Travelling in a Breeze Using Our GPTTransit Solution

I. Objective

Guided by the vision of "Making travel a breeze with TransportGPT" and aligned with the Land Transport Master Plan (LTMP) 2040's goals for inclusive infrastructure, our team has crafted an innovative app that utilizes Generative AI technologies, including Large Language Models (LLMs) that facilitates personalized travel planning and redefines the conventional thinking that the shortest route is the best route. Our innovative solution is dedicated to fostering a transport environment that not only generates reliable and accurate public transport solutions but also fulfill the diversified needs of every traveller.

II. Dataset Used

Our app establishes API connections from the National Environment Agency (NEA) and the Land Transport Authority (LTA) DataMall that integrates a comprehensive range of public transportation features, including real-time station platform crowd levels, forecasted passenger volumes, train breakdown alerts, nearest taxi station, as well as weather forecasts between the next 2 to 24 hours. Additionally, we have incorporated information from the Singapore Land Authority's (SLA) OneMap that enhances our app's capability to offer accurate geographical information, route options, fare details, and travelling time to enrich travel considerations and improve travel planning accuracy. Our multifaceted and creative approach to data integration ensures the personalized travel recommendation is the most efficient, holistic, and convenient for our users.

III. Key Features of the Solution

Our application utilizes the GPT4.0 LLM, LangChain framework and OpenAI Tool agents to tailor travel recommendations based on individual needs. For example, it will consider less crowded route options for seniors, boosting their comfort and safety. Moreover, our app takes weather forecasts into consideration to encourage walking, showcasing the potential number of steps one could achieve, thus aligning with the Health Promotion Board's Healthier SG initiative. This tailor to the needs of commuters who are more health conscious. Additionally, the app is equipped to provide real-time updates in the event of train disruptions, traffic facilitation, offering alternative routes and transport modes to alleviate the inconvenience of getting trapped amid the dense crowds at the affected stations, thus guaranteeing a more seamless travel experience overall. To ensure model's quality and reliability, we have built in guard rails so that the model will only respond to transport-related queries; and feedback mechanisms to improve the model's performance and accuracy over time.

IV. Further Considerations and Recommendations

We recommend that our app be integrated with the existing "MyTransport.SG" app to provide a one-stop app for travellers. To further enhance the solution, it is recommended to include other modes of transport (e.g. ride sharing) to improve the suggestion of routes. Furthermore, we could incorporate sheltered walkway information to complement existing built-in weather data to strengthen our solution to offer a more holistic option. Lastly, integrating our solution with the Healthy 365 app would promote healthy living by giving health benefit estimates (i.e. number of steps) and potential incentives. Thus, creating synergy between travel and health for the travellers.