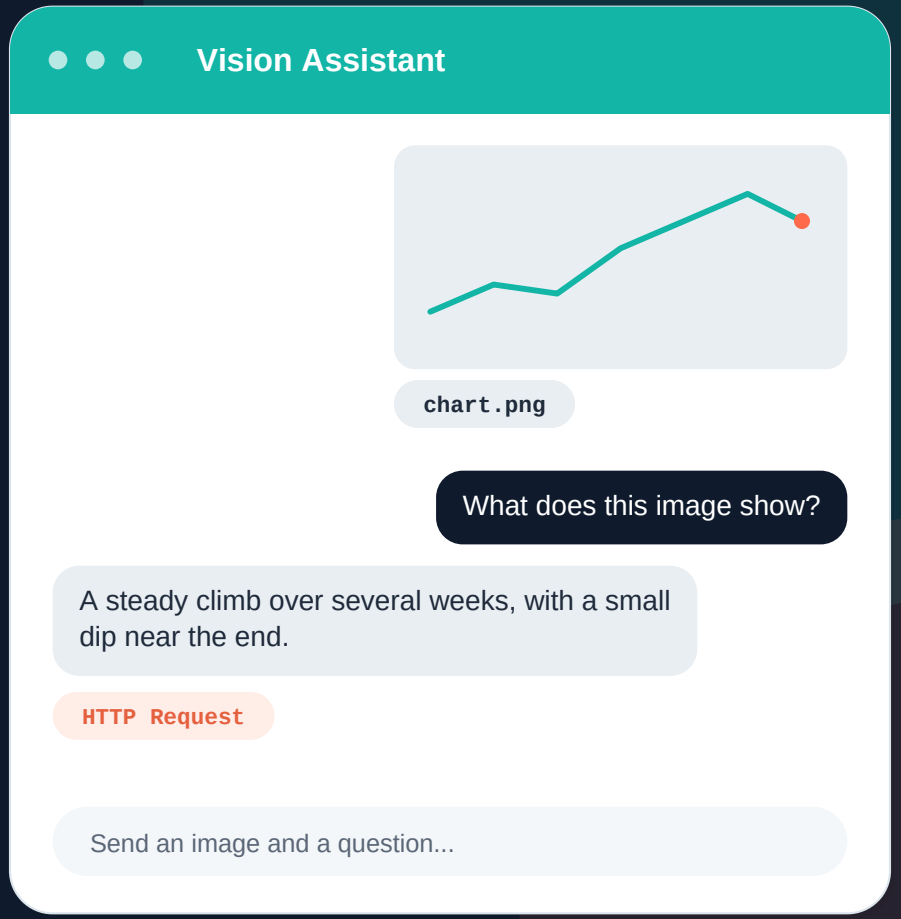
PORTFOLIO CASE STUDY | AI AUTOMATION

AI Image Analysis Chat Assistant

A chat workflow that reads an uploaded image with GPT-4o vision, can fetch outside data through a tool, and replies with a clean, formatted answer.

n8n | OpenAI GPT-4o | HTTP API | JavaScript | Chat



Workflow built in n8n | Vision analysis by OpenAI GPT-4o

01 Project Overview

What the automation is, what it is for, and who it helps

PROJECT NAME

AI Image Analysis Chat Assistant

A chat assistant that takes an image and a question, analyzes the image with GPT-4o vision, can fetch outside data with an HTTP tool, and sends back a clean, formatted answer.

MAIN OBJECTIVE

Give people a fast, consistent first-pass review of any image, without waiting for an expert.

WHO IT HELPS

- **Trading and finance education**
  Chart review practice and learning
- **eCommerce businesses**
  Product photo checks and tagging
- **Customer support teams**
  Screenshot troubleshooting
- **Education and coaching**
  Feedback on student work
- **Marketing and creative teams**
  Ad and design reviews

GPT-4o	vision model reads the image
1	data tool the model can call
3	code steps clean up the result
Chat	simple front end for users

02 The Business Pain

What goes wrong when images are reviewed by hand

Too many images to review

People send screenshots and photos, and someone has to look at each one.

Slow, uneven feedback

Different reviewers give different answers, and each review takes time.

Answers need outside data

Good answers often need numbers from another system, which means more tabs and copy and paste.

Raw AI replies are messy

Plain model output can be long, uneven, or hard to read in a chat.

Experts are stretched thin

Skilled people spend time on first-pass checks instead of deeper work.

Sound familiar?

When every image needs a person, feedback slows down. An assistant that can see, look things up, and reply clearly takes on the first pass.

03 The Proposed Solution

A chat assistant that can see, look things up, and answer clearly

WHAT HAPPENS	WORKFLOW DOES	RESULT
A user sends an image and a question	**Chat input** The chat trigger receives it and starts the run	The request enters the workflow
The image and question need packaging	**Prepare** Set Image & Prompt prepares both for the AI	A clean, ready request
The image needs to be understood	**Vision analysis** GPT-4o Vision Analysis sends it to the OpenAI API	A written analysis of the image
More context is needed	**Reason and fetch data** Message a model writes the answer and can call an HTTP Request tool	Answers backed by outside data
The raw output is messy	**Format the reply** Extract & Format Result pulls out the text and shapes it	Clean, readable text
The chat needs a final answer	**Format the reply** Two more code steps polish the result	A tidy reply in the chat window

03 Basic Chatbot vs. AI Vision Assistant

Why seeing the image and checking data makes answers more useful

Basic text chatbot

- ✕ Only reads typed text
- ✕ Cannot see an uploaded image
- ✕ Gives general answers
- ✕ Cannot fetch outside data
- ✕ Sends one long, raw reply
- ✕ Needs a person for image reviews

VS

AI vision assistant

- ✓ Reads images and text together
- ✓ Sees what is in the picture
- ✓ Answers about that exact image
- ✓ Can call a tool to fetch data
- ✓ Cleans and formats the reply
- ✓ Gives a quick first-pass review

IN ONE LINE

A chat assistant that can see, look things up, and answer in clean text.

Vision means the AI can look at pictures, not just read words.

04 Key Features & Capabilities

What the system can actually do

Chat interface

Users send a message and an image in a simple chat window.

Prompt setup

Set Image & Prompt packages the image with clear instructions.

GPT-4o vision

Reads and describes the image with OpenAI's vision model.

Second AI step

The OpenAI Message a model step writes the response text.

Tool calling

An HTTP Request tool lets the model fetch outside data.

Result extraction

Pulls the useful text out of the API response.

Clean formatting

Code steps shape the answer so it reads well in chat.

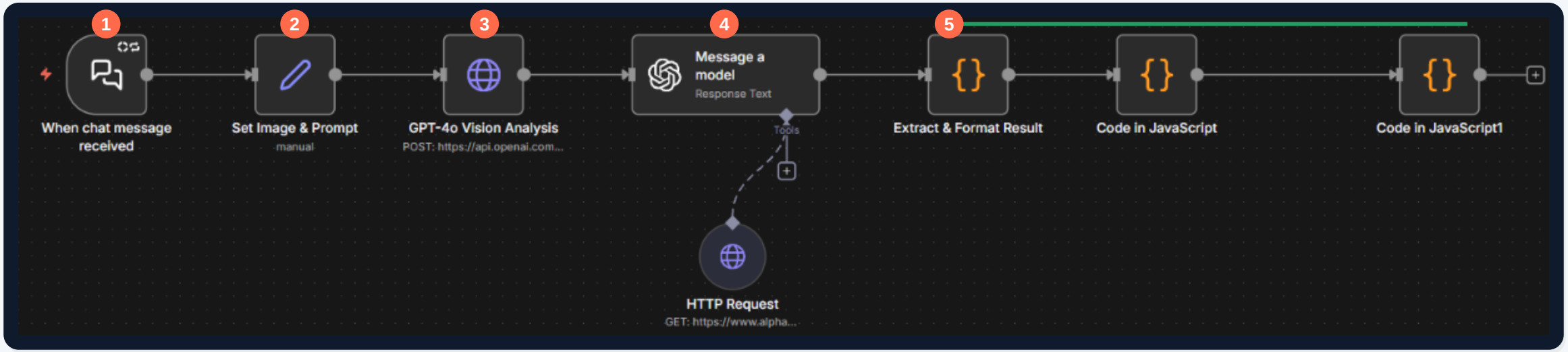
Quick first pass

Gives a first review without waiting for a person.

Prompts are editable, so the same flow can review charts, products, documents, or screenshots.

05 Workflow Architecture

The real n8n workflow and how its parts connect



Real workflow in n8n. Numbers match the five stages listed below.

HOW TO READ IT

- Data moves from left to right.
- The dotted line under Message a model is a tool the model can call.
- Orange { } boxes are small JavaScript code steps.
- The globe icon marks a web (HTTP) request.

THE FIVE STAGES

Chat input	When chat message received
Prepare	Set Image & Prompt
Vision analysis	GPT-4o Vision Analysis
Reason and fetch data	Message a model + HTTP Request tool
Format the reply	Extract & Format Result + 2 Code steps

05 The Five Stages

What each part of the workflow does, in plain words

1	**Chat input**	A user sends a message in the chat. The When chat message received step starts the workflow.	Tools: n8n Chat Trigger
2	**Prepare**	Set Image & Prompt gets the image and the instructions ready for the AI.	Tools: n8n Set
3	**Vision analysis**	GPT-4o Vision Analysis sends the image and the prompt to OpenAI's API. The model looks at the picture and describes it.	Tools: HTTP request, OpenAI GPT-4o
4	**Reason and fetch data**	A Message a model step writes the response text. It also has an HTTP Request tool, a GET call it can use to fetch outside data.	Tools: OpenAI, HTTP Request
5	**Format the reply**	Extract & Format Result pulls the text out of the response and shapes it. Two Code in JavaScript steps finish the job.	Tools: JavaScript Code

06 How It Works

From a user message to a clean reply

1. **User sends**
   An image and a question go into the chat.
2. **Request set up**
   The image and prompt are packaged.
3. **Vision analysis**
   GPT-4o looks at the image.
4. **Answer written**
   A model writes the response text.
5. **Data fetched**
   If needed, the HTTP tool pulls outside data.
6. **Clean reply**
   Code steps format the result for the chat.

Example conversation



`chart.png`

What does this chart show?

It shows a steady climb over several weeks, with a small pullback near the right edge. I also checked outside data to confirm the range.

Example only. For education, not financial advice.

BEHIND THE SCENES

1. `Set Image & Prompt` packages the image and the question.
2. `GPT-4o Vision Analysis` sends them to OpenAI.
3. `Message a model` writes the answer and can call the HTTP Request tool.
4. `Extract & Format Result` and two Code steps clean it up.
5. The chat shows the final reply.

07 Business Benefits & Expected Outcomes

The value, the time saved, and the operational gains

Fast first review

Users get an answer in moments instead of waiting in a queue.

Consistent feedback

The same prompt gives the same kind of review every time.

Answers with real data

The HTTP tool can pull in outside numbers to support the reply.

Clear, readable replies

Code steps clean up the output so it reads well in chat.

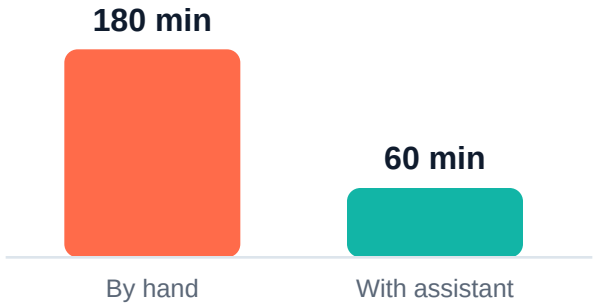
Scales with demand

More users do not need more reviewers at the same pace.

Reusable template

Swap the prompt to review different kinds of images.

Example time savings



30 image reviews a day x 6 minutes each = 180 minutes. If the assistant does the first pass and a person spends 2 minutes per image checking it, 60 minutes remain. You save about **120 minutes a day**, or 10 hours a week.

Example only. Real results depend on your image volume and how much checking you want.

08 Technology Stack & Implementation

The tools, what you need, and how it can be customized

TECHNOLOGY STACK

n8n	Workflow engine and the built-in chat trigger
OpenAI GPT-4o	Vision analysis of the uploaded image through the API
OpenAI model node	Writes the response text and can call a tool
HTTP Request tool	GET call that fetches outside data when needed
JavaScript Code	Extracts and formats the final result
Set node	Packages the image and the prompt

WHAT YOU NEED

- n8n account (cloud or self-hosted)
- OpenAI API key
- Access to the data API for the HTTP tool
- Your prompt rules and answer format
- A few sample images for testing

CUSTOMIZATION IDEAS

- Swap GPT-4o for another vision model
- Connect a CRM, store, or other API
- Send answers by email, Slack, or WhatsApp
- Save every review to Google Sheets
- Add a human review step for key cases

How it gets built

1 Define the use case

Decide which images and questions the assistant handles.

2 Write the prompts

Set the instructions and the shape of the final answer.

3 Connect the tools

Link the vision model, the response model, and the data tool.

4 Test and refine

Run sample images, then improve the prompts and formatting.

Ready to let your chat see images?

Tell us what kinds of images you review and what a good answer looks like. We build the prompts, connect the tools, and test until the replies are clear.

Define your images

Connect the tools

Test, launch, improve

Built with n8n, OpenAI GPT-4o, and HTTP APIs.