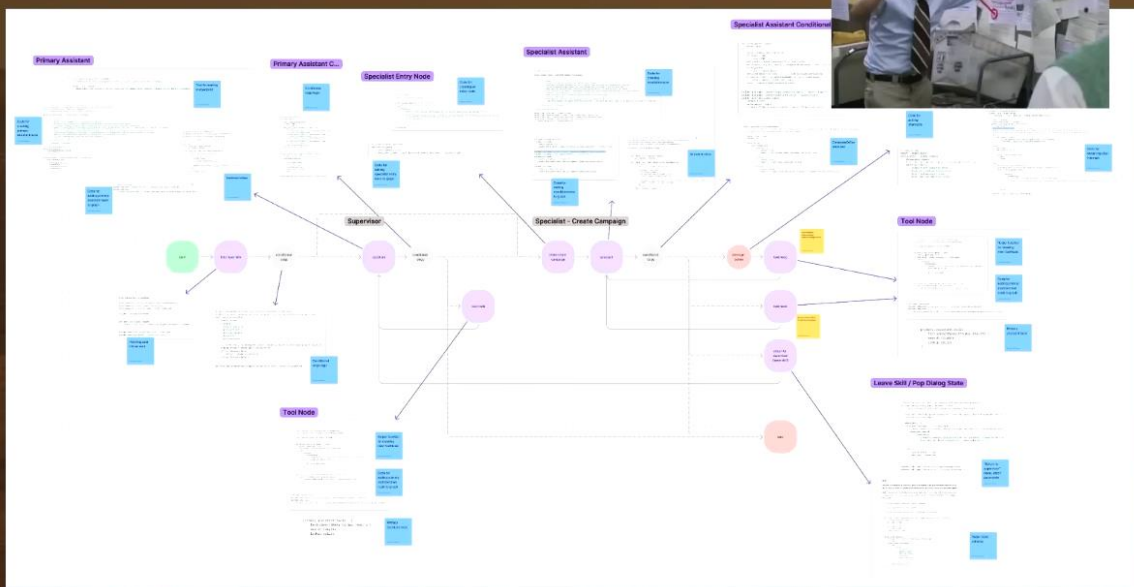
1 supervisor + N sub-agents

Supervisor interacts with user; routes tasks to sub-agents

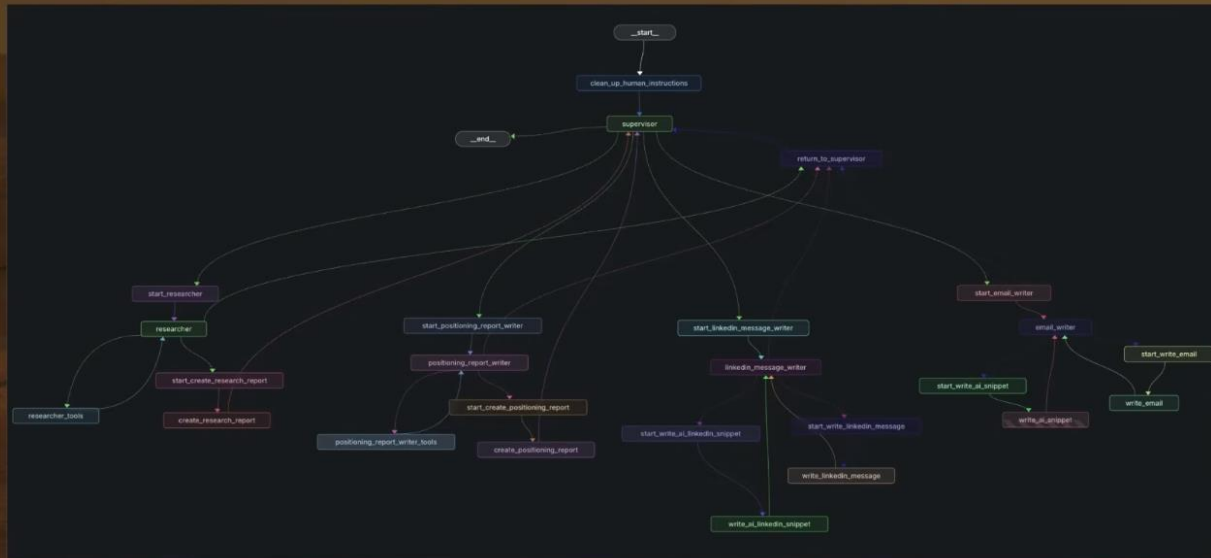
Sub-agents fulfill tasks; escalate to back to supervisor



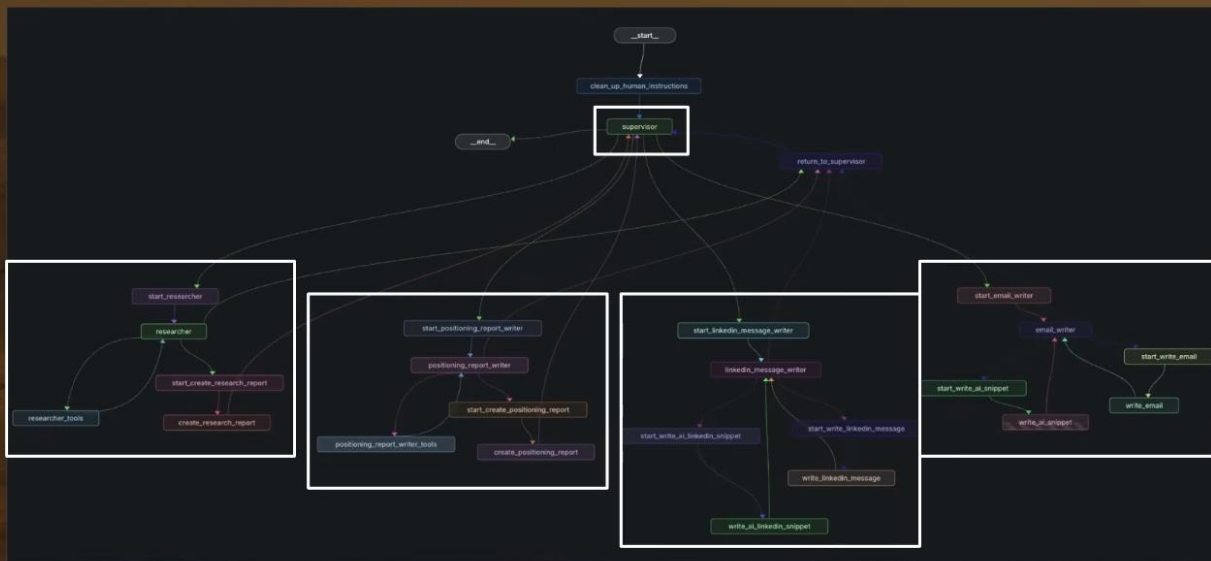
Multi-Agent



Multi-Agent



Multi-Agent



The multi-agent architecture gave us both flexibility and performance

| | Multi-Agent | ReAct | Workflow |
|-------------|-------------|-------|----------|
| Flexibility | ✓ | ✓ | ✗ |
| Performance | ✓ | ✗ | ✓ |

Reflections on building agents

- Simplicity is key
- A new model can change everything
- Think of your agent as a human coworker (or a team of humans)
- Break big tasks down into smaller tasks
- Tools > skills
- Don't forget about prompt engineering!

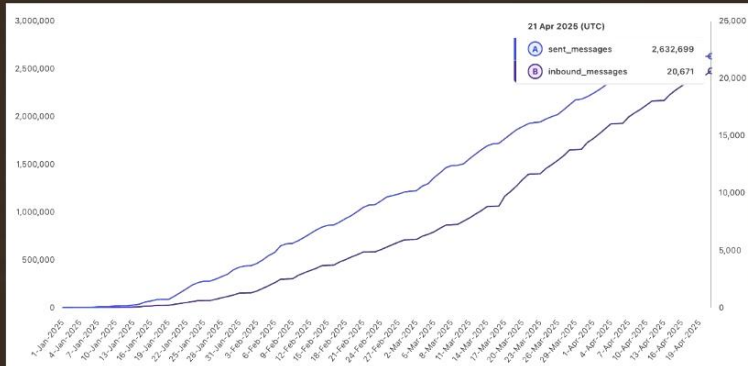
11x

Demo



https://youtu.be/ggrLrRy_mRE

Since Alice 2 went live...



1.5M Leads Sourced

2.6M Message Sent

21K Replies

Future plans

Alice x Julian

Self-Learning

**Computer-Use,
Memory & RL**

We're hiring!

All roles

In-person 5 days / week

Located in downtown San Francisco

11x.ai/careers

Thank you



Sherwood Callaway

sherwood@11x.ai

X: @realshcallaway



Keith Fearon

keith@11x.ai