

Smart Batching

...

Team - adiraj00764

Problem Statement

Smart group driving means grouping people with similar destinations and travel schedules to minimize the number of vehicles needed for transportation. Intelligent driving aims to reduce traffic, reduce costs and reduce environmental impact. Typical problems to be solved are real-time tracking systems, last-mile connections, optimal matching algorithms, security measures, peak-time demand management, etc.

What is Smart Batching?

In the context of transportation, intelligent bundling refers to technology that optimizes the use of transportation resources such as vehicles and drivers by grouping shipments or passengers with the same origin, destination, and characteristics into a single trip.

The idea of intelligent traffic congestion is to reduce the number of empty or partially filled vehicles on the road, which can lead to lower transport costs, lower emissions, and improved overall efficiency.

For example, a delivery company can use smart batching to optimize delivery routes by grouping packages with similar destinations and delivery times into a single delivery cycle.

Business model or batching process

One potential business model that could benefit from **an intelligent passenger allocation** process is **transportation services** for commuters in urban areas. **Here is a possible batch** process:

- **Booking Collection:** Passengers **book their desired shuttle bus** online or through an app.
- **Data pre-processing:** **Reservations** are **pre-processed** to extract relevant information such as pick-up and drop-off locations, preferred travel **times** and passenger preferences.
- **Reservation Group:** Once reservations **are pre-processed**, they are grouped based on factors such as geographic proximity and travel times.
- **Lot Allocation:** **Reservations** are **allocated into lots**, the **lot size of which is** determined by the capacity of shuttle vehicles and the number of passengers in each group. **Bata Transport: Shuttle** vehicles are loaded with passengers in each **set** and drivers follow an optimized route to transport passengers as efficiently as possible.

Future Perspective

Item 1

one idea could be to **add** real-time traffic and **transport** data to further optimize the **parcel** process. By analyzing current traffic patterns and schedules, the system **was able to** dynamically adjust shuttle routes and schedules to minimize delays and maximize efficiency.

Item 2

In addition, the service could offer different conveniences and amenities for different types of commuters, such as Wi-Fi or snacks.

Item 3

Finally, the service could partner with local businesses or institutions to offer **unique transportation** routes for their employees or members, providing a convenient and cost-effective transportation option **and** reducing traffic congestion and emissions.