Conversational AI Agents

Conversational AI Agents

- **Conversation AI agents**
  - **AI that simulate a human**
  - **Perform a variety of tasks**

- **These agents integrate multiple AI models**
  - **LLMs**
  - **Text to speech model**
  - **Speech to text model**
  - **Voice cloning model**

Enhancing Human Jobs

- **Conversational AI agents have the potential to "enhance" several human jobs**

- **Social media**

  Content creation assistants, AI influencers
- **Education**
  - **Teaching assistants, professors, research assistants**
- **Personal support**
  - **Therapists, life coaches, friends**
- **Interviewers**
 - **Customer service, voter polling**

AI Voter Interviews

- **Worked with CrowdVox to conduct AI interviews across 4 US cities**

- **Results presented at US Conference of Mayors**

120 AI enabled in-depth interviews. 4 cities. 1 truth.

AI Voter Interviews

- **Agent was a clone of pollster John Della Volpe made with ElevenLabs (AI JDV)**

- **AI JDV designed by Tauhid, questions designed by JDV**

- **Voters called the agent on the phone and he conducted in-depth interviews with them**
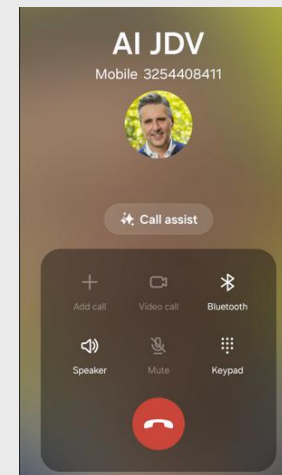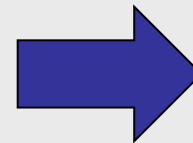
AI Voter Interviews

" **When do you feel most proud to be from Los Angeles?**

Times like right now. "

Charles, LA

" **Every day I enjoy the city even more. I find something new about my neighborhood and I love it. I absolutely love it so far.**"

Tiffany, Boston

" **I'm a Brooklyn girl…It's expensive, but I'm managing. We're a great city. The diversity of NYC is like nowhere else.** "

Marlene, NYC

" **In the future I hope for more peace and less stress. I love this place. You should come too, John.** "
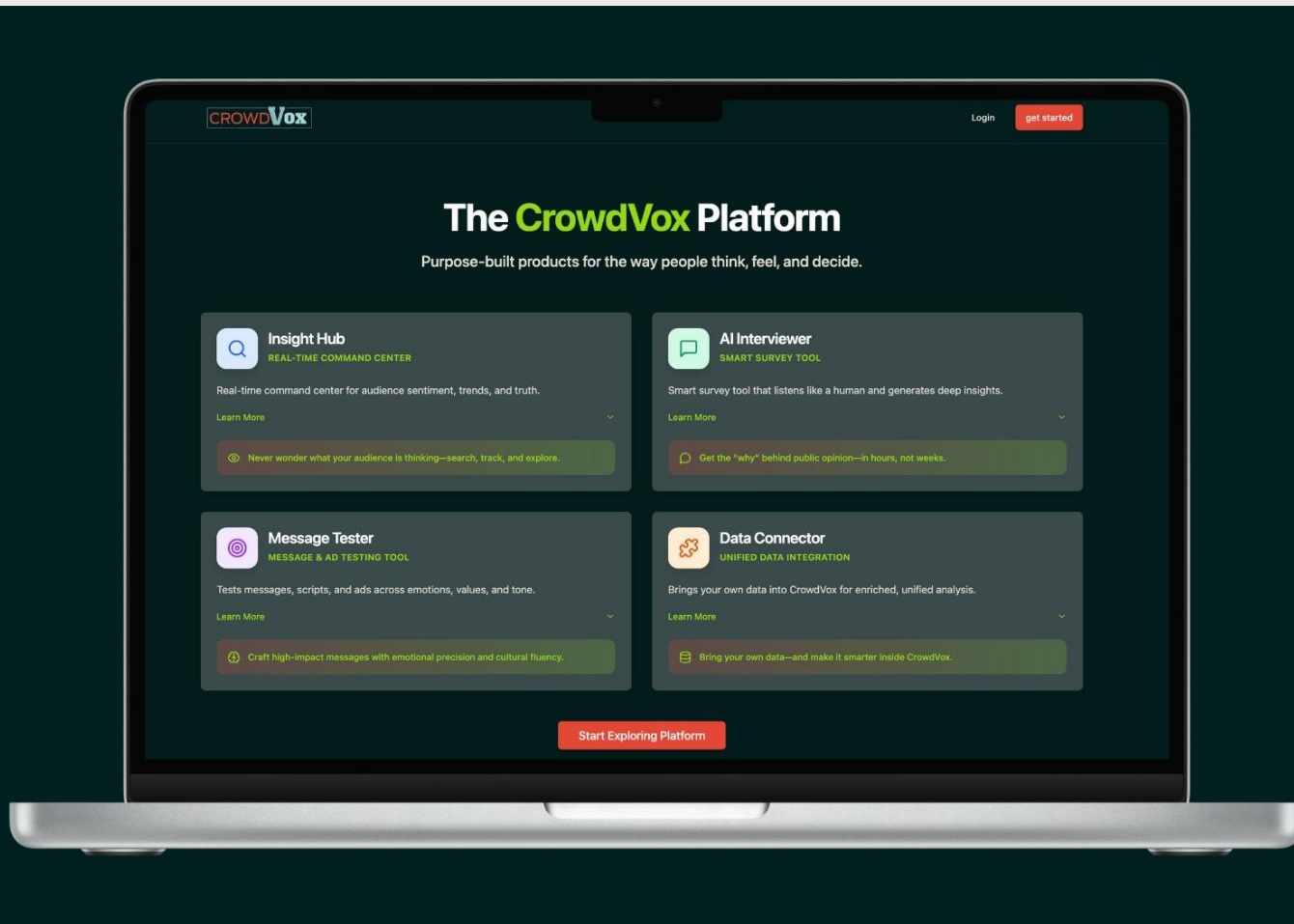
Yolanda, Tampa

15

AI Voter Interviews

AI Voter Analysis Platform

Building a Conversational AI Agent

- **Conversational AI agents main components**
  - **Prompt – text data about the agent's background, instructions, speaking style (ChatGPT)**
  - **Voice – AI cloned voice (ElevenLabs)**
  - **Tools – functions called by the agent to extract or introduce data to the conversation (n8n)**
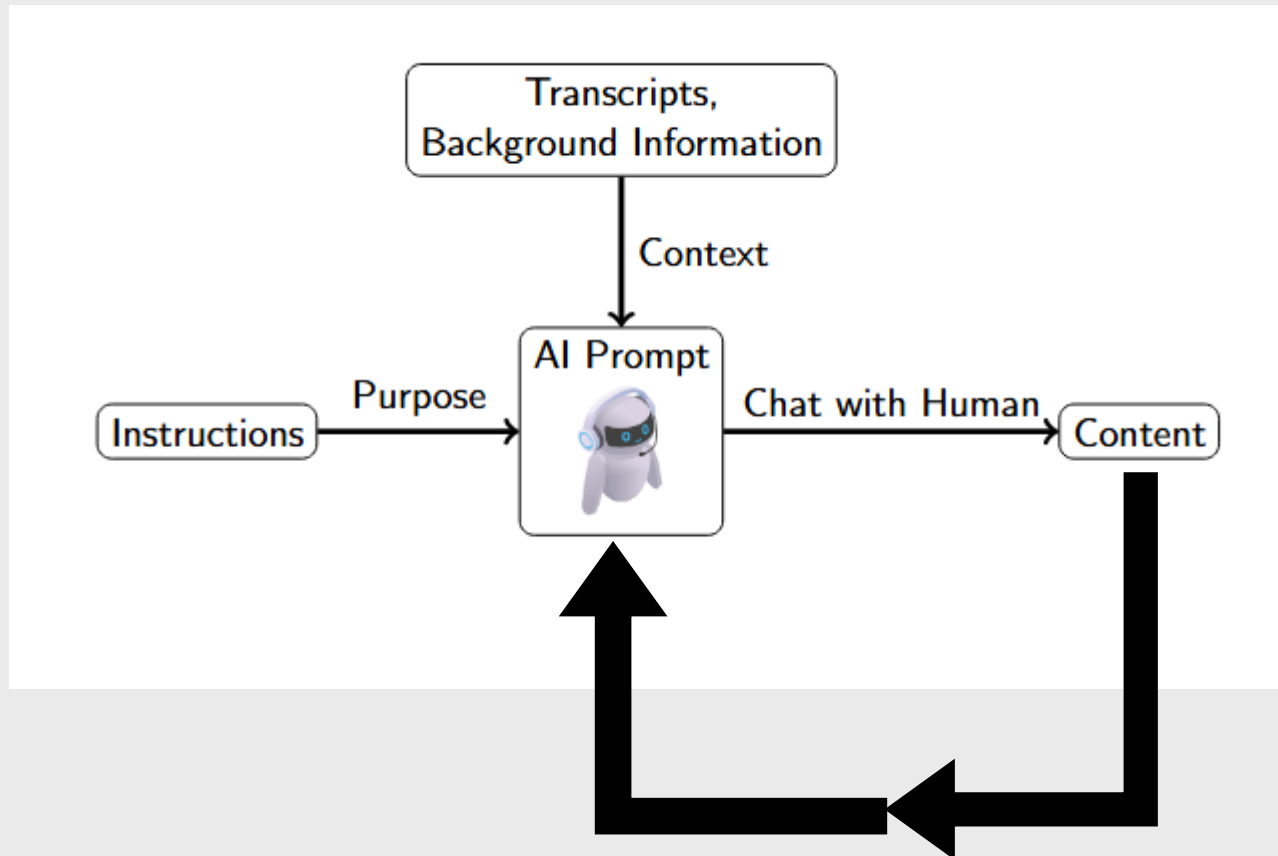 - **Phone number – how you can reach the agent (Twilio)**

Prompt Flow Diagram

- **Static prompt**
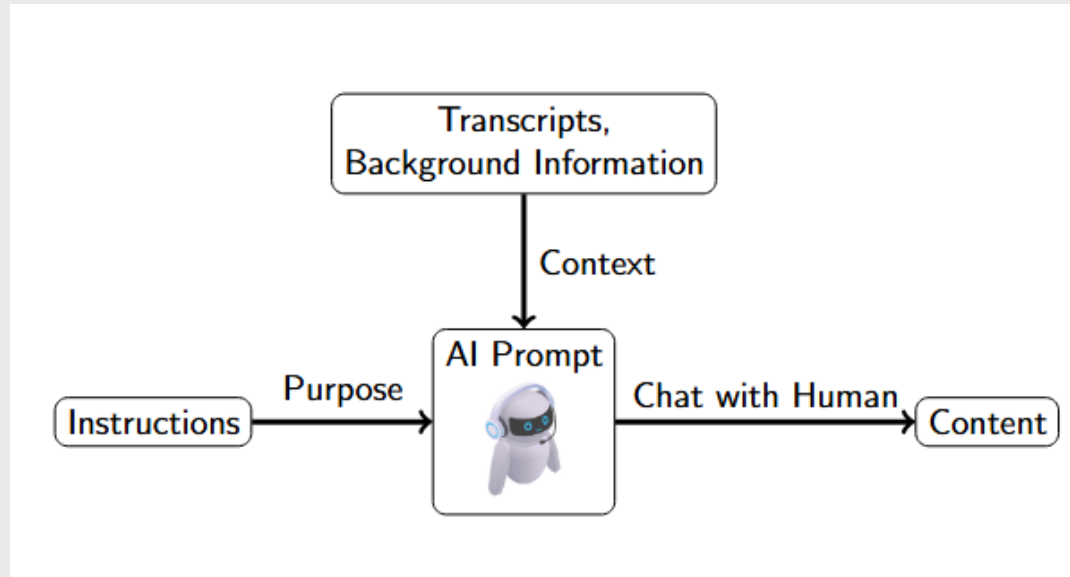
Prompt Flow Diagram

- **Dynamic prompt – feedback new conversations into previous prompt**

Dynamic Prompts

- **ElevenLabs does not have default dynamic prompts**

- **You need to write some code that runs periodically to update prompt with past conversations**

```python
from flask import Flask
import os
import time
from datetime import datetime, timedelta
import threading

# Import your existing functions
from agent_prompt import create_agent_prompt  # Update with the correct filename if needed

app = Flask(__name__)

text_files_dir = "text_files"
filename_speaking_style_comprehensive = os.path.join(text_files_dir, "speaking_style_summary_comprehensive.txt")
filename_background = os.path.join(text_files_dir, "background_lisa.txt")
filename_emotional_state_template = os.path.join(text_files_dir, "emotional_state_template_lisa.txt")
filename_dialogue_style = os.path.join(text_files_dir, "dialogues_lisa.txt")

llm = "gpt-4o"
pbusy = 0.5
CALL_DURATION_MIN_SECS = 60


def run_task():
    """
    Runs the agent update task every hour.
    """
    while True:
        try:
            START_TIME = datetime.now() - timedelta(hours=24)
            print(f"Running the agent update at {datetime.now()}")

            create_agent_prompt(
                filename_speaking_style_comprehensive,
                filename_background,
                filename_emotional_state_template,
                filename_dialogue_style,
                llm,
                pbusy,
                START_TIME,
                CALL_DURATION_MIN_SECS
            )

            print(f"Agent update completed at {datetime.now()}")
        except Exception as e:
            print(f"Error updating agent: {e}")
```

Lisa AI Agent: Blackpink-Inspired Workflow

👑 High-Level Summary

- **Analyze Lisa's speaking style** using past transcripts to capture her unique voice.

- **Load quotes** Lisa has said to preserve her tone and personality.

- **Import background info** on Lisa and Toeheed to add emotional and narrative context.

- **Calculate Lisa's emotional state** using templates and past conversation history.

- **Study dialogue patterns** between Lisa and Toeheed to keep interactions natural and consistent.

- **Generate a "busy status"** to set her availability (randomly chosen).

- **Summarize recent conversations** using ElevenLabs + GPT-4o to stay up to date.

- **Retrieve the most recent conversation** for continuity.

- **Compile all this into a prompt** that defines Lisa's behavior and mood.

- **Update the live AI agent** on ElevenLabs with the final, fully composed prompt.

✨ Why It Matters

- Personalizes the AI to reflect a consistent, emotionally responsive character.

- Combines brand personality, memory, and tone into one intelligent assistant.

- Perfect for influencers, entertainers, or brand avatars in the Gen AI age.

Voice Cloning

- **ElevenLabs allows us to clone voices (https://elevenlabs.io/)**

- **We only need a 10 second audio file**

- **Can obtain audio files from YouTube**
    - **Choose a YouTube video of the subject speaking alone or mostly alone**
    - **Download audio of YouTube video (https://tuberipper.com)**
    - **Clip the audio to 10 to 30 second clips (https://audiotrimmer.com/)**

Creating Conversational AI Agent

- **Conversational AI Agent can be created on ElevenLabs (https://elevenlabs.io/)**
- **Agent needs**
  - **Name, prompt, voice, LLM**
- **Agent can perform functions defined by tools during the conversation**
  - **Collect information from conversation (user name, location, etc).**
  - **Introduce data into conversation (weather, stock prices, etc)**
- **ElevenLabs provides automatic conversation analysis**
  - **Summary, data collection, conversation evaluation**

Phone Number

- **Conversational AI agent can be reached by phone (like a human) if you give it a phone number**

- **Phone numbers can be purchased from Twilio (https://www.twilio.com/)**
  - **Numbers cost $1.15 per month**
  - **Usage costs $0.40 per hour**

Agent Tools

- **You can give your ElevanLabs agent different tools**

- **Tools let the agent perform functions that need outside data or code**
  - **Send emails**
  - **Transfer user to another agent**
  - **Provide real-time information, like stock prices, weather, etc**

Default Tools

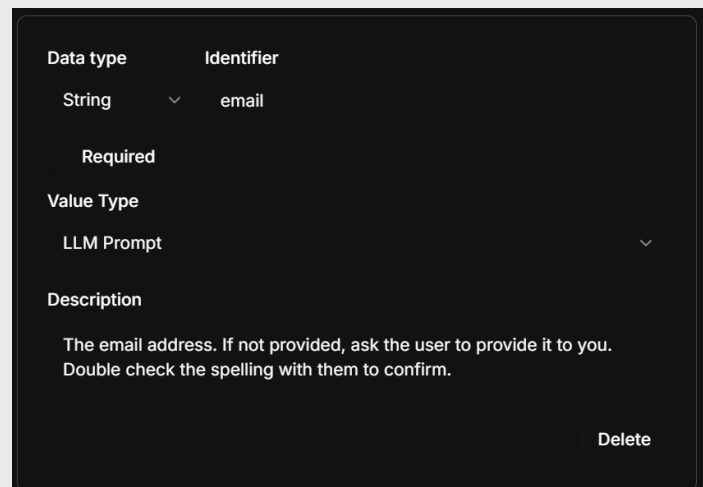- **Several new default tools are available in ElevenLabs**
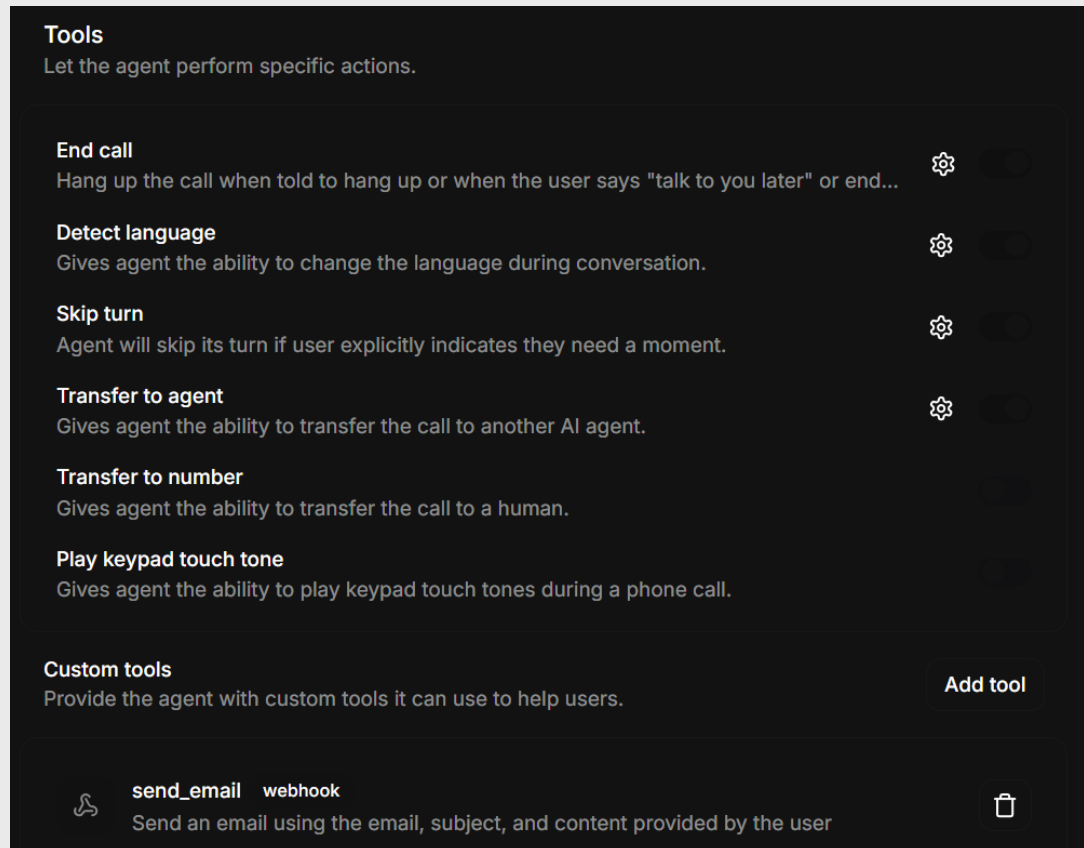
Custom Tools

- **You can also add in a custom tool in ElevenLabs**
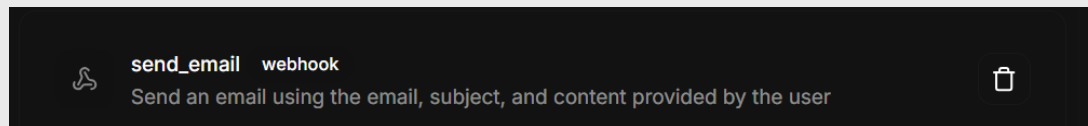
- **Tools can extract data from the conversation and then send them somewhere else for processing**

Webhooks

- **Webhook – a URL where you can send data**
- **Agent will send data to a webhook, and then the tool will use that data to complete its function**

- **Webhook methods**
  - **POST: Sends data in the body of the request — used when submitting or creating something.**
  - **GET: Requests data in the URL — used to request or retrieve information, not submit it.**
- **Webhooks almost always use POST because they are sending data (like a message or event).**

Workflow Automation: n8n

- **Our tool will be hosted on a workflow automation platform called n8n: https://n8n.io/**

- **On n8n we can connect many different apps to create tools**
  - **Execute code**
  - **Get AI chatbot response (ChatGPT, Gemini, etc)**
  - **Send email**
  - **Edit images**
  - **And so many more…**
- **A nice YouTube video on connecting ElevenLabs with n8n: https://www.youtube.com/watch?v=dXylGsyrlxE&ab_channel=AILuke**
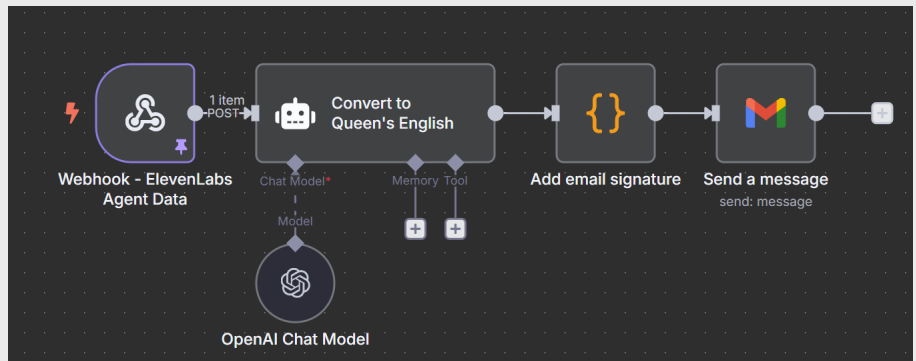
n8n Workflow

- **Building a workflow tool is done without coding**
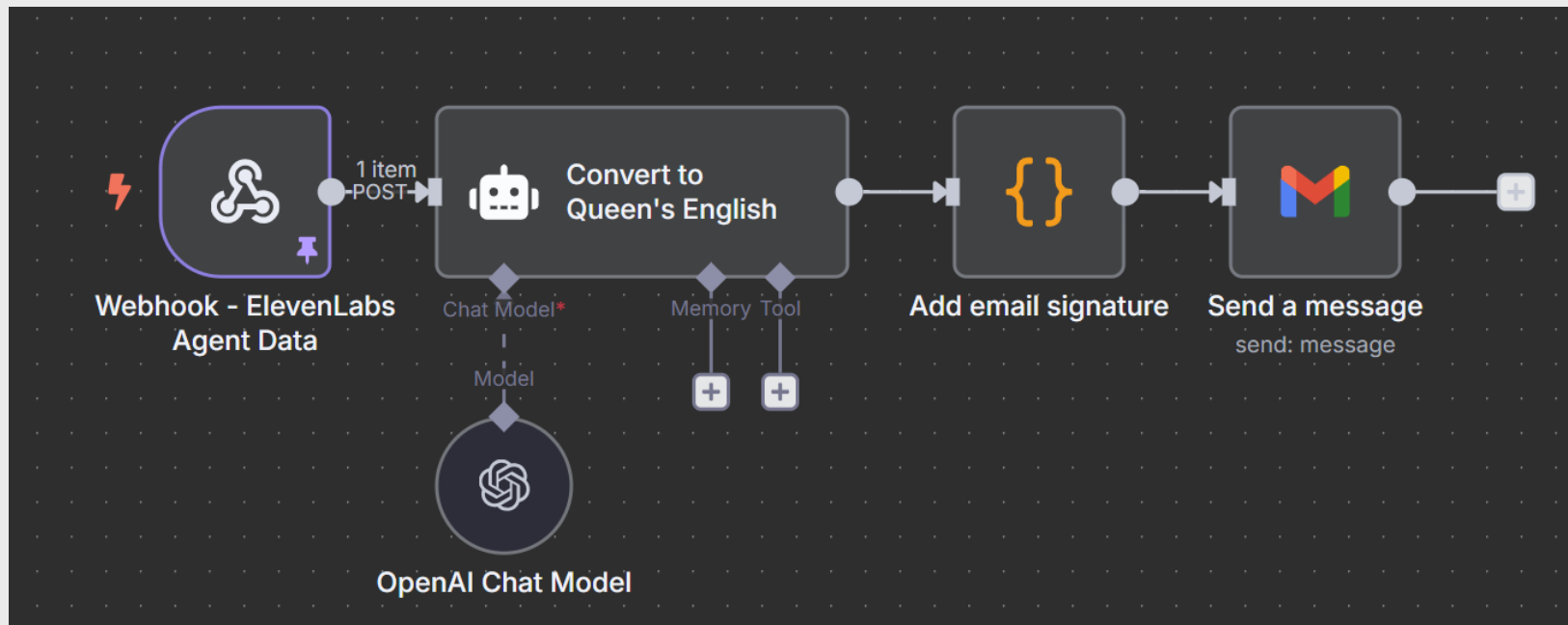
n8n Workflow

1. **Data comes to the webhook from ElevenLabs**

2. **AI Agent rewrites the email to be in "the Queen's English"**

3. **Code appends signature to email**

4. **Send a message sends the email from my Gmail account**

Connecting Agents in n8n

- **n8n makes it really easy to connect AI agents to each other for more complex workflows**

- **Here is an example of a rap song writer**
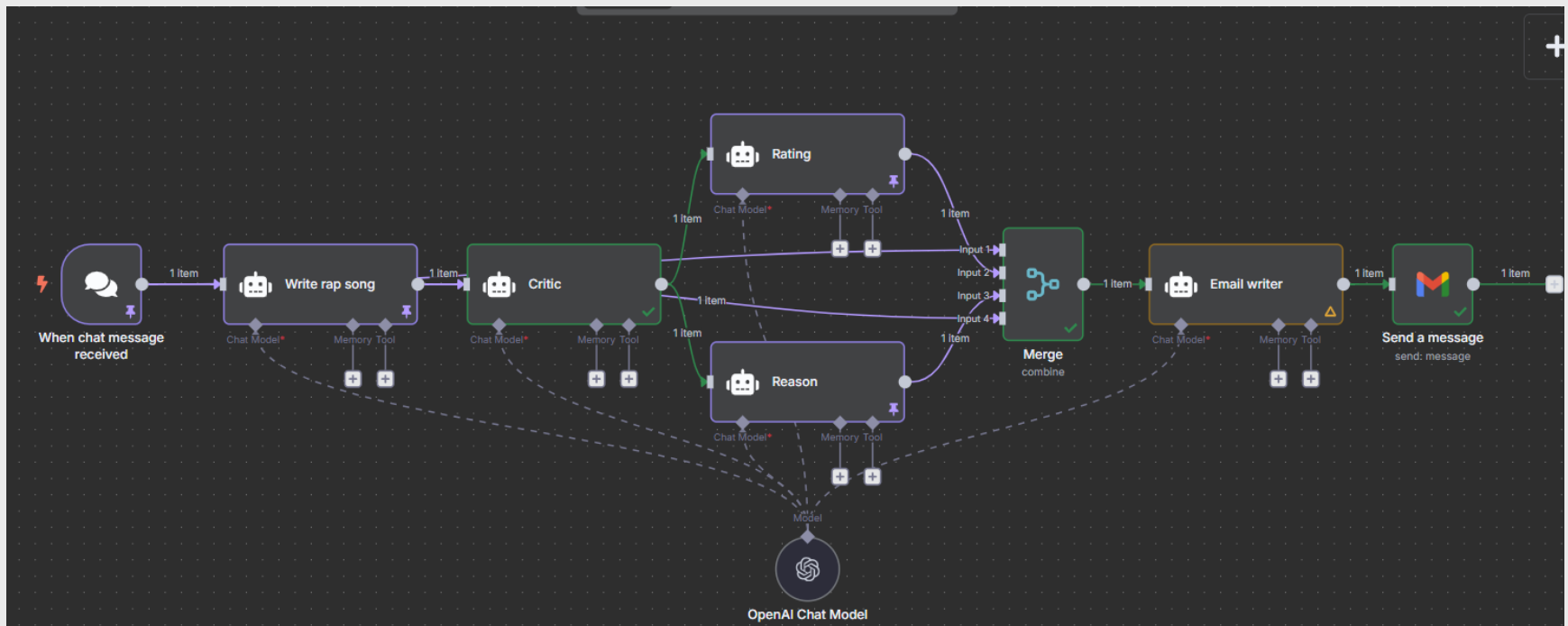
"Coding" Session

- **We will create an ElevenLabs AI Conversational agent that can send emails with n8n tools**

- **We will try to make a more intelligent n8n work flow for the rap song writer**

- **No real coding today, just some n8n syntax**