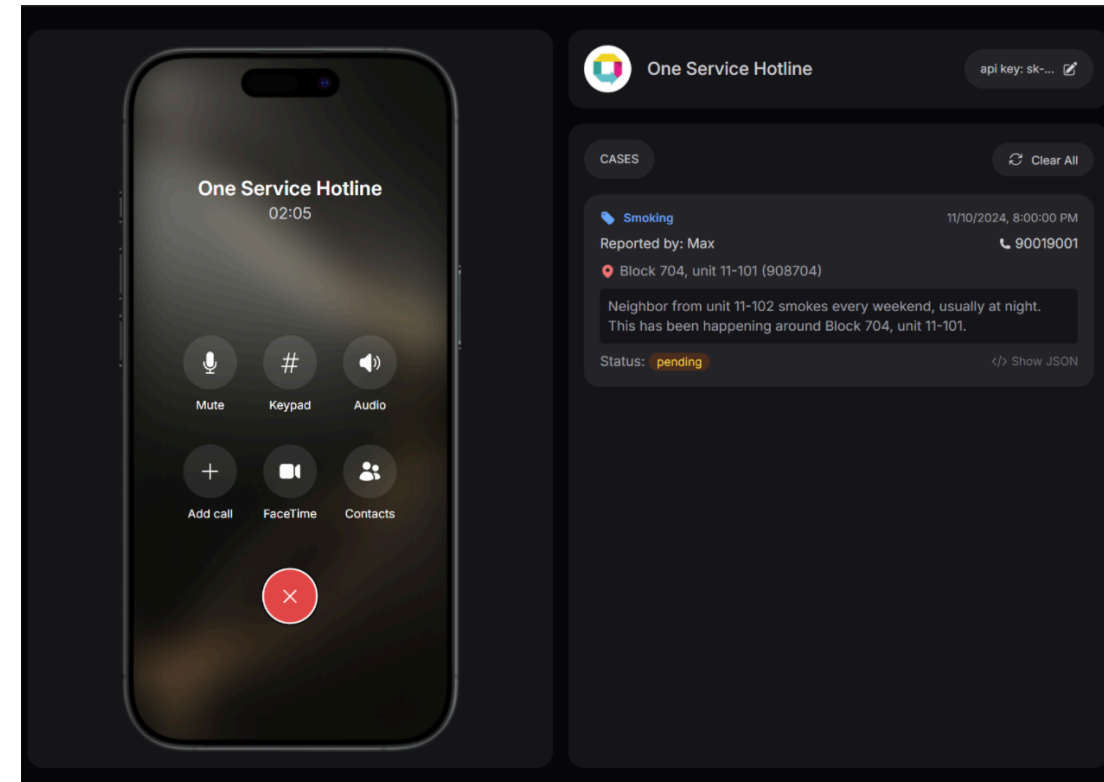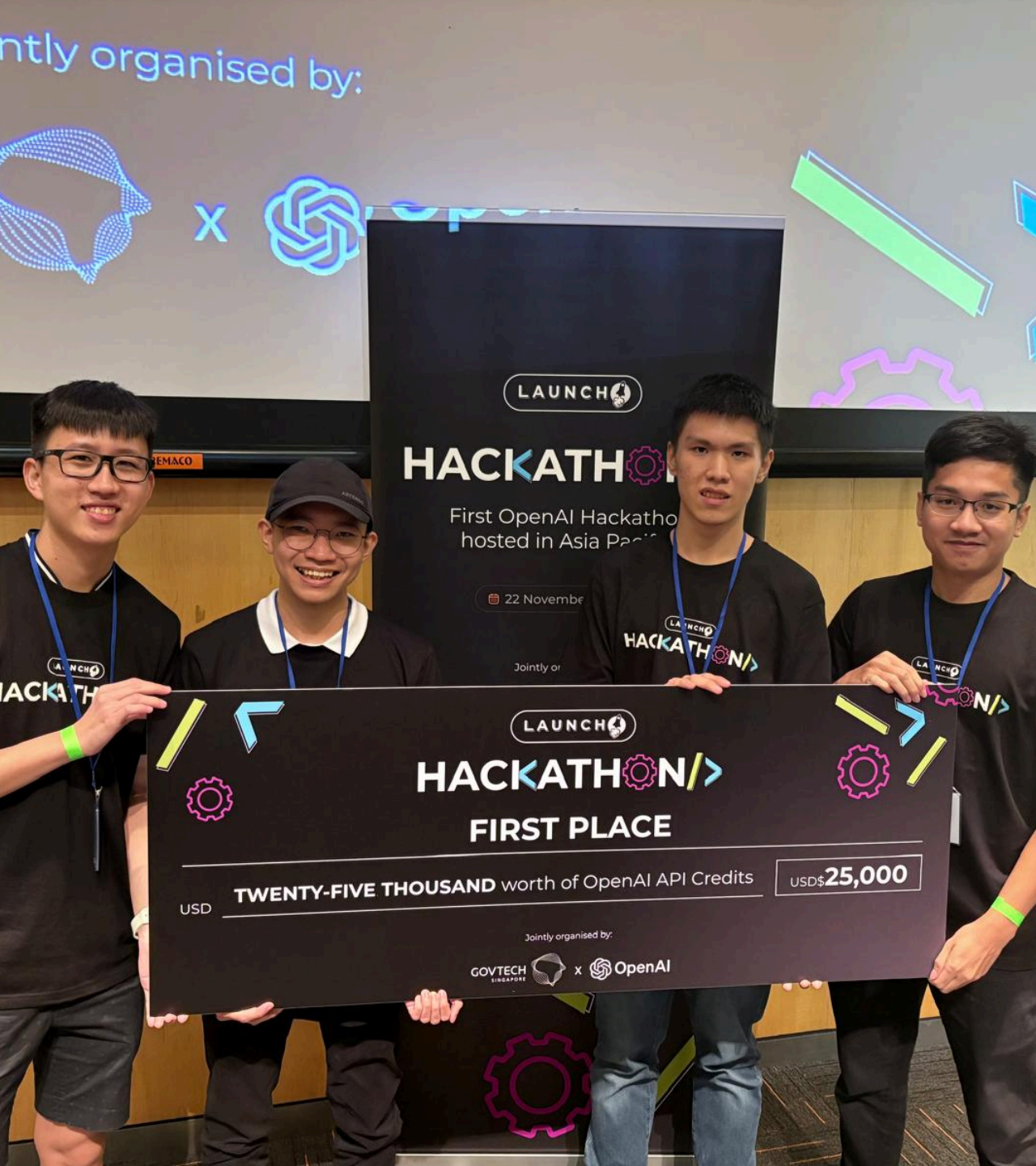# Oneservice Hotline v0.1

Helpful AI assistant to submit cases on municipal issues.

First prize winner of GovTech x OpenAI Hackathon 2024

About Us

Group of aspiring young engineers

- Ong Zheng Kai
- Wong Zhao Wu, Bryan (looking for Summer Intern 2025!)
- Oh Tien Cheng
- Muhammad Faqih Akmal

Our Solution

A **speech-to-speech** AI hotline that can be used to assist the caller in **filing OneService cases** in multiple Singapore spoken language using **OpenAI's Realtime API**.
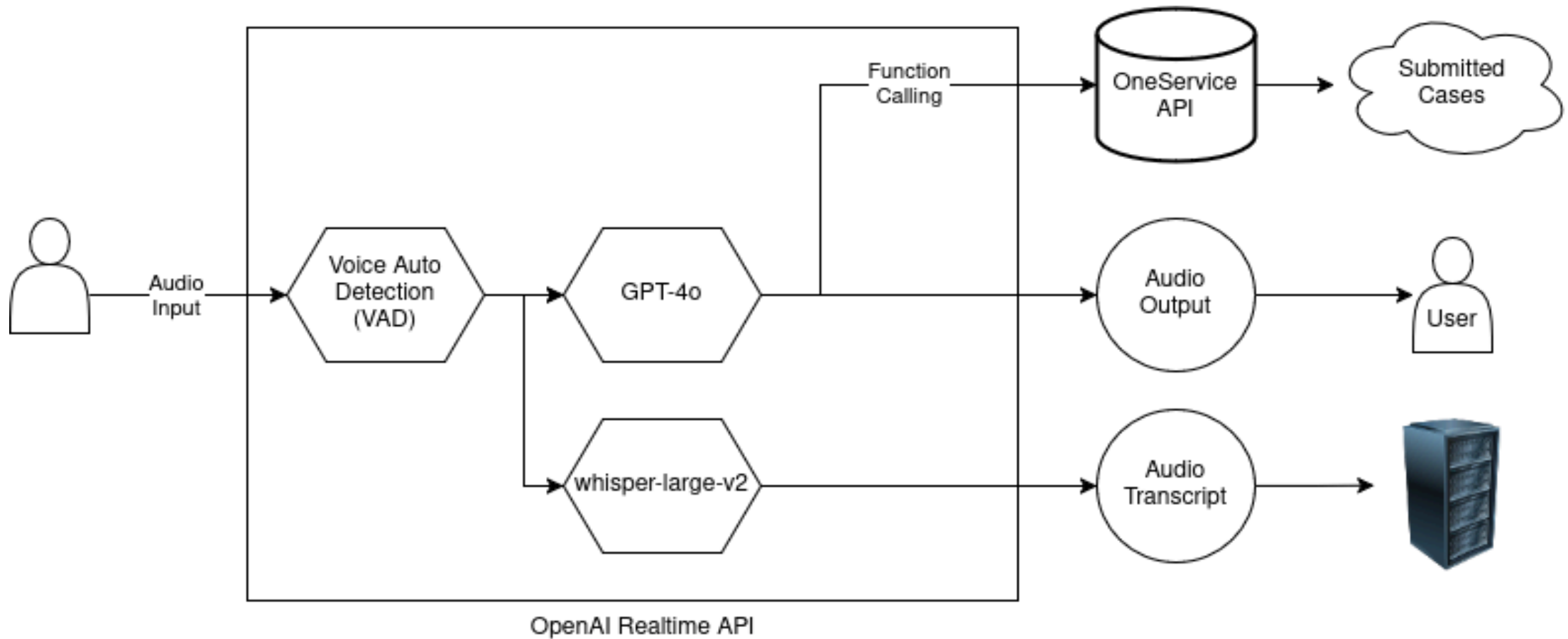
Demo

- English Demo
- Chinese (Hokkien) Demo

OpenAI's Realtime API

- Uses GPT-4o for native audio and text token ingestion and generation.
- Uses Stateful WebSocket or WebRTC session with event-based communication protocol.
  - client-sent events to update the state of session
    (`input_audio_buffer.append` , `response.create`)
  - listen server-sent events to received updates (`response.audio.delta` , `response.done`)
- Supports function-calling / structured output.

Realtime API: GPT-4o

More About Realtime sessions

- Server-side context management.
  - Uses client-sent event to update the remote conversations (i.e. LLM's context)
  - Save bandwidth by not sending audio-buffer repeatedly
- Maximum session length of 30 minutes.
- Supports creating of response outside of default conversation.

What Works Well?

- GPT-4o **understands Singapore languages and dialects** (*Singlish, English, Mandarin, Hokkien, Teochew, Cantonese*) well enough to submit case reliably.

- GPT-4o orchestrated the workflow with just **25 lines of instruction prompting** (without complex agentic workflow).

What Doesn't work?

- Voice Activity Detection (VAD) is not reliable in loud environments with multiple speakers in background.

- Whisper doesn't work reliably with Singlish (*when different languages mixes*).

- Stateful server interaction of Realtime session with maximum duration of 30 minutes.

- Realtime API is costly.

Getting Started

https://github.com/pipecat-ai/pipecat

https://github.com/openai/openai-realtime-console

Thank You

Let us know if you have interesting idea on how to uses 25k USD of OpenAI Credits 😁