

## Booster Ride Sharing with Neighbour's

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**Abstract**— Car sharing is expected to significantly help in reducing traffic and pollution in cities by enabling drivers to share their cars with users with similar itineraries and time schedules. A number of car sharing matching services have been designed in order to efficiently find successful ride matches in a given pool of drivers and passengers. Car sharing is a collective transportation model based on shared use of private cars. The objective of car sharing is to reduce the number of cars in use by grouping people. By exploiting car sharing model, it can significantly reduce congestion, fuel consumption, air pollution, parking demands and commuting costs. In system if driver accept that ride and next nearest passenger request for ride but his route is different than current route then that ride also suggest to driver to boost the income. System can reduce the time to find clients and allow an automated way to pay taxi costs. We, thus propose Haversine and C4.5 algorithm to search nearest neighbors' and search alternative path by analyzing the mobility dataset of the passengers. Propose system is not only beneficial to individual participants but also has significant social benefits. By sharing vehicles, we could reduce congestion, fuel consumption, Pollution, save parking space and also save money.

**Key words:** Itineraries, Car Sharing, Mobility

### I. INTRODUCTION

The city brings together high-density population and socio-economic activities and is an incredibly complex and dynamic system. Residents' activities in different places of the city and their movement constitute a complex urban activity system. Resident movement, in fact, is derived from the activities in people's life, reflecting the inhabitants' characteristic.

Based on the individual behaviour, resident behavior analysis traces the travel of the resident in chronological order, and then analyzes the micro-mechanism of traffic travel and studies people's travel behavior characteristics. Travel demand comes from activity needs. Humans face constraints of conditions such as time and space, family and life cycle. By studying people's travel needs, we can have a more in-depth understanding of their activities. In recent years, advanced technology has been developed to improve the overall efficiency of the taxi's system.

In the traditional taxi model, passengers always call a cab in the street, which is of relatively low efficiency, especially during the peak hours or rainy days when people has to wait for an available taxi passing by for more than half an hour. At the same time, it's arduous for a driver to find passengers nearby when driving. Propose system design to solve these problems. Propose system is design for driver as well as passenger where passenger request for ride. If driver accept that ride and next nearest passenger request for ride but his route is different than current route then that ride also suggest to driver to boost the income.

Propose system can reduce the time to find clients and allow an automated way to pay taxi costs. Propose system is not only beneficial to individual participants but also has

significant social benefits. By sharing vehicles, we could reduce congestion, fuel consumption, Pollution, save parking space and also save money

### II. PROBLEM STATEMENT

#### A. Problem Statement:

To design system that can boost ride by suggesting alternative route, search nearest neighbors and user recommendations.

#### B. Motivation of the project

If cab driver accepts shared ride then system suggest shortest path for ride and cab driver get suggestion of users request which comes into route. This could be cause to lose passengers from another area but which is near to cab driver. To overcome these problems propose system could be helpful.

#### C. Goals & objectives

- Goal of propose system is, user can book affordable ride from any time or anywhere.
- Increase the income of cab driver by suggesting more passenger requests nearby him.
- Provide instant ride to user and get more shared persons to reduce cost.
- Provide more and more passenger request to driver.
- The objective of car sharing is to reduce the number of cars in use by grouping people.

### III. RELATED WORK

Vinicius Monteiro de Lira, Raffaele Perego, Chiara Renzo, Salvatore Rinzivillo, and Valeria Cesario Times ([1]) In this ABRM(Activity based rid matching algorithm)is used to match the rides .It benefited more than the traditional ride matching algorithm.In this alternative path is searched to go at a destination to save the time when the previous path is with a traffic jam.It is designed to reduce the circulating vehicles and reduce the traffic pollution benefit user.

Vinicius Monteiro de Lira, Valeria Cesario Times, Chiara Renzo, Salvatore Rinzivillo ([2])Carpolling is mainly for reducing traffic and noise pollution.This paper mainly focus on the customer specific activity instead focus on path or where does it matched destination.Most systems are route based but in this paper sharing is increased by if the reaches the different location maintaining the activity. Algorithm used is spatiotemporal relocation matching.

Mattia Giovanni Campana, Franca Delmastro and Raffaele Bruno([3]) In this paper carpooling is done to reduce traffic.In this a dynamic way gotogether carpooling is usedIn previous carpooling systems orderd top ride request are shown which may be one of the invaluable preference according to user.In this paper, machine learned ranking is used to ride for specific request of user.It is for increase success rate of the offered ride matches.

Riccardo Guidotti, Andrea Sassi, Michele Berlingiero and Alessandra Pascale([4])In this paper the data driven methodology is used to carpooling the rides. Matching

is done on the basis of users interest or dissimilar interest They used a methodology to compute enjoybility from the user dataset and learned how this can be used for real world dataset to optimize both mobility and enjoyability. Greedy approach is use for optimal ride matching.

Jane Lin, Sandeep Sasidharan, Shuo Ma, Ouri Wolfson([5]) In this paper system is mainly for the passengers on airport, railway stations where there are hub of passengers at a time and they have to wait for more than 45 minutes for taxi. They proposed RSUP (Ride Sharing By Virtual Pool) In this system pairwise sharability is use to determine whether or not trip pair (A,B) is sharable with A. They tried to remove congestion in hubs. It combines 3 mechanisms, virtual queue, slugging i.e. walking for the purpose of ride sharing and multiple-drop off ride-sharing.

Manel Sghaier, Hayfa Zgaya, Slim Hammadi and Christian Tahon([6]) In this paper Dijkstra algorithm is used in order to take into consideration different aspects while optimizing solution Focused on real time carpooling system. They introduced DARTiC-a distributed Dijkstra for implementation of a real time carpooling system based on multiagent concept, they mainly focus on the distributed and dynamic aspect within Dijkstra implementation. It helped to performed decentralized parallel process. They applied innovative way to tackal the problem of handle real time users request. Their approach provide carpooling members (Users, cars) communication support so that they can instantly interact.

#### IV. PROPOSE SYSTEM

In propose system passenger can request for shared ride. Passenger pay ride bill as per the prize. If passenger select shared ride then it will displayed to the nearest driver if driver accept that request then ride will be started and new nearest passenger which are on other path also suggest to the driver. Propose system focuses on three main modules; in first one, whenever new shared ride get started it will inform to those users who were traveled before from that location. In second one nearest user will get know share ride is started for ABC location to XYZ location. In third one, if two parallel paths are available for driver to reach any destination then system will suggest that path which can provide maximum passenger to driver.

#### V. METHODOLOGIES USED

##### A. SVM:

When driver accept second person shared ride request then system search new path. SVM is used to find that alternate path. Users request from different areas. As per users requests system need to provide route to drivers. This is done to increase profit of cab driver. System finds areas of maximum frequency of user request.

##### B. Apriori:

System inform user if any shared ride is started from where user already travel previously. Apriori is used to send notification from user history.

#### VI. SYSTEM ARCHITECTURE:

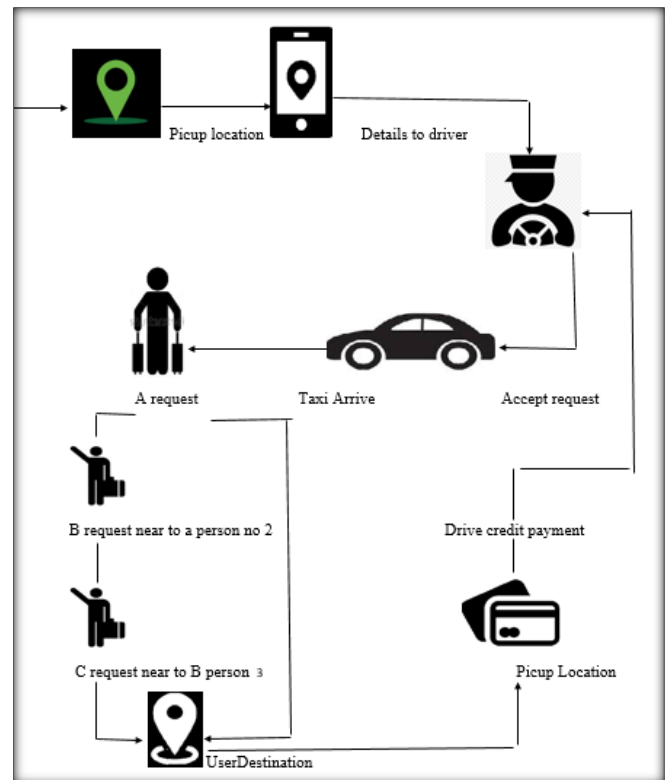


Fig. 1: System Architecture

#### VII. OUTCOME

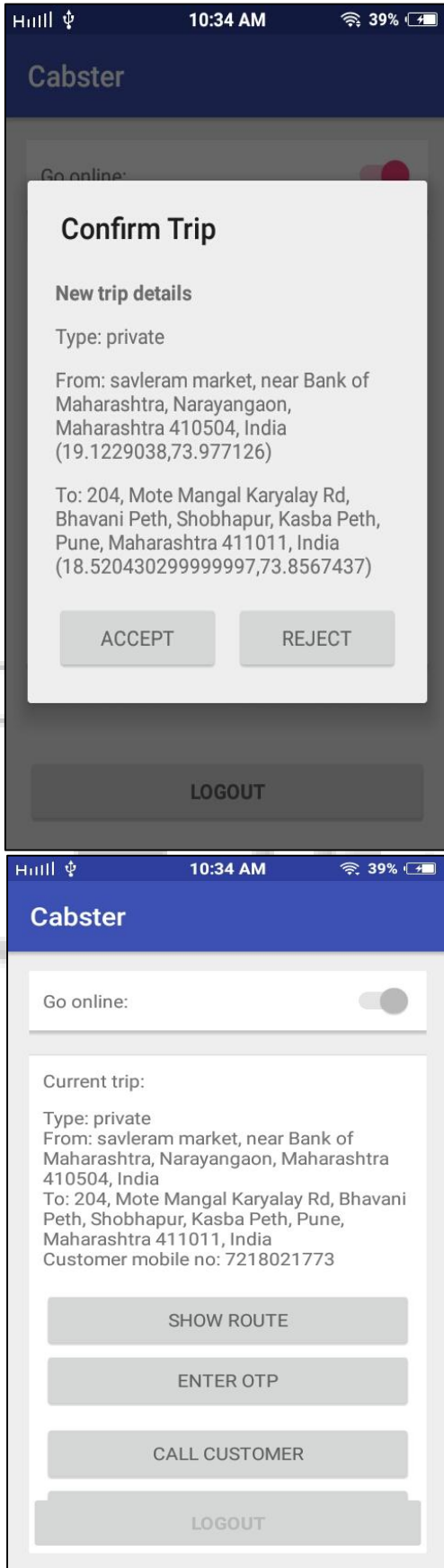
- User can book car from his/her mobile application at anytime and anywhere.
- User can book private or shared car.
- Cab driver could have more on shared ride.

#### VIII. RESULT

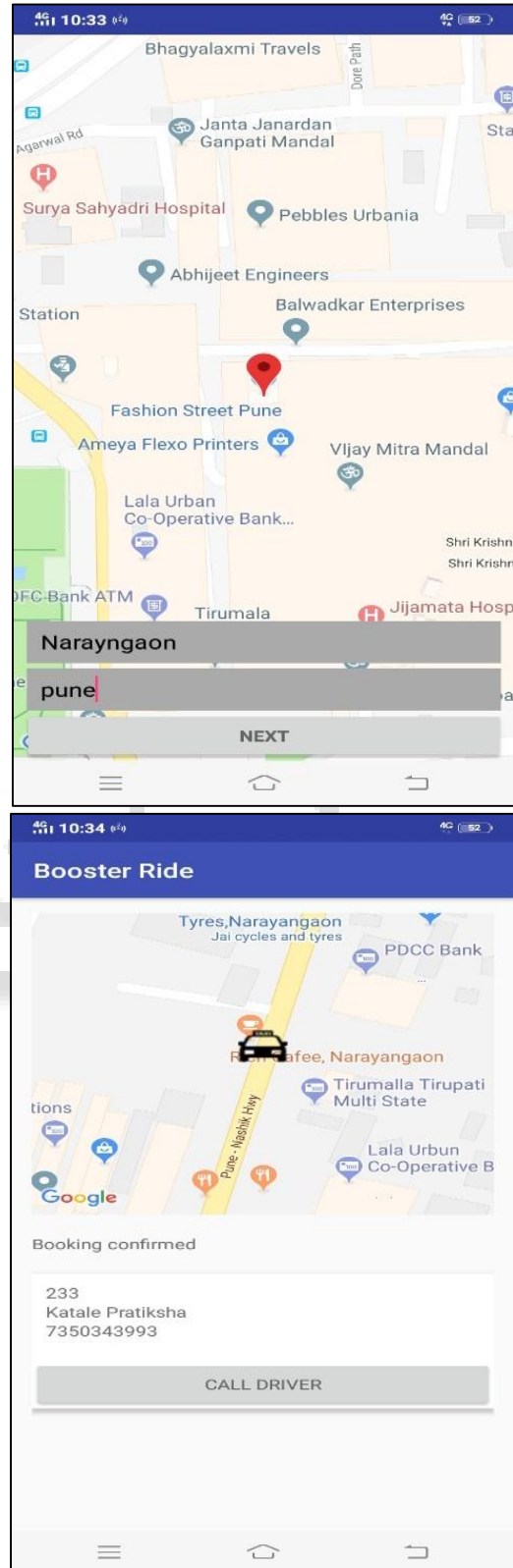
- 1) User books the ride and the nearest driver gets the request of that user.
- 2) Driver can see the alternative path to destination.
- 3) User can get recommendation of other user.
- 4) User pays bill as per shared ride price

By using this system application the company can get profit of more than 20% as company gets more passengers. And also benefit to user more than 50% as bill is distributed among the user's.

A. Driver Application:



B. User Application:



IX. CONCLUSIONS

Sharing ride is an effective way to reduce air pollution, parking problems, fuel consumption and commuting costs based on shared use of transportation cars or vehicles. In propose system we try to solve car sharing problem and

develop a prototype of car sharing system to realize car sharing based on smart phone platform and Google Map API.

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