



BIKE POOLING

Rachana Vargane, Snehal Patil, Vaishnavi Savakhande, Kajal Hodkar, S.Y. Divekar

Electrical and Computer Engineering, Stony Brook University

Abstract : Bike pooling, is that the sharing of Bike journeys in order that over one person travels on a Bike .Bike pooling reduces every persons travels prices like fuel prices, and also the stress of driving. Bike pooling is additionally seen as a additional environ-mentally friendly and property thanks to travel as sharing journeys reduces carbon emissions, tie up on the roads. Authorities typically encourage Bike pooling, particularly throughout high pollution periods and high fuel costs. we have a tendency to bent creating associate degree automaton based mostly application that may alter to let individuals recognize if bikes are obtainable for bike pool in their desired path they will register for it. this may alter individuals exploitation this application to share expense. we are going to link aadhar card to the appliance for obtaining users true identity. individuals having this application on their telephone will simply bike pool with unac-quainted individuals without fear regarding security.

Keywords: Bike Sharing System, Multi-modal Journey.

INTRODUCTION: The purpose of the computer code style Document is to produce an outline of the de-sign of a system absolutely enough to permit for computer code development to proceed with associate understanding of what's to be designed and the way it's expected to designed. The computer code De-sign Document provides data necessary to produce description of the main points for the computer code and system to be designed. The system for Bike Pooling mistreatment humanoid Application. initial the user can register through associate humanoid device, enter his/her details to the appliance, and enter the placement wherever he/she needs to succeed in. Then booking of bikes is finished user accepts the request. once registration and booking, current location of user and shopper are displayed and additionally the trail for traveling showing shortest route are displayed mistreatment GPS navigation and integrated Google maps. The user can picked up from current location and born to the specified destination safely with minimum value

Existing system:

Existing system offer either bike sharing or car sharing.

Disadvantages of existing system:

There is absence of system that offer single person ride as well as multiple person ride

Propose system:

First the user can register through associate degree golem device, enter his/her details to the appliance, and enter the placement wherever he/she desires to succeed in.

Then booking of car is completed user accepts the request. when registration and booking, current location of user and shopper are displayed and additionally the trail for traveling showing shortest route are displayed exploitation GPS navigation and integrated Google maps.

The user can picked up from current location and born to the specified destination safely with minimum value.

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Advantages of Propose system:

- 1.Help to reduce parking problem
- 2.Help to reduce traffic congestion
- 3.Help to reduce carbon emission.
- 4.User can request to bike .

Literature survey:

Project Name Bikeshare Pool Sizing for Bike-and-Ride Multimodal Transit

Author: Guoming Tang , *Member, IEEE*, Srinivasan Keshav, *Senior Member, IEEE*,
Lukasz Golab, *Member, IEEE*, and Kui Wu, *Senior Member, IEEE*

Project explanation: In shared motorcycle-and-trip transit systems, commuters use shared bicycles for remaining-mile delivery among transit stations and domestic, and between transit stations and work locations. This calls for pools of bicycles to be placed near every transit prevent wherein commuters can drop off and pick out up shared bikes. We take a look at the highest quality sizing of such bicycle pools. whilst numerous issues associated with automobile pool sizing had been studied before, to the fine of our understanding that is the primary paper that considers a multimodal transportation machine with a often scheduled public transportation backbone and shared bicycles for the first and closing mile. We gift answers that assure bicycle availability with high opportunity, and we empirically affirm their effectiveness the usage of Monte Carlo simulations. as compared to a baseline answer, our techniques lessen the scale of the bikeshare pool at the public transit stationfrom 39% to seventy five% within the examined situations.

Project Name: Reliable and Low-cost Cyclist Collision Warning System for Safer Commute on Urban Roads

Author: Jessica Van Brummelen, Bara Emran, Kurt Yesilcimen, and Homayoun Najjaran

Project explanation: Collision warning and avoidance is a well-established area of research for the automotive industry. However, there is little research towards vitally important collision warning systems for cyclists, who are increasingly jeopardized by motorists on urban roads, especially as quiet, fast electric vehicles become more popular. This paper describes the hardware and software of a low-cost collision warning system for cyclists. Installed on the back of a bike seat, the system consists of a single-beam laser rangefinder and two ultrasonic sensors that detect oncoming vehicles from behind, two handlebar eccentric mass vibrators that provide left and right haptic feedback to the cyclist, and a taillight that warns oncoming vehicles. Executed by an Arduino microcontroller, its software consists of a fuzzy rulebased inference system (FIS), which computes the collision risk and generates appropriate warning signals in a similar way to how a cyclist would assess collision risk based on the distance, velocity and direction of an approaching vehicle. The device was prototyped and statistically evaluated by a survey taken from a pool of seven participants. The participants tested the system before and after receiving initial training. The experimental results demonstrate the efficacy of the proposed system inwarning cyclists in an intuitive manner, without distracting them.

Project Name: Secure Bike Sharing System for Multi-modal Journey

Author: Mohammad Shahriar Rahman, Shinsaku Kiyomoto

Project explanation: Bike sharing systems (BSSs) are getting popular in many cities of the world as an integrated part of multimodal journey due to its flexibility and eco-friendly nature. Future BSSs will have a pool of Internet of Things (IoT)- integrated smart bikes with computation and communication capabilities. Such systems will be able to provide the

service providers with real-time and non-real-time information about user demands, bikes and environments for improved quality of services. However, manipulation of logistics data (e.g. showing availability of bikes or parking where none may exist) and mobility operations (e.g. unauthorized tampering with service-related data) may disrupt the whole service. This paper proposes a framework for secure bike sharing service under multi-modal journey environment using symmetric key encryption and digital signature. Our proposal lets a service provider to collect information from stations and external service providers, and communicate with users in a secure way so that the user gets correct information and a quality service. The proposed framework has the potential to offer enhanced quality of service through security features compared to existing systems for multi-modal transport users.

Project Name: A prediction system for bike sharing using artificial immune system with regression trees

Author: Jheng-Long Wu, Pei-Chann Chang

Project explanation: In beyond years, AIS are powerful and beneficial algorithms to remedy class and best issues which includes intrusion detection, scheduling and parameters optimization. however, AIS has rarely been implemented in solving the prediction hassle. in this paper, we propose a singular version by using combining AIS with regression trees (RT) prediction system for a actual global utility, i.e., a motorbike sharing gadget (BSS). The cells in AIS are the primary constituent elements and we embed RT forecasting sub-fashions inside the AIS to form cells pool and use clone choice mechanism to generate cloned antibody. therefore, AIS-RT prediction device may be applied to resolve the prediction hassle. Experiments had been conducted for AIS-RT on bike sharing device. Experimental results display that the AIS prediction system can further enhance the overall performance of an followed forecasting model; and moreover outperform the performances of different ensemble methods.

Project Name: Rule-based price control for bike sharing systems

Author: Claudio Ruch, Joseph Warrington, Manfred Morari

Project explanation: The recent increase in quality of shared quality systems, during which users take a bicycle or automotive from a geographically-dispersed public pool so as to complete half of a journey, is due partially to improved technologies for following and asking client journeys. In several schemes, a customer can begin and finish a journey at completely different arrival stations and is beaked in step with a group fee structure. However, a given system typically becomes unbalanced thanks to spatiality of demand for such “one-way” services across the system and throughout the day, and also the ensuing value of using workers to spread the system’s vehicles is critical. This paper describes however dynamic client costs, variable geographically as a perform of the present and expected future state of the system, may be used as management signals to enhance service rates. Such signals may be communicated to customers exploitation existing ICT infrastructure. We show, exploitation associate degree agent-based model parameterized with historical information from London’s Barclays Cycle rent theme, that easy proportional control rules will improve service rates while not the requirement to resort to conventional bike distribution workers. additionally we have a tendency to analyze the performance obtained and discuss system style problems.

Project Name: Car Pooling based on Trajectories of Drivers and Requirements of Passengers

Author: Fu-Shiung Hsieh

Project explanation: The objective of car pooling is to reduce the number of cars in use by grouping people. By exploiting car pooling model, it can significantly reduce congestion, fuel consumption, air pollution, parking demands and commuting costs. This paper aims to develop a prototype car pooling system to match passengers and drivers based on their trajectories. We propose a heuristic method to solve the car pooling problem. In our approach, we collect the trajectory data of passengers and drivers first. We then propose a matching algorithm to assign passengers to drivers’ cars based on their trajectories. The car pooling system proposed in this study combines a matching algorithm that is

seamlessly integrated with Google Maps API, dynamic web pages and database system. We also conduct experiments to illustrate our proposed method.

Project Name: A Machine-Learned Ranking Algorithm for Dynamic and Personalised Car Pooling Services

Author: Mattia Giovanni Campana, Franca Delmastro and Raffaele Bruno

Project explanation: Car pooling is expected to significantly help in reducing traffic congestion and pollution in cities by enabling drivers to share their cars with travelers with similar itineraries and time schedules. A number of car pooling matching services have been designed in order to efficiently find successful ride matches in a given pool of drivers and potential passengers. However, it is now recognized that many non-monetary aspects and social considerations, besides simple mobility needs, may influence the individual willingness of sharing a ride, which are difficult to predict. To address this problem, in this study we propose GOTOGETHER, a recommender system for car pooling services that leverages on learning-to-rank techniques to automatically derive the personalized ranking model of each user watch history of choices (i.e., the type of accepted or rejected shared rides). Then, GOTOGETHER builds the list of recommended rides in order to maximize the success rate of the offered matches. To test the performance of our scheme we use real data from Foursquare sources in order to generate a dataset of possible mobility patterns and ride requests in a metropolitan area. The results show that the proposed solution quickly obtain an accurate prediction of the personalized user's choice model both in static and dynamic conditions.

Project Name: Smart Peer Car Pooling System

Author: Raza Hasan, Abdul Hadi Bhatti ,Mohammad Sohail Hayat ,Haftamu Menke Gebreyohannes Syed Imran Ali ,Abeer Javed Syed

Project explanation : Increase in college area population and thus resulting in insufficient transportation facilities. Staffs and students prefer to use their own vehicle to commute to college rather using an alternative method. This leads to problems like increase number of vehicles, traffic, parking problems, fuel combustion etc. To overcome this problem Smart Peer Car Pooling System can be used, in which people travelling from nearby source can share the ride to college. Smart Peer Car Pooling System (SPCPS) can be a solution for the given problems. It is an effective means of reducing traffic congestion, waiting time, wastage of resources and fuel consumption, improving social life, reducing the number of accidents and environmental pollution which in turn results in green environment, boosting the economy of the Sultanate of Oman, wellbeing and improving the quality of life of the people. Governments and institutions encourage carpooling to increase high-occupancy vehicle lanes rather than commuters. In this paper, a smart model for Smart Peer Carpooling System will be introduced which is both architecture and business model approaches tested to find solutions for the system based on sustainable mobility.

Project Name: A Car Pooling Model and Solution Method With Stochastic Vehicle Travel Times

Author: Shangyao Yan, Chun-Ying Chen, and Sheng-Chieh Chang

Project explanation: Carpooling is one method that can be easily instituted and can help resolve a variety of problems that continue to plague urban areas, ranging from energy demands and traffic congestion to environmental pollution. However, most carpooling organizations currently use a trial-and-error process, in accordance with the projected vehicle travel times, for carpooling, which is neither effective nor efficient. In other words, stochastic disturbances arising from variations in vehicle travel times in actual operations are neglected. In the worst case scenario, where vehicle travel times fluctuate wildly during operations, the planned schedule could be disturbed enough to lose its optimality. Therefore, we constructed a stochastic carpooling model that considers the influence of stochastic travel times. The model is formulated as an integer multiple commodity network flow problem. Since real problem sizes can be large, it could be difficult to find optimal

solutions within a reasonable period of time. Therefore, we develop a solution algorithm to solve the model. To test how well the model and the solution algorithm can be applied to the real world, we also developed a simulation-based evaluation method. To test the model and the solution algorithm, a case study is performed based upon data reported from a past study carried out in northern Taiwan. The results show that the model and solution algorithm are good and could be useful for carpooling practices

Project Name: A Distributed Algorithm Solving Multiobjective
Dynamic Car Pooling Problem

Author: Ta Anh Son^{1,3}, Le Thi Hoai An², Pham Dinh Taol, Djamel Khadraoui³

Project explanation: Car pooling problem (CPP) is a well known transport solution that consists in sharing a car between a driver and passengers sharing the same route, or part of it. The challenge is to minimize both the number of required cars and the additional cost in terms of time for the drivers. There are two resulting problems that are interdependent and NP-complete: assigning passengers to cars and finding the shortest path for the drivers so that the overall cost is minimized. In this paper, we consider a multiobjective dynamic car pooling problem, where both the cost and the total travel time of drivers are to be minimized. We based on labeling algorithms for solving the multiobjective shortest problem investigate a new algorithm to solve this problem. Preliminary numerical results in a real scenario are reported. They show that our proposed algorithm is efficient and promising to real time applications.

Conclusion:

It is real time project which is helpful for the public who facing travelling problems. At the completion of this project we come to know that this system is useful for students and employees for daily transportation and it provides safety and reduces travelling cost also.

Summary

Bike Pooling system is android application for people to travel safely or easily in less cost. The System has two login for user and biker. Bike pooling is android application for students and employees for daily transportation. User can provide Guardian Number also for safety purpose. Aadhar card link also added for getting users true identity.

FUTURE SCOPE:

1. People can easily share expenses and travel using bike pooling application to their destination location.
2. This application is also useful for maintaining green environment.

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