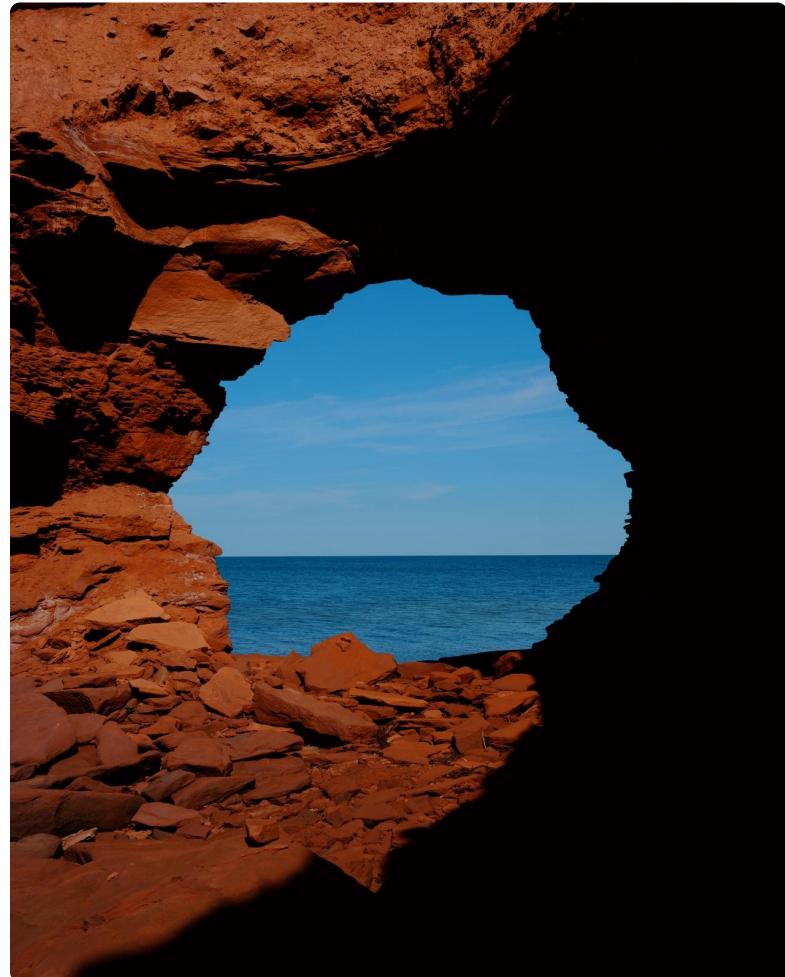


Making “agents” actually work for you



Joe Beutler
Head of Solutions
Engineering, Strategics



The “Agent” Meme





Let's solve 2 problems

1. Understand what Agents are + what they're not.
2. Learn to push them to do work that would be impossible without them.



Defining Agents

Agents are systems that can **independently** accomplish tasks on your behalf

Agents use an **LLM** to execute **instructions** and make decisions. They have access to **tools** to gather context and take actions, always operating within clearly defined **guardrails**.

Agent =

- + Model
- + Instructions
- + Tools
- + Guardrails



Agent?

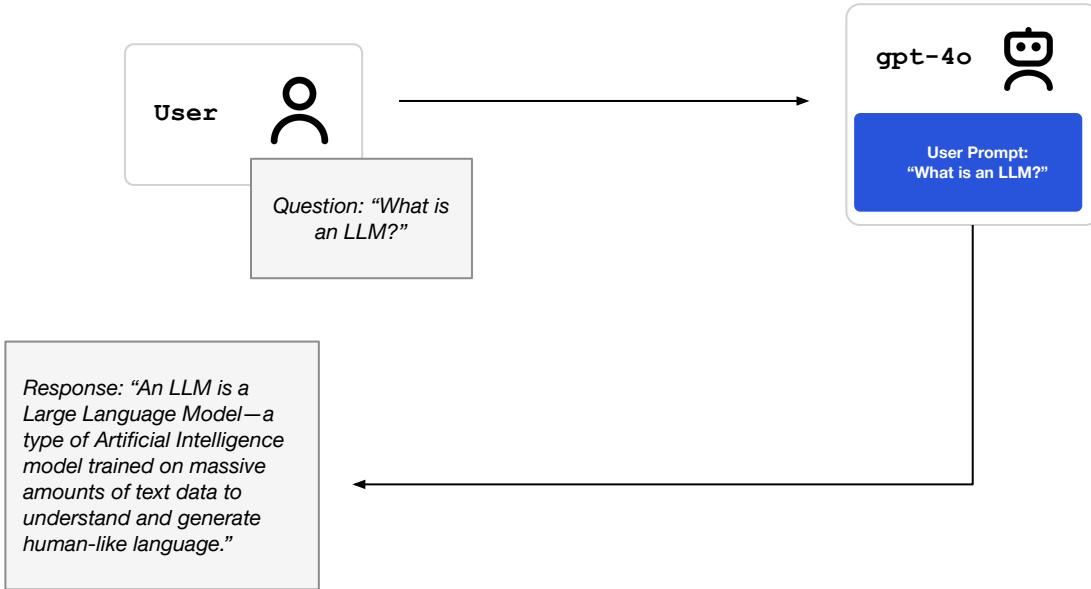
...or not an

Agent?



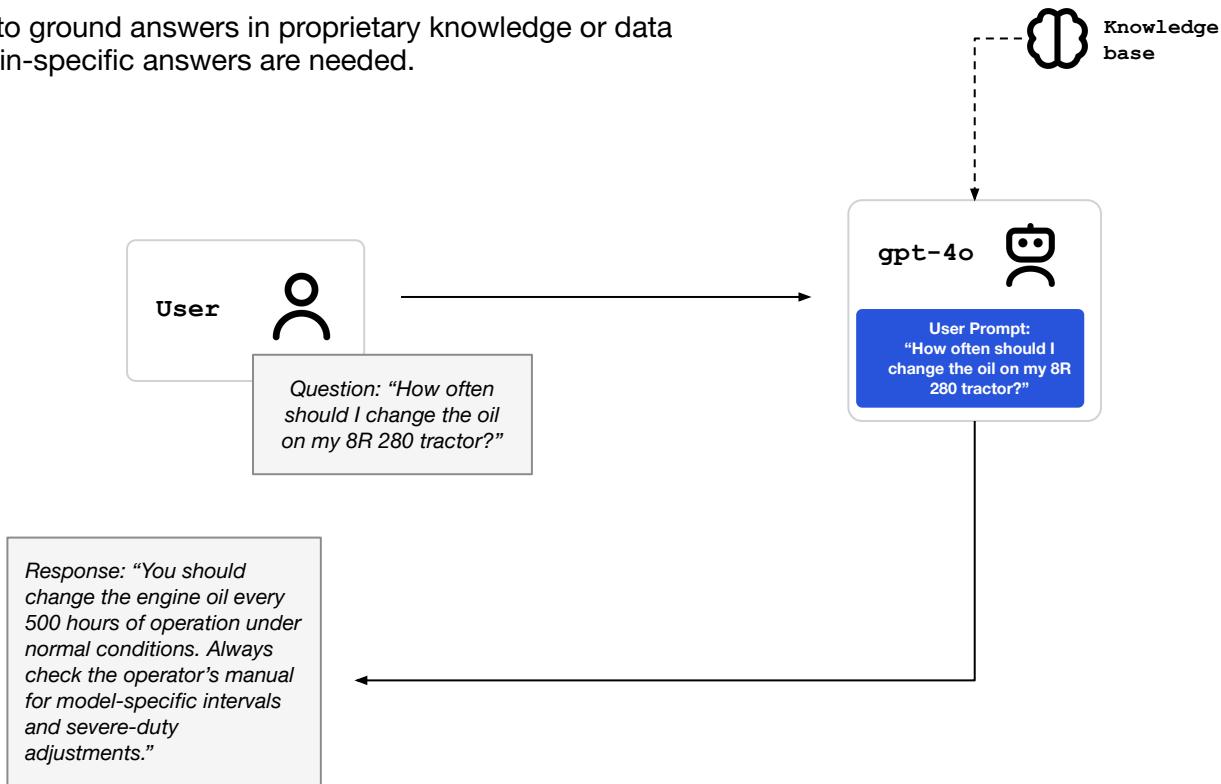
Chatbot

Uses the pre-trained knowledge of an LLM to answer questions.



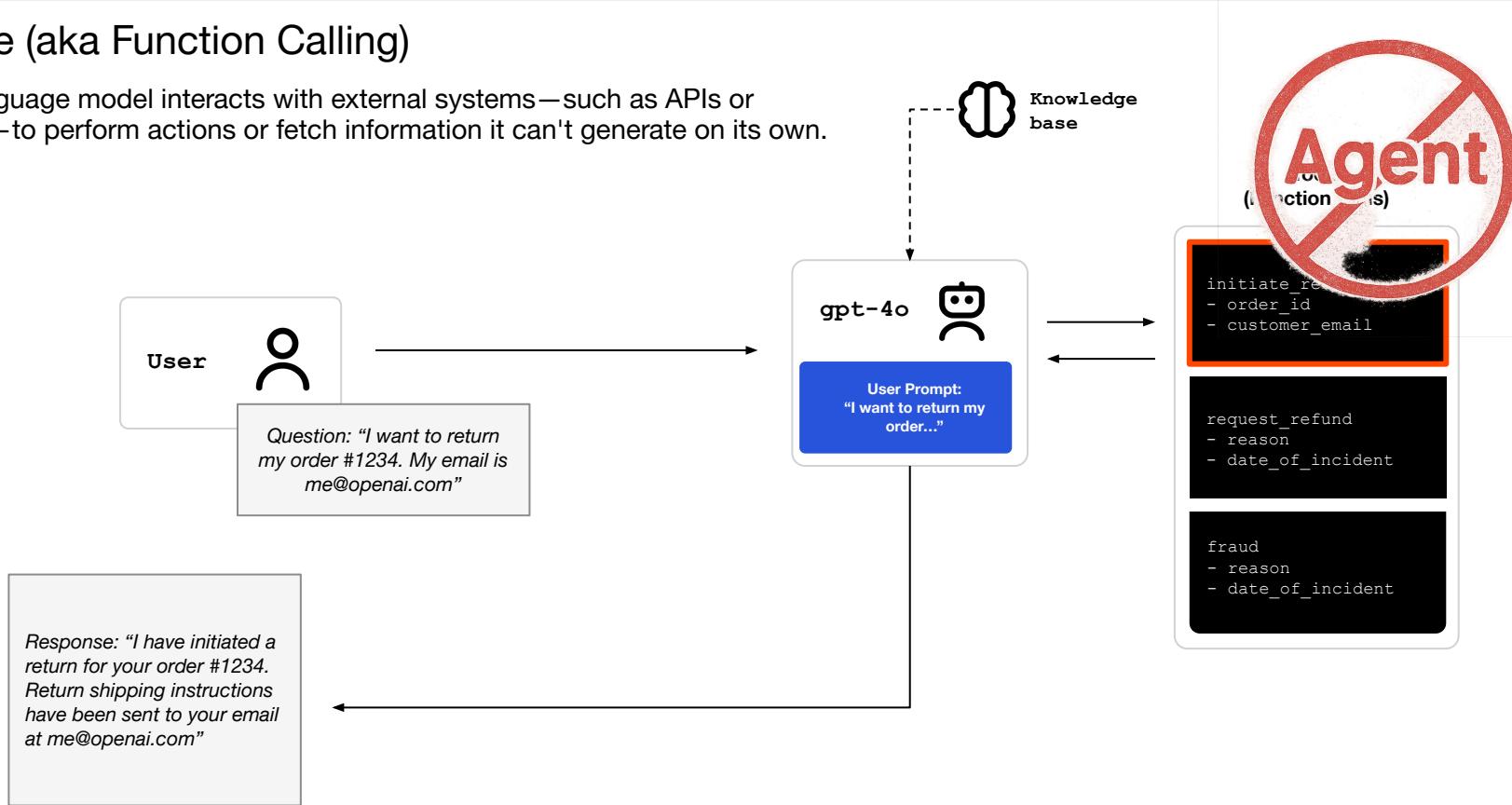
Retrieval-Augmented Generation (RAG)

Allows you to ground answers in proprietary knowledge or data when domain-specific answers are needed.



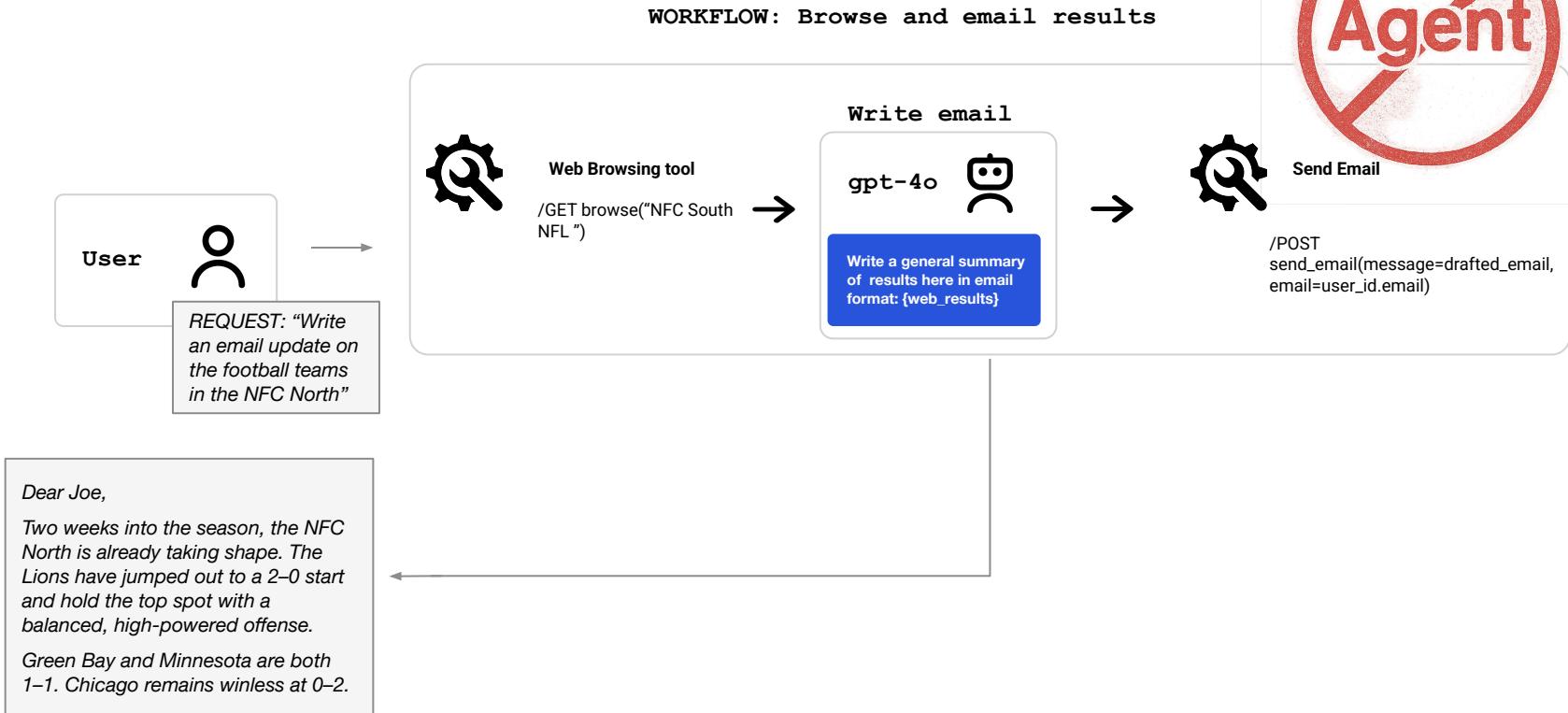
Tool Use (aka Function Calling)

When a language model interacts with external systems—such as APIs or databases—to perform actions or fetch information it can't generate on its own.



Workflow

When an LLM is used as part of a **deterministic**, non-agentic workflow.



Chatbot

Answers
questions
in real-time

Agent

Solves
problems
independently



Okay, then
what are
actual
Agents?



Runs PhD-level research in minutes

Deep research



Uses reasoning to plan and execute multi-step tasks **independently**



Finds and synthesizes **hundreds** of reputable online sources



Creates a well-cited, comprehensive report **in minutes**, saving humans 4+ hours per research task

The screenshot shows the ChatGPT 4.0 interface. A user query at the top asks for an in-depth analysis of industries impacted by a shortage. Below, a detailed response is provided, mentioning causes like supply chain disruptions and geopolitical factors, and discussing industries like automotive, consumer electronics, and industrial equipment. It also covers global perspectives and supply outlooks. A note indicates the report will be structured. At the bottom, there's a section for considering factors and a link to 7 sources.

OPENAI

ChatGPT's deep research might be the first good agent

OpenAI's new research tool still makes mistakes — but in its speed and average quality of analysis, it represents a remarkable step forward



Casey Newton
Feb 3, 2025 — 13 min read

- In depth analysis focus on industries that were impacted the most provide a global overview
- Understood. I will conduct an in-depth analysis of the global semiconductor chip shortage that began in 2020. The report will cover:
 - Causes: Detailed exploration of supply chain disruptions, geopolitical factors, COVID-19 impact, and market demand shifts.
 - Industries Most Impacted: In-depth analysis of industries such as automotive, consumer electronics, industrial equipment, and others that suffered the most from the shortage.
 - Global Perspective: Examination of regional differences in impact and response strategies.
 - Supply Outlook (Next 3 Years): Projections based on industry reports, semiconductor association data, and consulting firm insights.
 - Data & Sources: Tables, charts, and citations from technology publications, consulting firms (like Bain), and semiconductor associations.
- I will compile findings and provide you with a structured research report shortly.

Q Searched for TSMC Samsung Intel 2021 fabs

Q I'm evaluating Bain's analysis on capacity expansions versus demand in their article "After the Chip Shortage, Fears of a Capacity Glut Are Overblown." This piece offers key insights into supply outlooks for the next three years.

Q Read [bain.com](#)

Q I'm exploring the Bain article for valuable data, focusing on demand in essential sectors and TSMC's investment strategies.

Q Read more from [bain.com](#)

Q I'm considering the Bain content and focusing on the data points around the 890 line.

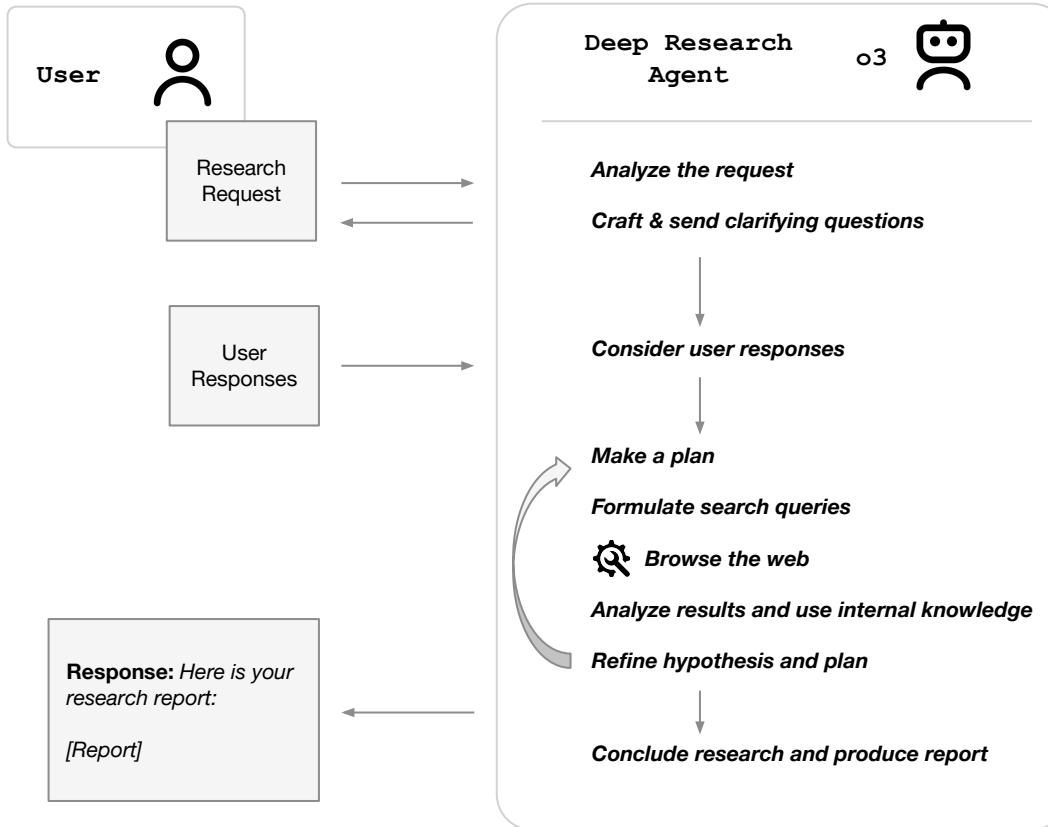
Q Read more from [bain.com](#)

Q I'm gathering insights on government subsidies, technology capacity trends, and regional concentration risks. Evaluating causes like supply chain disruptions and natural events.

Q Reading...

Employee preview ↗

Deep Research: Behind the scenes



Autonomous

Agents built by OpenAI

Deep
Research

Research Agent

ChatGPT
Agent

Computer-use Agent

Codex

Coding Agent

How I make Agents actually work for me





Joe Beutler • You

Solutions @ OpenAI

1mo • Edited

...

OpenAI gave me a week off—so naturally, I vibe-coded and launched a new app.

It's called [Turtl](#), a one-click photo enhancer designed for Airbnb hosts. Here's the kicker: It's my first production app since 2018—when I built a painfully janky Angular and PHP mash-up that somehow still processed millions of dollars in restaurant orders.

Photo Editor

12 Credits

Original



Edited



✓ Accept and Save to Gallery

Download

Request Update

Start Over

OpenAI gave me a week off—so naturally, I vibe-coded and launched a new app

Joe Beutler



Marc Manara and 833 others

117 comments • 14 reposts

The Problem



Existing pro photos



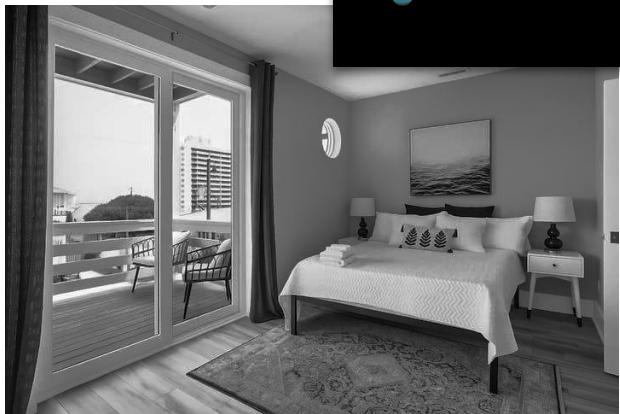
Photos I took



The Problem



 Can ChatGPT fix this?



Early Results

Photos I took



ChatGPT Output



My lack of credibility

- 2018 - last production app
- Janky stack
 - ◆ Angular frontend
 - ◆ PHP backend
 - ◆ MySQL
 - ◆ AWS EC2

The Stack I'd Never Used

- gpt-image-1 for the image editing
- v0 by Vercel for the frontend
- Next.js, TypeScript, Prisma, and Vercel for the core app
- Windsurf for my IDE

The only familiar tools were ChatGPT, Codex, and GitHub.

My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0

The screenshot shows a ChatGPT 5 interface on a web browser. The user has typed in a detailed prompt for an AI photo editor app. The response is displayed in two main sections: a project outline and a UI specification.

I need help writing an outline for my project and a prompt for v0.dev to design a UI for the AI photo editor app that I am building. The app should include a standard homepage and login page that takes username and password. The main page of the app should allow the user to upload a photo and select from a slider 3 options for the level of edit they want (Basic Polish, Professional Touch, Transformation). There should be a description for each of those 3 options. The user will be able to buy credits. The Basic will be 1 credit, the Pro will be 2 credits, and Transformation will be 3 credits. There should be a page to buy the credits and a profile page to view the credits.

There will need to be a viewer to show the photo the user uploads. There will also need to be a text box for them to add custom instructions. They will only be allowed to upload photos of houses, interior or exterior or related property. Then there needs to be some sort of loading or status bar while the image is being processed and it needs to display the image result in a side by side with the original. then there should be an option to "accept" or "update" the image. If they select update, it should allow to explain what they wanted updated and then allow them to submit it. There should also be a library or gallery of all of the images they generate that they can access at any time. Once an image is generated, it should be shown on the generation page and in the gallery.

Thought for a couple of seconds

Here's a two-part deliverable: first, a concise project outline you can flesh out or share with stakeholders; second, a ready-to-go "v0.dev" prompt to hand off to your design team.

1. Project Outline

I. Project Overview

- Goal: Build an AI-powered photo editor based on real-estate imagery (interior/exterior).

+ Ask anything

ChatGPT can make mistakes. Check important info.

My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0
2. I dropped that into v0 → polished frontend

The image shows a comparison between an AI-generated wireframe and a professional-looking website.

AI-generated wireframe (left):

- Header: "Turtl Photo Editor Design" and "View Project".
- Text: "You are designing the UI for 'Turtl Photo Editor,' a responsive web app for real-estate hosts. Please create high-fidelity mockups for the following screens and elements:"
- Section 1: Global
 - Clean, modern aesthetic (bright neutrals + accent color)
 - Top nav with logo and links: Home, Editor, Gallery, Buy Credits, Profile
 - Mobile-friendly layout (collapse nav into hamburger)
- Section 2: Homepage
 - Hero section: title, tagline, "Get Started" button
 - Three feature cards: Basic Polish, Professional Touch, Transformation (with icons + brief descriptions)
 - Footer with links (Privacy, TOS)
- Section 3: Login / Signup
 - Simple form: email, password, "Forgot password" link
 - Toggle between Login and Sign up
- Section 4: Main Editor Dashboard
 - Uploader: drag-and-drop area + "Browse" button
 - Edit Level Slider: three positions labeled
 - B → Polish → "1 credit: quickly clean-up color"

Promotional text:

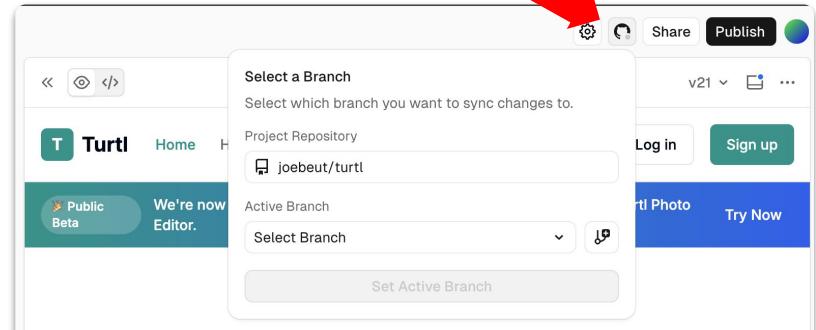
- "Ask a follow-up..." input field
- Buttons: "+", "Design", and a camera icon.

Final polished frontend (right):

- Header: "Turtl Photo Editor Design" and "View Project".
- Header bar: "Turtl" (with logo), "Home", "How It Works", "Our Story", "Public Gallery", "Pricing", "Log in", and "Sign up".
- Callout: "We're now in Public Beta! Sign up today and get 5 free credits to try Turtl Photo Editor." with a "Try Now" button.
- Main heading: "Transform Your Real Estate Photos".
- Text: "Professional photo editing made simple. Enhance your property listings with just a few clicks."
- Callout: "Sign up with just your email and get 5 free credits to get started!" with a "Get Started" button.
- Section: "Elevate Your Property Photos".
- Text: "Choose from three levels of professional editing to match your needs and budget. From quick touch-ups to complete transformations, we've got you covered."
- Card 1: "Basic Polish" (camera icon) - "Quick clean-up and color correction to make your photos pop. Perfect for properties".
- Card 2: "Professional Touch" (camera icon with crop) - "Advanced lighting adjustments and perspective fixes to".
- Card 3: "Transformation" (camera icon with edit tools) - "Revolutionary AI-powered photo synthesis and complete property".

My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0
2. I dropped that into v0 → polished frontend
3. I pushed that to GitHub.



A screenshot of the Turtl app interface. At the top right, there is a red arrow pointing to a gear icon inside a circular button. The main interface shows a 'Select a Branch' dialog box with 'Project Repository' set to 'joebeut/turtl'. A dropdown menu for 'Active Branch' is open, with 'Select Branch' highlighted. Below it is a 'Set Active Branch' button. The background shows the Turtl editor interface with a 'Public Beta' badge and a message 'We're now Editor.'.

Transform Your Real Estate Photos

Professional photo editing made simple. Enhance your property listings with just a few clicks.

 Sign up with just your email and get 5 free credits to get started!

Get Started →

Elevate Your Property Photos

My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0
2. I dropped that into v0 → polished frontend
3. I pushed that to GitHub.
4. I connected my repo to Codex inside ChatGPT.

The screenshot shows the Codex environment configuration interface. At the top right is a user icon labeled "PRO". The main title is "Environments > joebeut/turtl > edit". The interface is divided into sections: "Basic", "Code execution", and "Container image".

Basic

- Repository:** turtl (Private) with a checked checkbox.
- Name:** joebeut/turtl (13/64 characters used).
- Description:** 1-2 sentence description (0/512 characters used).

Code execution Set up dependencies, lint, and tests. [Learn more](#)

Container image: A dropdown menu set to "universal" and a "Preinstalled packages" button.

Universal is an image based on Ubuntu 24.04 - see [openai/codex-universal](#) to learn more. The repository will be cloned to /workspace/turtl. [Edit workspace directory](#).

Environment variables

My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0
2. I dropped that into v0 → polished frontend
3. I pushed that to GitHub.
4. I connected my repo to Codex inside ChatGPT.
5. I asked Codex to map out all the backend tasks

Analyze codebase and create backend tasks
Jun 28 - joebeut/turtl · main

please analyze the code base to find where I need to create backend functions or API to connect the functionality of the front end. the goal of this app is to allow a user to upload a photo, share some instructions, and then pass to OpenAI 4o image gen to generate a new version of the photo that meets the users requirements. We will need to write prompts that ask for the...

Worked for 1m 54s >

Summary

- The project is a Next.js frontend (`turtl` folder). No backend logic or API routes currently exist.
- The editor page (`turtl/app/editor/page.tsx`) uses a placeholder `handleProcess` function that simulates processing and sets the result to a static image. This is where an API call should be implemented ⓘ .
- No OpenAI client or API integration is present in `package.json` ⓘ .
- `next.config.ts` is empty, so configuration for remote images or serverless setup is not defined ⓘ .

Backlog

1. **Install OpenAI SDK**
 - Add `openai` (or compatible) to `package.json` dependencies.
 - Configure `OPENAI_API_KEY` in `.env.local` and add environment variable setup on Vercel.
2. **Create API route for image processing**
 - Under `app/api/process/route.ts`, implement a POST endpoint.
 - Accept uploaded image data, editing level, and instructions.
 - Build a GPT-4o/DALL-E prompt to "enhance the photo professionally without looking over-edited" and apply the user instructions.
 - Return a URL or base64 of the generated image.
3. **Handle file uploads**
 - Update the editor page to send the file and user instructions to the new API route via `fetch`.
 - Replace the placeholder logic in `handleProcess` with real API calls, showing progress while waiting for the response.
4. **Image storage and gallery**
 - Decide on storage (e.g., Vercel Blob, S3, or other). Store both originals and generated images.
 - Fetch stored images in `app/gallery/page.tsx` instead of static placeholder data.
5. **Authentication and credits (optional)**
 - Integrate an auth solution (e.g., NextAuth or Clerk) so users can log in and maintain a credit balance.
 - Implement server-side endpoints or database actions for buying and consuming credits.
6. **Configure `next.config.ts`**
 - Add external image domains (OpenAI or storage provider).
 - Ensure configuration supports server actions or API routes on Vercel.
7. **Deployment steps**
 - Add Vercel configuration (`vercel.json` if necessary) for the project.
 - Set environment variables (`OPENAI_API_KEY`, any storage credentials) in the Vercel dashboard.
 - Test next build and next start locally before deploying.
8. **Prompt refinement**
 - Create standard prompt templates for each edit level. Example:
 - "Basic Polish: Improve lighting and color balance but keep the image realistic."
 - "Professional Touch: Adjust perspective and lighting for a professional listing."
 - "Transformation: Virtual staging that still looks authentic."
 - Ensure generated images do not look overly filtered or artificial.
9. **Documentation and onboarding**
 - Update README with setup instructions for the API key, running the development server, and deploying to...

Request changes or ask a question

Write unit tests or integration tests for the API route

Archive Share

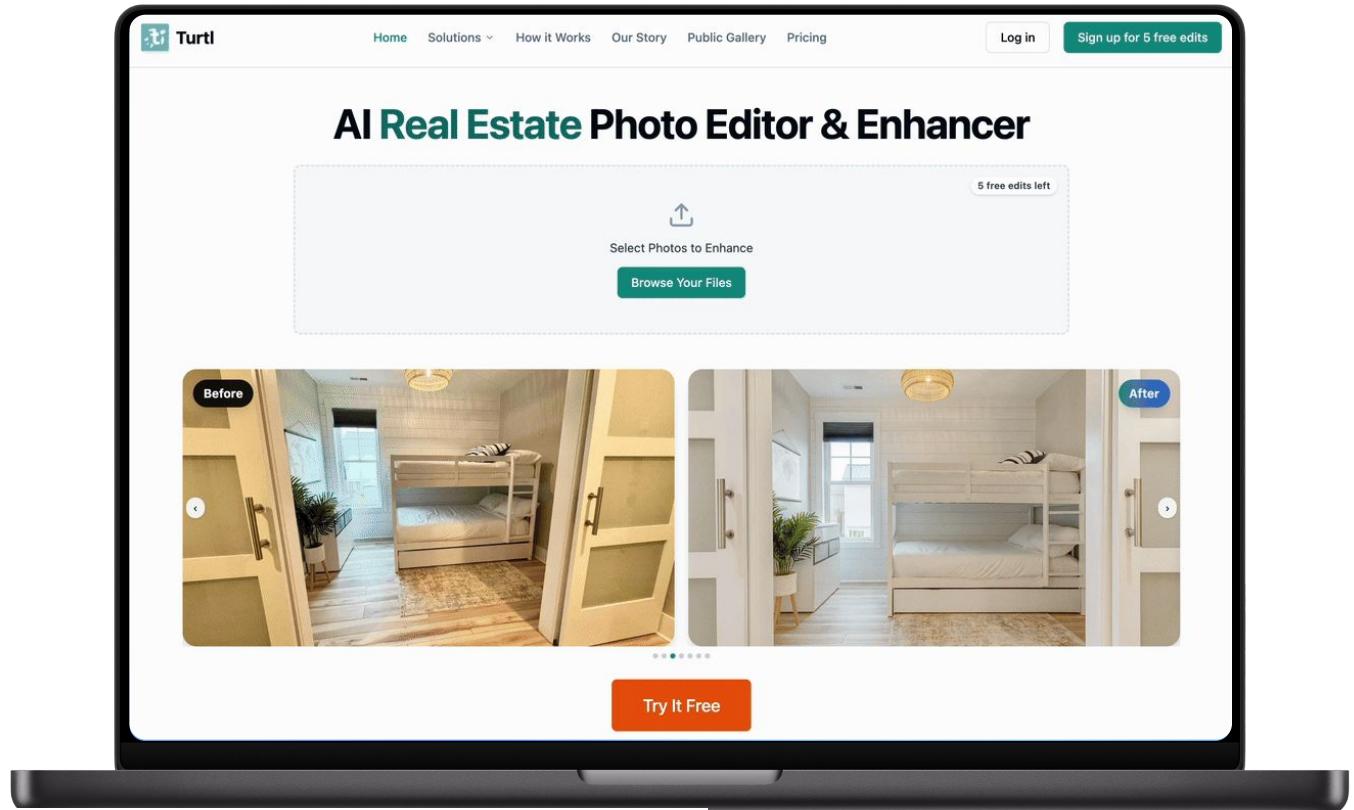
My AI-Accelerated Workflow

1. Used ChatGPT to write a prompt for v0
2. I dropped that into v0 → polished frontend
3. I pushed that to GitHub.
4. I connected my repo to Codex inside ChatGPT.
5. I asked Codex to map out all the backend tasks I'd need—and it opened dozens of GitHub tickets automatically.
6. Codex then started generating PRs to build those features.

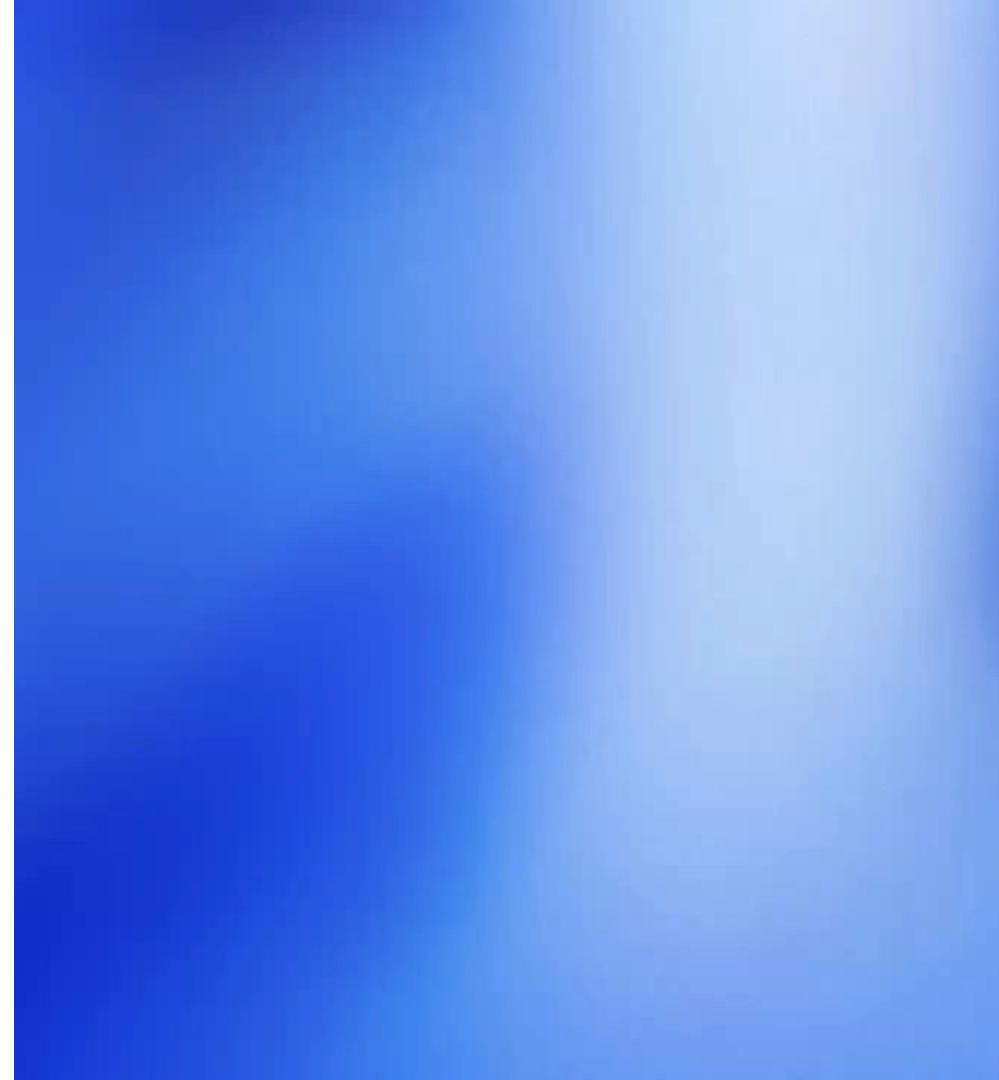
The screenshot shows the ChatGPT Codex interface in a browser window. The title bar says "chatgpt.com/codex". The main heading is "What should we code next?". Below it is a search bar with "Describe a task". There are three buttons: "Ask" (grey), "Code" (blue), and "Archive" (disabled). A "Tasks" tab is selected, showing a list of GitHub pull requests:

- Jun 30 · joebut/turtl Fix Vercel Blob upload error Merged +28 -7
- Jun 30 · joebut/turtl Fix ECMAScript code parsing error Merged +3 -14
- Jun 29 · joebut/turtl Add Instagram sharing option Merged +2 -0
- Jun 29 · joebut/turtl Decrement credits on image generation Merged +32 -0
- Jun 29 · joebut/turtl Implement image save and redirect to gallery Merged +19 -6
- Jun 24 PM · joebut/turtl Validate sign up functionality and email check Merged +158 -147
- Jun 29 · joebut/turtl Add image normalization and EXIF rotation Merged +21 -14
- Jun 29 · joebut/turtl Analyze image rotation issue before OpenAI API Failed
- Jun 29 · joebut/turtl Codex task Merged +167 -67
- Jun 29 · joebut/turtl Create gallery page to display user images Merged +291 -130
- Jun 29 · joebut/turtl Hook up the Editor Page Merged +104 -12

The Result



What this means for the enterprise



What I'm seeing at OpenAI

- Small product teams
 - 1 product manager
 - A few engineers
 - Maybe a researcher or two

Where do we start?

There is a
right way to
build agentic
systems

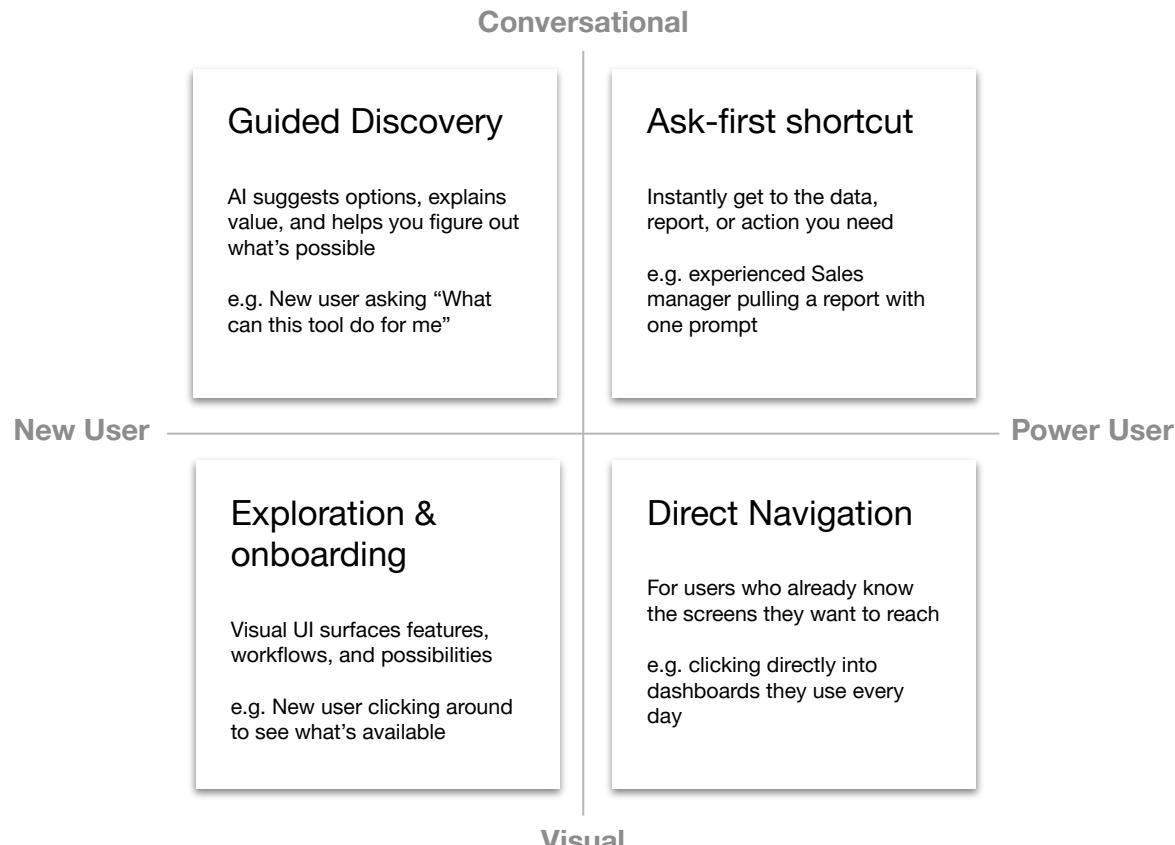
Agentic Software – Conversations, Not Clicks

The future of software is
“ask-first”

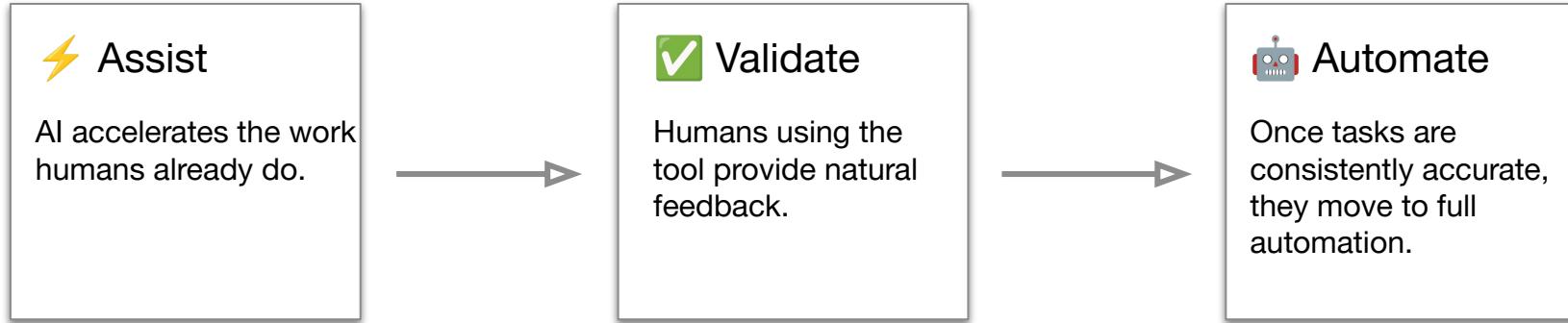
If you know what you want,
the AI delivers it instantly.

If you don’t, the AI helps you
discover what’s possible.

This removes the learning
curve that makes adoption
so painful today.



Agentic Services – Introducing AI Agents to Human Experts



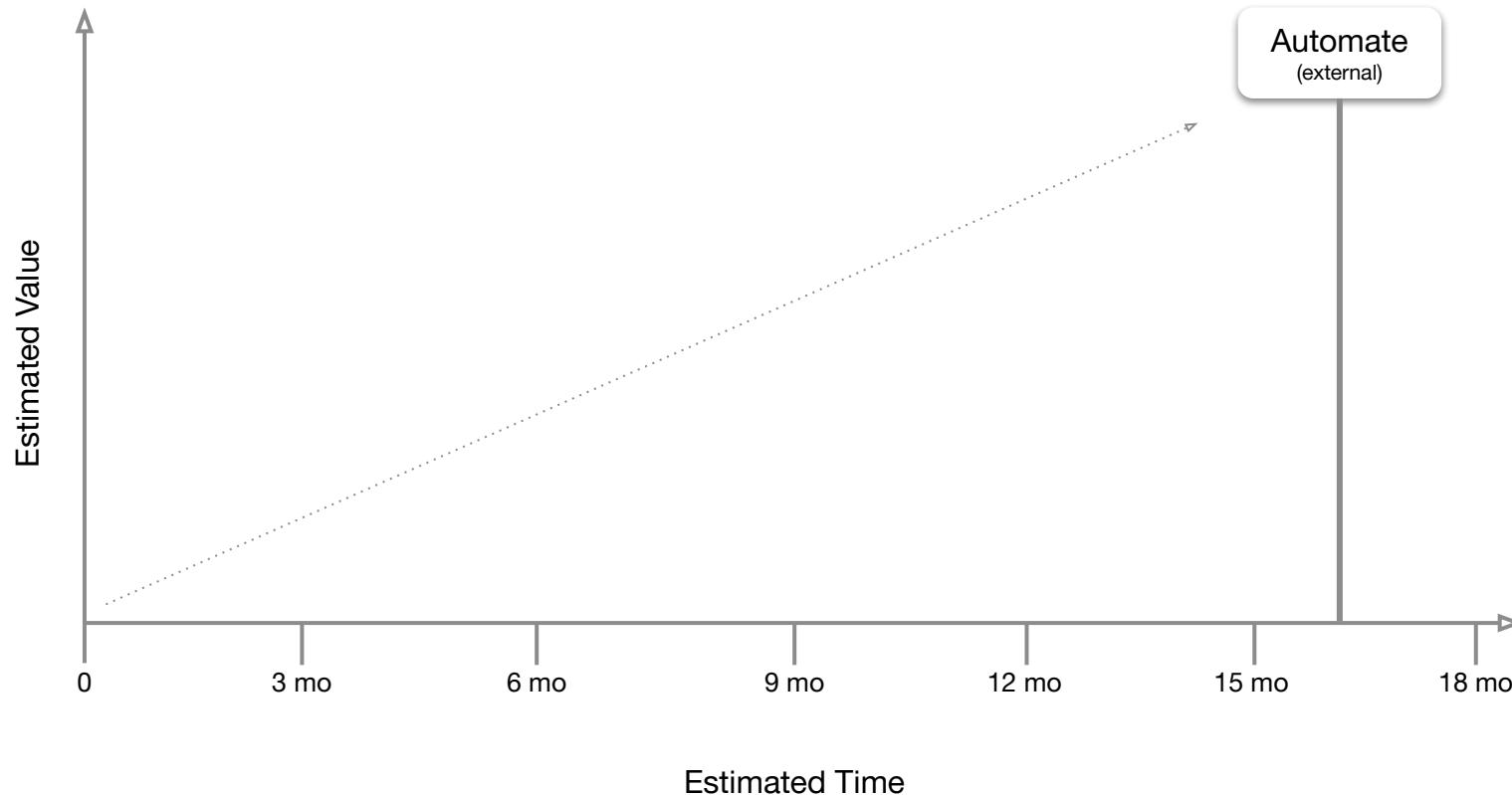
This could apply to any repetitive job done by humans:
Sales, Onboarding, Support, Operations, etc

How do we build this?

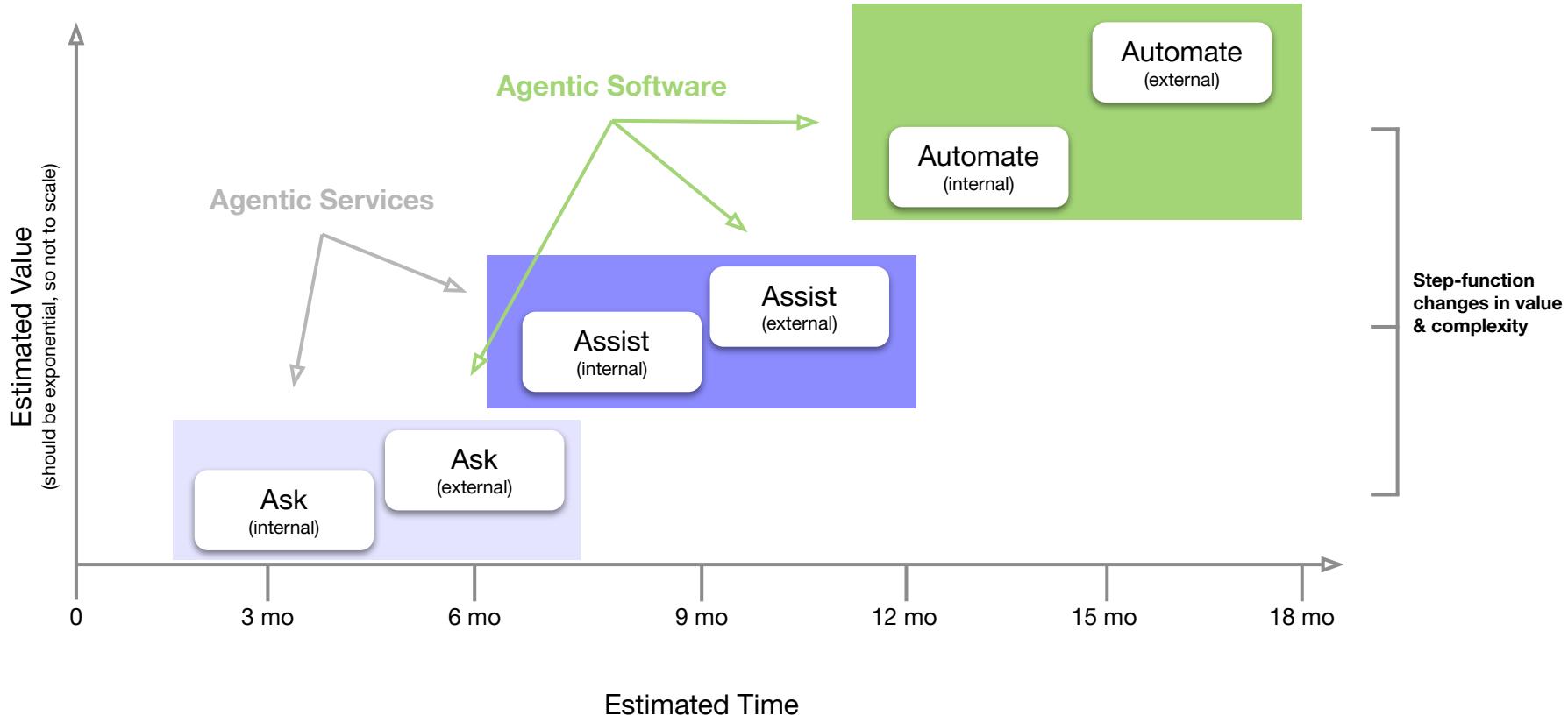
Core Capabilities

Capability	Complexity	Description
1. Ask	Crawl	Answer questions by searching across data, operating instructions, APIs, and software tools.
2. Assist	Walk	Deliver guided, interactive experiences that partially automate or assist the user on complex tasks.
3. Automate	Run	Execute workflows and actions automatically, replacing repetitive, manual work.

What does this look like?



What does this look like?



T-Mobile builds first-ever intent-driven AI decisioning platform, powered by OpenAI



Project

T-Mobile and OpenAI are collaborating to build IntentCX, the first intent-driven AI decisioning platform for customer experience. Set to launch in 2025, IntentCX will reinvent customer care by:

- Using real-time data to understand customer intent and proactively solve issues
- Offering personalized service based on T-Mobile's Team of Experts approach
- Providing real-time decisioning and proactive actions
- Implementing high-level security measures

1st

intent-driven AI decisioning platform, IntentCX, built together by T-Mobile and OpenAI



September 2024: T-Mobile CEO Mike Sievert and Sam Altman announce our partnership at T-Mobile's Capital Markets Day

“You know you are thinking about AI wrong when you take AI and try to build a 10% better IVR. You need to use this technology to smash your existing processes and rebuild them from scratch like they should have been with the advantage of this technology.

When you try to do incremental stuff with this technology, it is just frustrating and doesn’t work.

This is an opportunity to reinvent your processes.”

– Srinivas Gopalan, COO

T Mobile



Introducing gpt-realtime in the API

OpenAI 1.75M subscribers

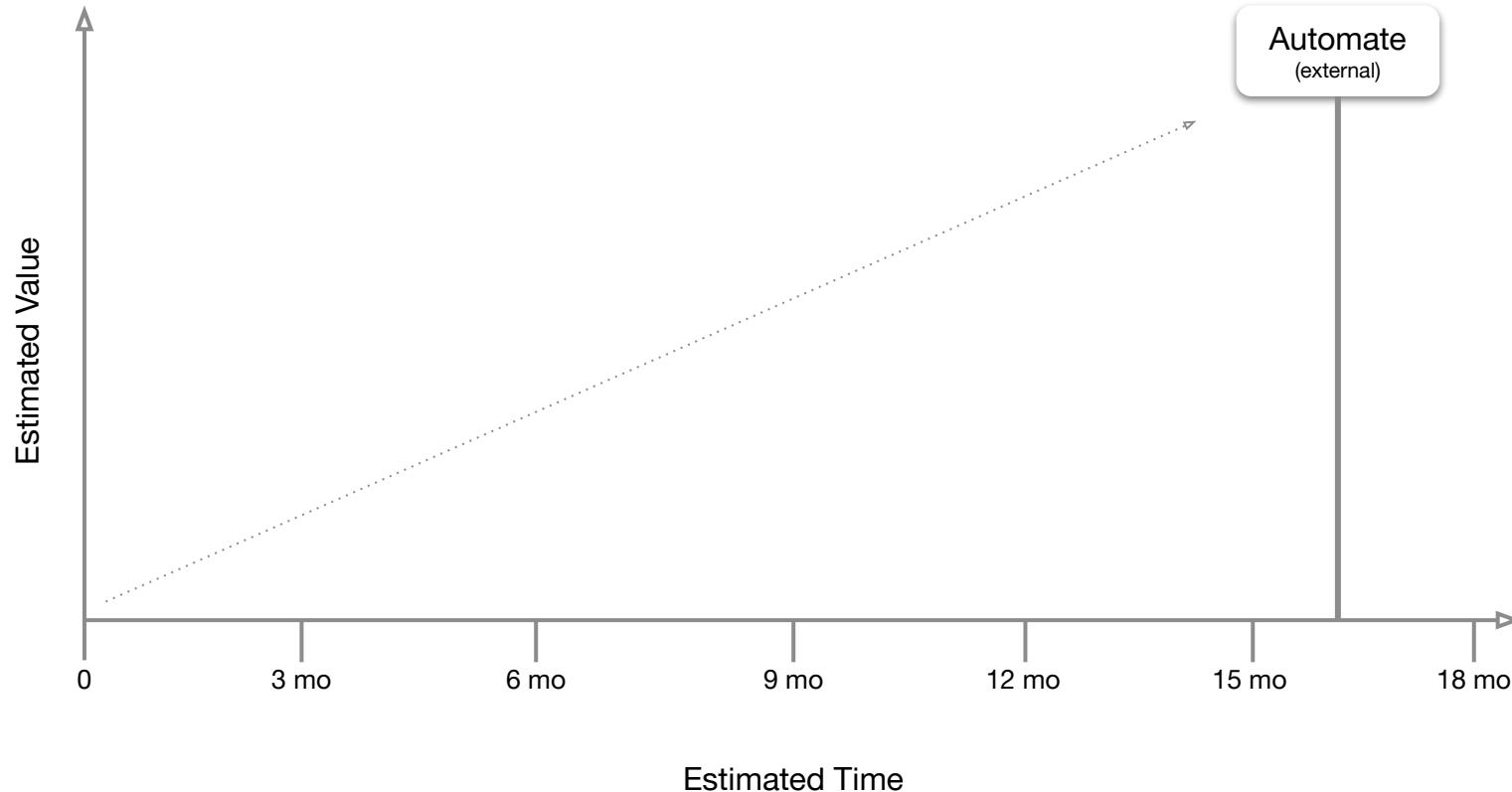
Subscribe

1K Share Clip ...

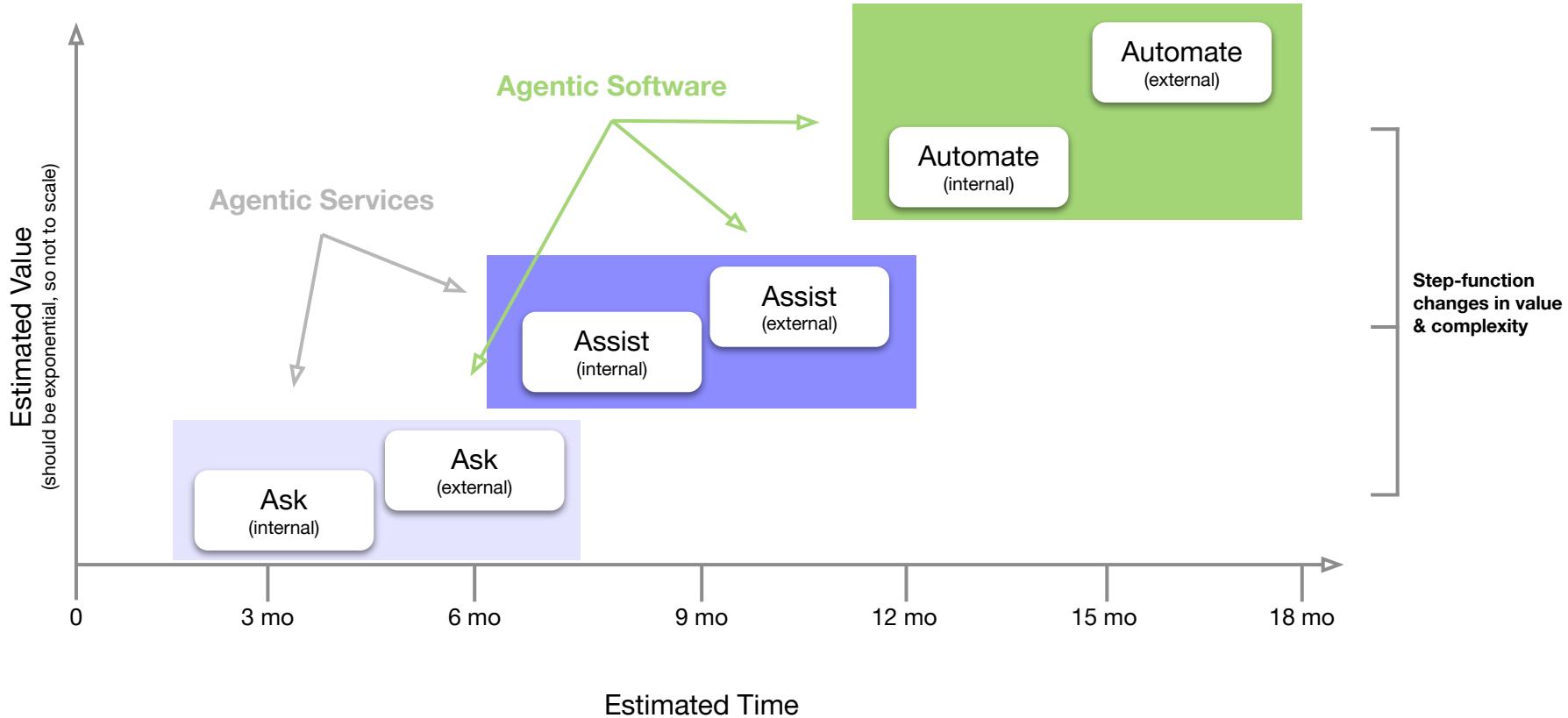
5,307 watching now Started streaming 22 minutes ago

August 2025: T-Mobile COO Srinivas Gopalan joins the Realtime API launch livestream to announce the launch of their AI voice experience in the T-Life app

What does this look like?

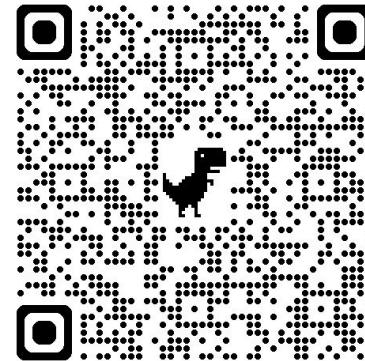


What does this look like?



Help I'm looking for

Vibe Coding Framework on LinkedIn



Currently curious about

Vibe coding

AI impact on careers

“Agent gateways” - how enterprises
are enabling devs to build agents

Shameless plug

Renting or selling a house? Know
anyone who is?

turtledit.com

Feedback welcome!

Let's Connect!



@joebeutler



@joebeutler

Thank you!

Let's Connect!



@joebeutler

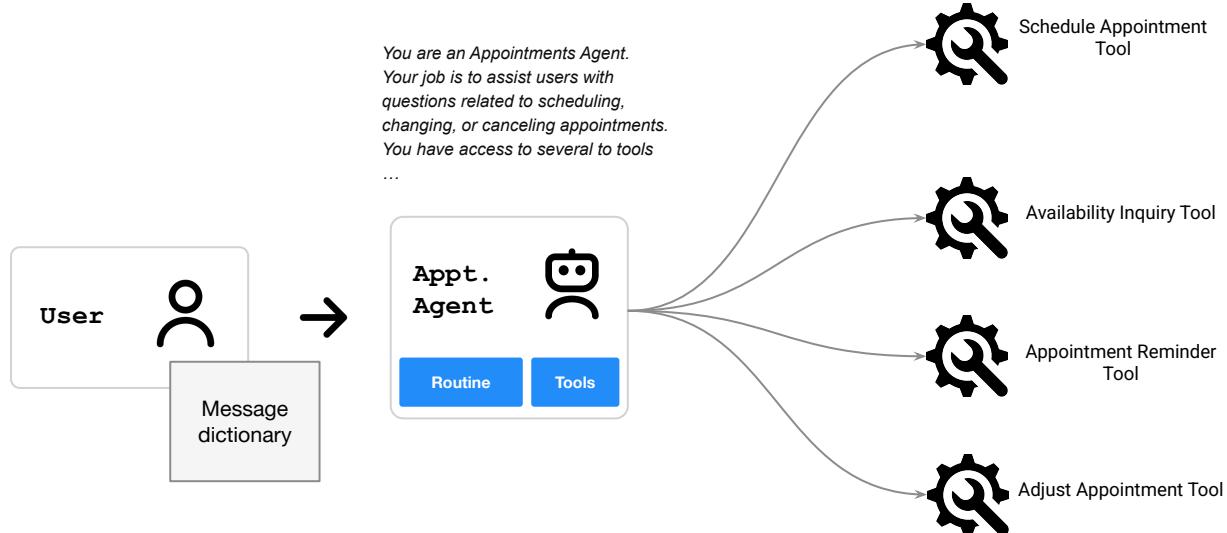


@joebeutler

Appendix

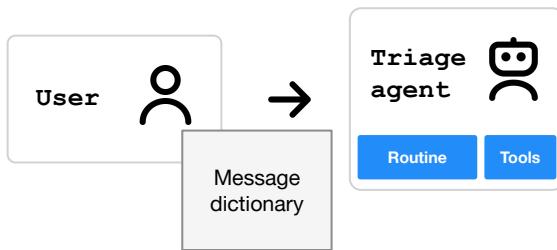
LLM with Routine & Tools

A routine is a reusable workflow that combines LLM prompts, tool calls, and conditional logic to automate a multi-step task or user interaction.

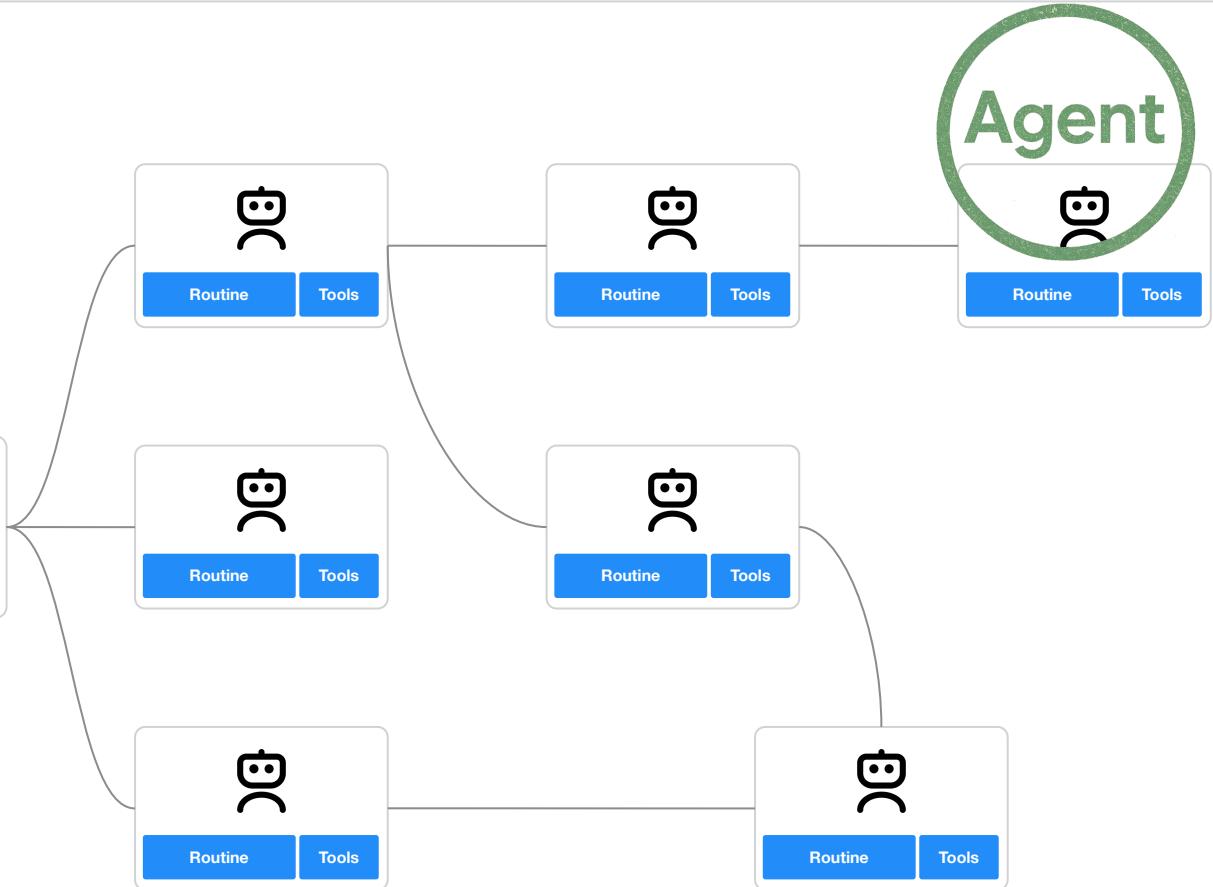


Network of agents

A network of agents is a collaborative system where multiple agents work in concert to resolve complex requests or perform a series of interrelated tasks.

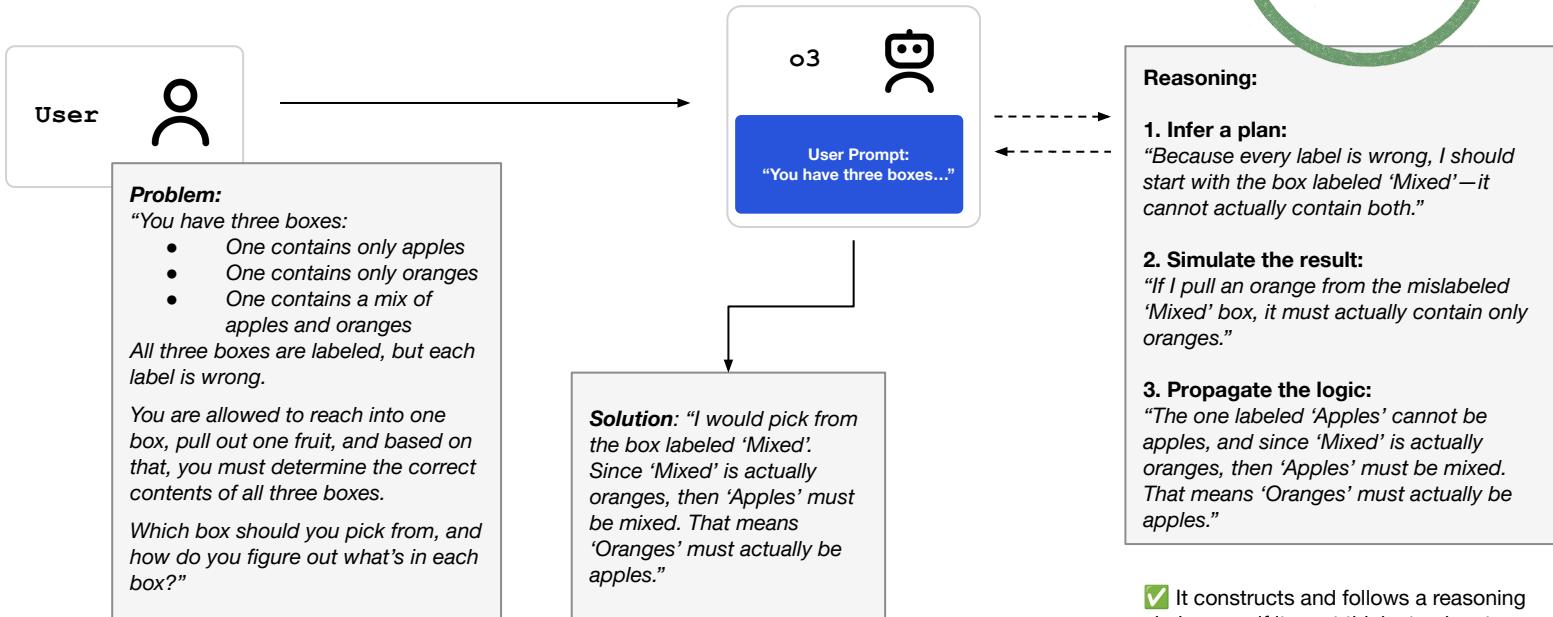


Typically, a central "Triage Agent" directs user prompts to specialized assistants, each one equipped with its own Routine and tools to handle different types of tasks.



Reasoner

Basic problem solving. 10min thinking tasks that a PhD in a given field could do with no tools.



- ✓ It constructs and follows a reasoning chain, even if it must think step by step to debug a contradiction or rule out possibilities.



My AI-Accelerated Workflow

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3. I pushed that to GitHub.
4. I connected my repo to Codex inside ChatGPT.
5. I asked Codex to map out all the backend tasks I'd need—and it opened dozens of GitHub tickets automatically.
6. Codex then started generating PRs to build those features.

The screenshot shows the Codex interface within the ChatGPT browser extension. The main heading is "What should we code next?". Below it is a search bar with the placeholder "Describe a task" and three buttons: "Ask", "Code", and "Code". A navigation bar at the top right includes "Settings", "Docs", and a user profile icon. The main content area is titled "Tasks" and shows a list of GitHub pull requests:

- Implement guardrail checks and error handling (Jul 2 - joebeut/turtl) Merged +103 -6
- Implement guardrails for image editing process (6:24 PM - joebeut/turtl) Merged +141 -5
- Fix image fetching error on /gallery page (Jul 1 - joebeut/turtl) Merged +6 -0
- Fix 'accept and save to gallery' button (Jul 1 - joebeut/turtl) Merged +82 -35
- Investigate fast refresh behavior (Jul 1 - joebeut/turtl)
- Clarify photo resubmission behavior (Jul 1 - joebeut/turtl) Merged +5 -2
- Add progress indication for resubmit (Jul 1 - joebeut/turtl) Merged +3 -1
- Add variable for system prompt instructions (Jul 1 - joebeut/turtl) Merged +8 -6
- Update menu bar for logged-out users (Jul 1 - joebeut/turtl) Merged +21 -1
- Create user input guardrails for photo validation (Jul 1 - joebeut/turtl)
- Fix 'popular' tag positioning (Jul 1 - joebeut/turtl) Merged +4 -1
- Add download and resubmit functionality (Jul 1 - joebeut/turtl) Merged +152 -4
- Update processing message with time estimate (Jul 1 - joebeut/turtl) Merged +2 -2
- Fix popup and switch to embedded payment element (Jul 20 - joebeut/turtl) Merged +94 -132

turtledit.com

Turtl

Home Solutions How it Works Our Story Public Gallery Pricing

Log in Sign up for 5 free edits

AI Real Estate Photo Editor & Enhancer

Select Photos to Enhance

Browse Your Files

5 free edits left

Before

After

Try It Free

5 Free Edits Included
No Credit Card Required



Turtl

[Home](#) [Solutions](#) ▾ [How it Works](#) [Our Story](#) [Public Gallery](#) [Pricing](#)[Log in](#)[Sign up for 5 free edits](#)

AI Real Estate Photo Editor & Enhancer

Select Photos to Enhance

5 free edits left

[Try It Free](#)

5 Free Edits Included
No Credit Card Required

Agentic Services – Introducing AI Agents to Human Experts

Human Services

- People perform repetitive tasks manually
- Knowledge lives in individuals, not systems
- Onboarding and support are slow and inconsistent
- Scaling requires hiring more people
- Costly, variable, hard to standardize

Agentic Services

- **Assist:** AI agents accelerate human work by suggesting answers, drafting responses, or surfacing next steps.
- **Validate:** Experts use the AI in their day-to-day—accepting what works, correcting what doesn’t, and training the system through real use.
- **Automate:** Once a task is consistently accurate, it shifts from human-reviewed to fully automated, freeing experts for higher-value work.
- **Flywheel:** A continuous cycle where adoption, trust, and automation reinforce each other.