

Enhancing Communication with Motorists through

GogoGuru

Your Personalised Co-Pilot



Driving in Singapore: A Daily Challenge

Two major sources of frustration:

1. Fragmentation of information

Real-time traffic information, such as traffic updates, public transit schedules, parking availability, and route planning services, are often **fragmented across different sources and maintained by multiple entities**.

As a result, **users often need to use multiple apps/ websites** to look for the information they need, resulting in inconvenience.

2. Unpredictability of traffic conditions

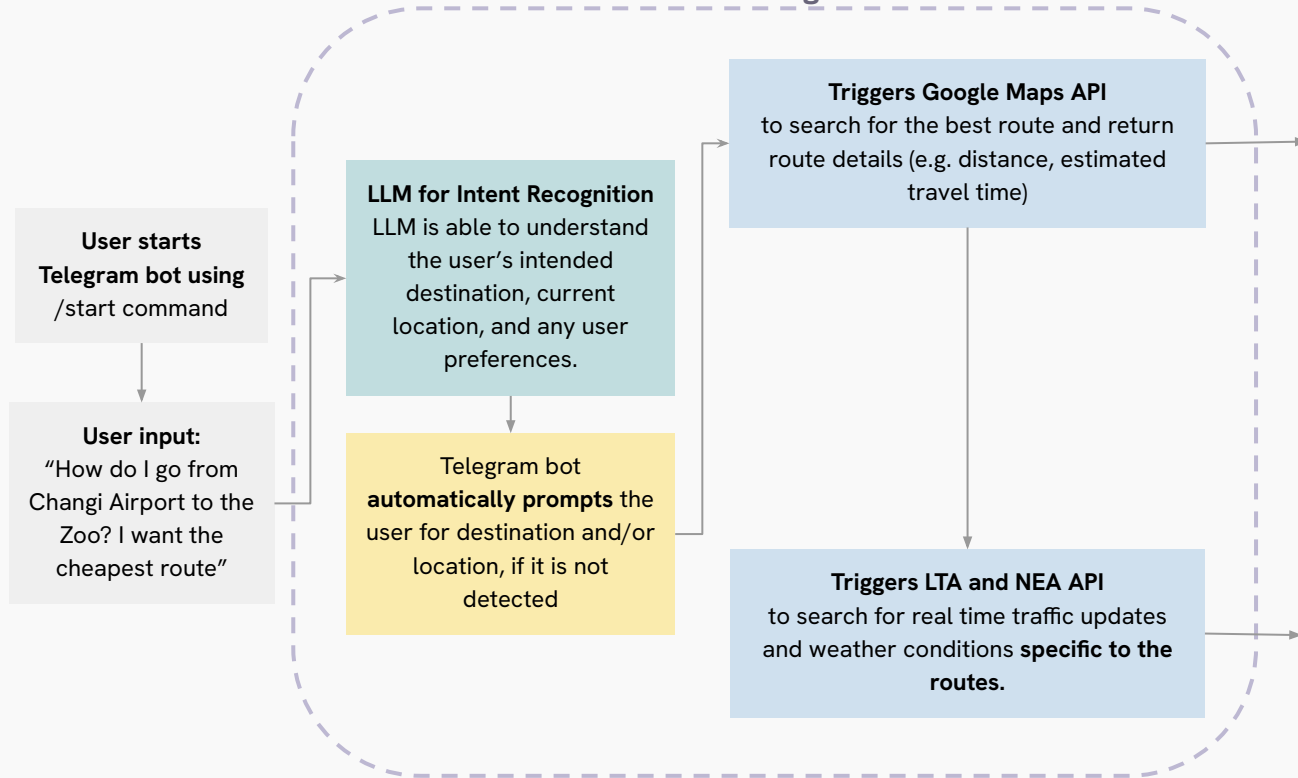
Accidents, road closures, and unpredictable events can disrupt even the most meticulously planned journeys. **Users often become aware of these disruptions only when they are already on their journey.**

Users may also **lack visibility on impending bad weather conditions**, such as heavy rain, which could impact driving safety.

The lack of advance warning can lead to frustration, delays, and sometimes even safety hazards.

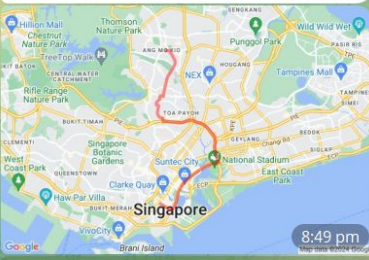
Overview of Flow

Backend AI Algorithm



Route Details

Your starting location has been identified as AMK Hub, and your destination is Chinatown Point. 8:49 pm



Open in Google Maps

Total Distance: 16.1 km
Estimated Travel Time: 32 mins

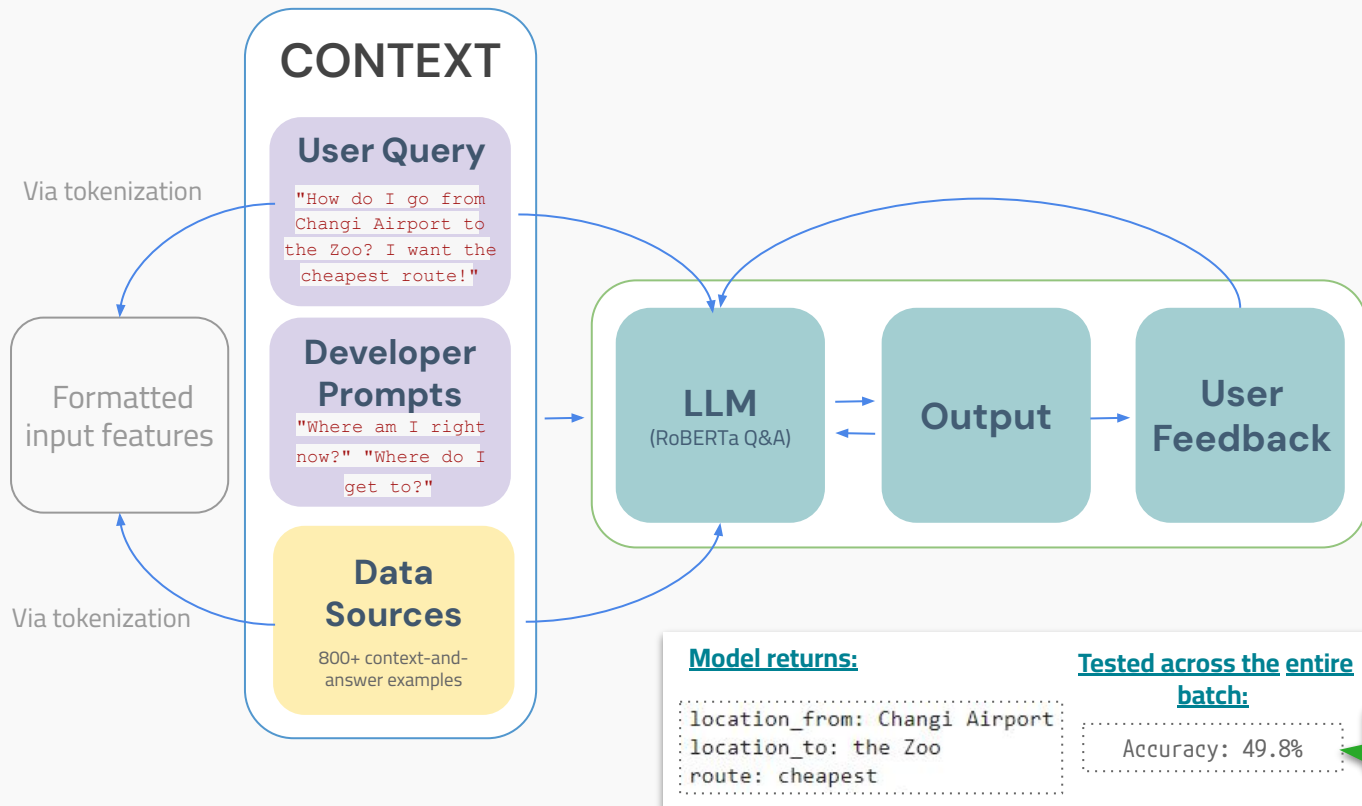
Real Time Advisory

Real-Time Traffic Conditions:
⚠️ There are potential issues along the route. Please exercise caution and prepare for an increased journey time.
(20/3)20:12 Obstacle on PIE (towards Tuas) after CTE(City) Exit. 8:49 pm

Real-Time Weather Updates:
☁️ There is current heavy rain along Bishan Road. Please drive carefully. 8:59 pm

Tech Stack 1: LLM workflow

Continuously iterate with better prompts, better context, and/or adapt model with better responses



Workflow

1. **Prompt Engineering:**
Ask better questions
2. **Retrieval:**
Add more context for better response
3. **Fine-tuning:**
Train model to give better responses through continuous iteration

Accuracy improved by
+44.2% vs base model

Tech Stack 1: LLM fine-tuning

Fine tuning model using local Singaporean context and greater diversity of queries

Initial baseline model using pre-trained HuggingFace QnA to test overall workflow

Did not adapt well to complicated prompts and local phrasing

```
def qna(question, context):
    QA_input = {
        'question': question,
        'context': context
    }

    res = qa_model(QA_input)
    return res

def from_to_qna(context):
    FROM = 'Where is the user coming from?'
    TO = 'Where is the user destination?'

    from_resp = qna(FROM, context)
    to_resp = qna(TO, context)

    return from_resp['answer'], to_resp['answer']
```

Accuracy 5.6%

Trained model using custom dataset (100+ samples) inspired from common queries and popular Singapore locations

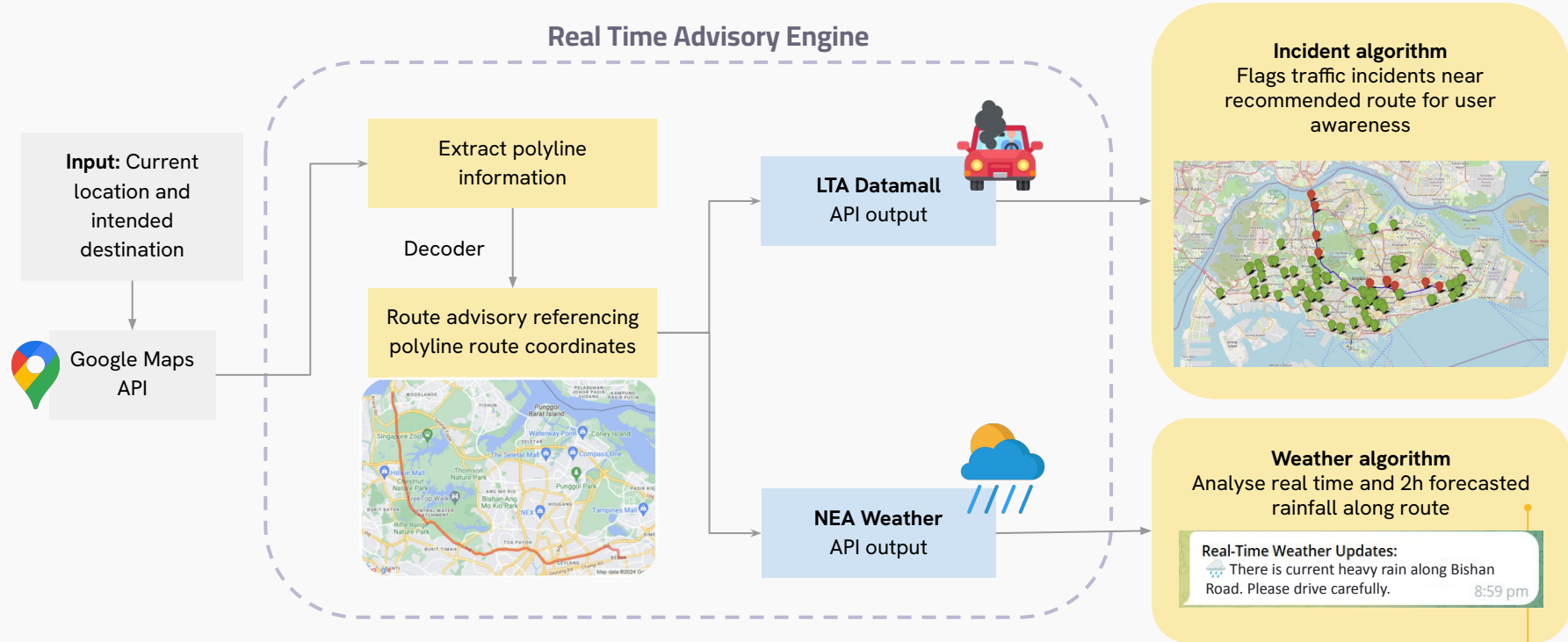
context	question	answer
How to go to Orchard from Novena?	Where am I right now?	Novena
How to go to Orchard from Novena?	Where do I get to?	Orchard
I am looking for directions to Marina Bay Sand...	Where am I right now?	Clarke Quay
I am looking for directions to Marina Bay Sand...	Where do I get to?	Marina Bay Sands
Need to find my way to Gardens by the Bay from...	Where am I right now?	Little India

Increased dataset complexity (800+ samples) with common Singaporean phrasing and more dataset variety

context	question	answer
How to get to Orchard from Novena by car? Fast...	Where am I right now?	Orchard
How do I drive to Ang Mo Kio quickly?	What route do I want to take? Fastest? Cheapest...	Fastest
Eh, how do I go to Sentosa by bike (cycle) fro...	Where do I want to go?	Sentosa
Tell me if it is possible to get to Serangoon ...	Where do I want to go?	Serangoon Nex
Can I cycle to Marina Bay Sands from Zoo?	Where am I right now?	Zoo

Accuracy 49.8%
Improvement of +44.2% against base model

Tech Stack 3: Real-Time Analysis



Product Demo: Helping the “Busy Bee”

“What a rushed week! I need to catch my business flight to Jakarta in 3 hours! How do I get there quickly?”



Darryl
31, Finance



Tue, 12 March
12:36am

