Real-time Large Language Model-driven AI Chatbots for Smart Tourism and Healthcare

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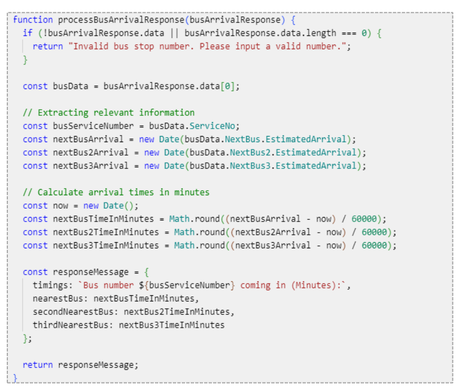
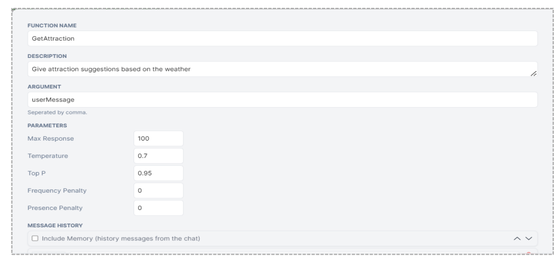
Introduction

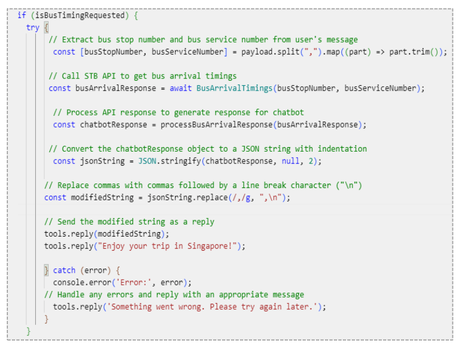
- Generative AI is a pivotal aspect of AI, enabling models to autonomously create diverse content like text and videos.
- Recent advancements in Generative AI and Large Language Models (LLM) have indeed been remarkable.
- LLMs, such as OpenAI's GPT-3, are at the forefront of this revolutionary technology. These advanced systems are trained on massive datasets using sophisticated machine learning algorithms to understand human language patterns. Once internal structure has been developed, LLMs can generate humanlike responses to a wide range of user prompts.
- These empowering tools were initially available only for research but have now become more accessible to everyone, grabbing headlines' attention recently.
- This poster explores the practical capabilities of LLMs and uses real time data through API calls to make practical chatbots on the Nemobot platform.

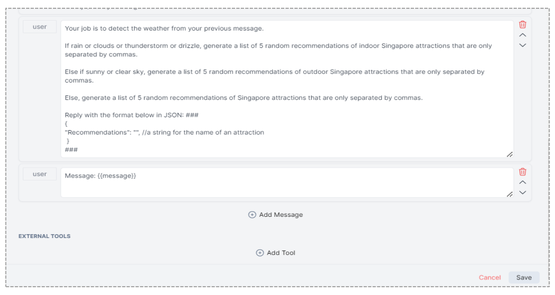
Main features of our Tour Guide Bot

- Targets tourists and locals to have a seamless travelling experience, minimizing disruptions from weather or traffic conditions
- Features include :
  1. Making use of external API calls from OpenWeatherMaps to obtain *real-time weather data*
  2. Based on appropriate weather conditions, GetAttraction LLM function is called to randomly generate *tourist attraction suggestions*
  3. Utilising external API calls from Singapore Tourism Board to get accurate *real-time bus arrival timing updates to* the local tourist spots



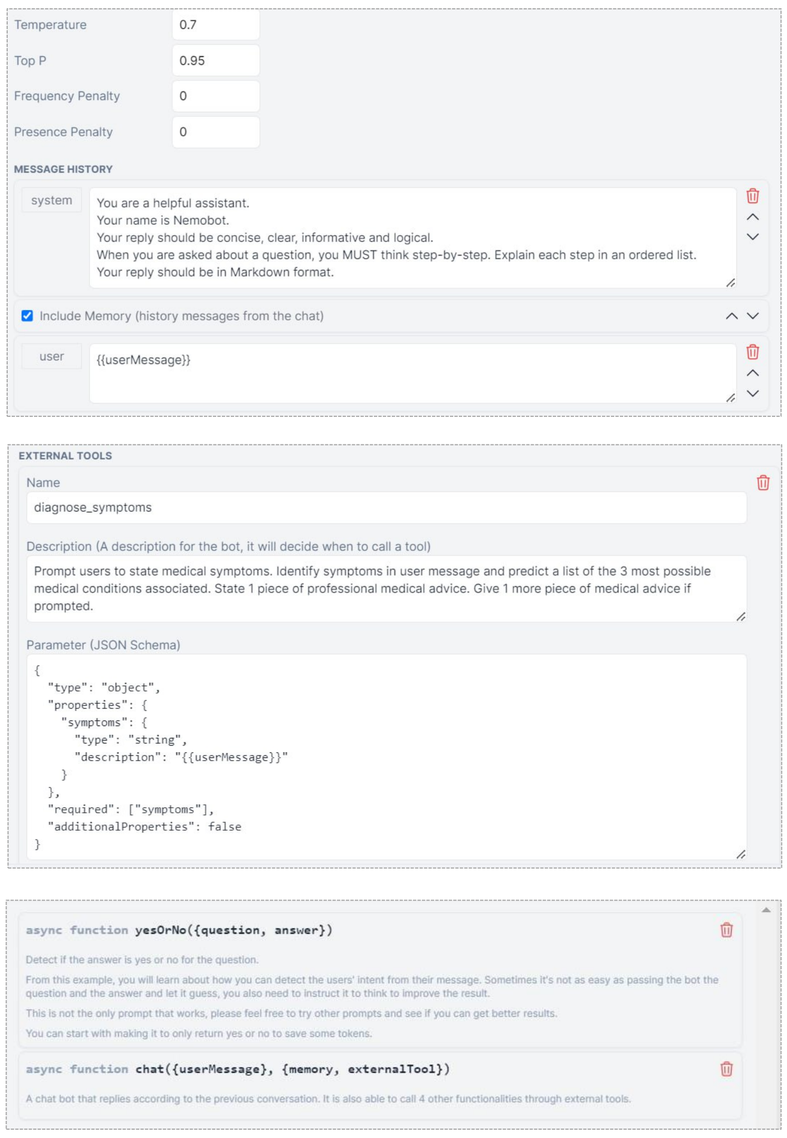






Extension : Main features of our Medical Bot (MD)

- User-friendly and caters to the everyday needs of public members to gain convenient access to important clinical information
- Harnesses capabilities of LLM functions through external tools
  1. *"diagnose_symptoms"* tool enables users to communicate their symptoms and receive specialised diagnosis immediately.
  2. *"appointment_scheduling"* with healthcare providers directly, streamlines process and optimises patient access to medical care.
  3. "*medical_reminders*" tool encourages timely and precise medication intake, prioritising user's health outcomes.
  4. "*healthy_tips*" tool provides users with practical advice and tips to maintain a healthy lifestyle
- With these powerful functionalities, MD empowers users to take control of their health, providing a dependable and convenient healthcare support system.



Attempts and takeaways

- As novices, navigating prompt engineering with LLM functions and combining JavaScript code for Nemobot's behavior was challenging.
- Missing out on reading Nemobot's OpenAI documentation initially led to many trial and errors, hence we sought advice from our mentors and ChatGPT for guidance.
- Lessons learnt :
  1. Leveraging strengths of human-written code AND dynamic prompt engineering surpassed limitations of each approach in isolation (e.g. called API in code instead of in LLMs due to security risks)
  2. Succeeded incorporating real-time data in the functions unlike static LLMs
  3. Usage of precise instructions while conversing with Nemobot enabled us to utilise diverse facets of LLM functions(e.g. in-built human-like capabilities)

About Nemobot

- Seamlessly integrates OpenAI's API, incorporating advanced features without complex coding (e.g. external tools)
- Building upon its remarkable in-built intelligence, Nemobot adeptly determines an appropriate output based on clear instructions provided by coder.
- Flexibility further expands Nemobot's possibilities in various other domains.
- AI models are challenged to rely on averaging effects to accurately represent systems with diverse etiologies (e.g. due to dynamic nature of biological systems)
  - Nembot, although a relatively new endeavour, holds much potential for future exploration

Future Plans: Medical Tourism

- Merging functionalities from both chatbots creates a brand-new, cutting-edge chatbot that effortlessly combines the worlds of travel and healthcare.
- Tailored for medical tourists, it offers a one-stop solution for individuals seeking high-quality medical treatments abroad while enjoying a seamless travel experience.
- From a comprehensive directory of accredited healthcare facilities, to real-time updates of the latest medical advancements, to multilingual support, these wide range of features ensure a smooth and informed medical tourism journey.

NemoBot Platform QR

Tour Guide Bot QR

Medical Bot QR

References

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