Root Mapping For Transporting Vehicle by Using Genetic Algorithm

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Abstract— There is a need to match the emission and estimations accuracy with the outputs of transport models. The overall an error rate in long-term traffic forecasts results from strategic transport models is likely to be significant. The Micro simulation models, whilst high-resolution in nature, they have similar measurement errors if they use the outputs of strategic models to obtain traffic demand predictions. At the micro level, this paper discusses the limitations of existing emissions estimation approaches. The Emission models for predicting emission pollutants other than are proposed. The genetic algorithm approach is adopted to select a predicting variables for the black box model. This approach is capable to solving combinatorial optimization problems. Overall, an emission prediction of results reveal that a proposed new models outperform conventional equations in terms of accuracy and robustness.

Key words: Root Mapping, Genetic Algorithm, Vehicle Transporting

I. Introduction

The demands for vehicle navigation systems, which assist individual drivers by calculating the most efficient driving route and providing the route information between two geographical points based on a graphical user interface, have drastically increased in recent years. However, the existing system also faced challenges for providing information that reflects a fluctuations of dynamic real-time traffic and road situations, since they function merely on static data is the distance between two points on a map. In this an attempt to deal with the limitation, the new technology was recently introduced which enables each navigation terminal to receive and incorporate real-time traffic information collected by a centralized data center, such as TPEG(Transport Protocol Experts Group) information embedded in DMB (Digital Multimedia Broadcasting) signals, and to use it to work out the optimal route. Nonetheless, this technology may be very costly to run the terms of the amount of time to spent on collecting and broadcasting traffic information, and the geographic scope of the information is also significantly restricted. Moreover, is possible to cause another type of traffic congestion because it is broadcasts identical routing information to all users, leading them to the so-called "optimal route". To overcome this limitations, is necessary to design the new form of car navigation system which can reflect the dynamic traffic data and calculate and provide the optimal route and other information on a real-time basis

II. Relative study

A. Operating cost, fuel consumption and emission models in asidra and a motion

The Estimation of operating cost and fuel consummation and pollutant emissions are evaluating Intersections and mid-block traffic condition Is useful for design, operations and planning Purposes in traffic management. This paper Describes the model of operating cost and fuel consumption and emissions in the a SIDRA intersection analysis and a MOTION trip / drive-cycle simulator software packages developed by Akcelik & Associates. aaSIDRA is intersection analysis package first released in 1984. The latest version of aaSIDRA 2.0 (Akcelik & Associates 2002). A MOTION for general traffic assessment purposes is a single-vehicle microscopic simulation package that uses a time-step simulation model. It has not been released yet. Ascidia use a four-mode elemental model to estimate fuel consumption and pollutant emissions. The operating cost is includes the direct vehicle operating cost (resource cost of fuel and additional running costs including tire, oil, repair and maintenance) and the time cost for persons in vehicles.

B. The Modeling of motor vehicle for fuel consumption and emissions using a power-based model

The performance of a power based fuel consumption , exhaust emissions model for spark ignition vehicles has been evaluated using a large Australian database derived from the testing a wide range of in-use cars on a chassis dynamometer. It is also applied to results of the on-road fuel consumption measurement using a "floating" car which is driven back and forth on hilly roadways in Sydney with a length of 8.6 km. The model found to predict the fuel consumption over the standard drive cycles and also for the floating car. The average of exhaust emissions also well predicted, but, as would be expected, vehicle-to-vehicle correlation is impossible due to well-known high variability of emissions between nominally identical vehicles.

C. Analysis and modelling of pollutant emissions from European cars regarding to the driving characteristics and test cycles

Driving cycles are important components of evaluation and design the vehicles. The determine the focus of vehicle manufacturers, are indirectly they affect by the environmental impact of vehicles since the vehicle control system is usually tuned the one or several driving cycles. Thus, the driving cycle are affects the design of vehicle since cost, fuel consumption, and emissions all are depend on the driving cycle used for design. The existing standard driving cycles cannot keep up with changing road infrastructure, the changing vehicle fleet composition, and growing the number of vehicles on the road, which do all cause changes the driver behaviour, the need to get new and representative driving cycles are increasing. A research question is to generate the new driving cycles so they are both representative and at the same time have certain equivalence properties, to make fair comparisons of performance results. Besides this generation, the another possibility to get more driving cycles to transform the existing ones into new, different, driving cycles.

III. PROPOSED SYSTEM

In this section new framework is proposed for root mapping.

A. *Finding Shortest Root*

B. *Accurate Result*

1) *Finding Shortest Root:*

In this root mapping they have many roots are available for two geographical points. This time we can find a shortest root. In this proposed system is easy to maintain the shortest root of the two geographical points. In this proposed system we can use the genetic algorithm.

Finding shortest root by using the genetic algorithm we can perform a many operations like Selection, Mutation, Crossover operations. The main use of genetic algorithm is finding the optimum solutions of the data.

2) *Accurate Result:*

In other navigations they have many duplications are available for finding the shortest path. This drawback overcomes the proposed system finding shortest root for better accurate result.

IV. PROPOSED ALGORITHM

A. *Genetic algorithm:*

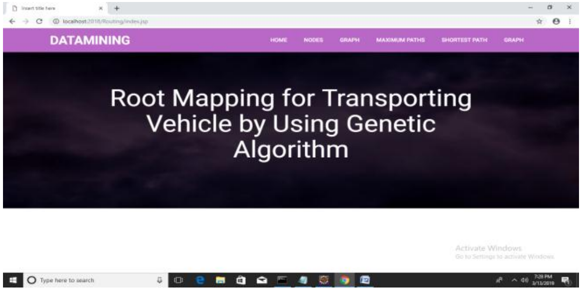
Genetic algorithms (GA) are a search heuristic method for those kinds of problems, suited when optimizations are not implementable or performance is a requirement. The solution found by GA is usually considered an adequate solution, being impossible to prove that it is an optimal solution. GA are search algorithms inspired by the mechanism of natural selection of Darwin. The basic concept of natural selection is that favorable heritable traits become more common in successive generations of a population, and the less favorable characteristics become less common. Darwin's argument is that individuals with favorable phenotypes are more likely to survive and reproduce than those with less favorable phenotypes, so the genomes associated with favorable phenotypes are in greater numbers in the next generation of a population. Over successive generations, individuals have produced a high degree of adaptation to an ecological niche because their favorable genes passed from their ancestors. Basically, what a GA does is to create an initial population of possible solutions to a problem and then the solutions of a population are used to create the new generation of solutions. This process is driven by the expectation that a population has better solutions than the previous generation. This expectation stems from the act of choosing the most appropriate solutions to produce the next generation of solutions.

In this we can take a set of population solution represented by chromosomes from one population are taken and that is used to create a new population and hope that the new generation is better than the existing previous one. This is repeated to until some condition (for example number of populations or improvement of the best solution) is satisfied. The main steps are

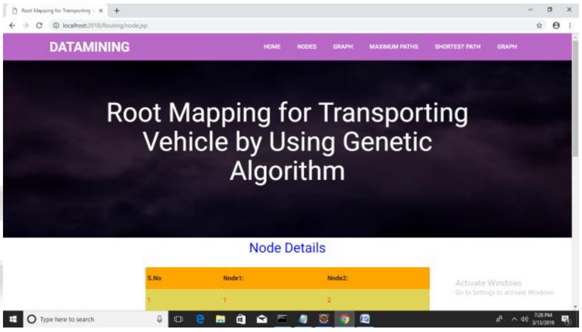
1) Started with a randomly generated population of n chromosomes
2) Calculate the fitness f(x) of each chromosomes x in the population.
3) Repeat the steps until n offspring have been created.
   a) Randomly selected a pair of parent chromosomes from the current population
   b) cross the pair at a randomly chosen point to form two offspring
   c) randomly mutate the two offspring and add resulting the chromosomes to the population
   d) calculate the fitness of the resulting chromosomes
4) Let the n finest chromosomes survive to next generation
5) Go to step 3

V. RESULT

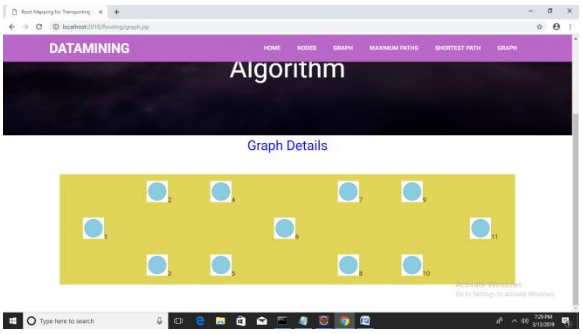
A. *Home Page:*



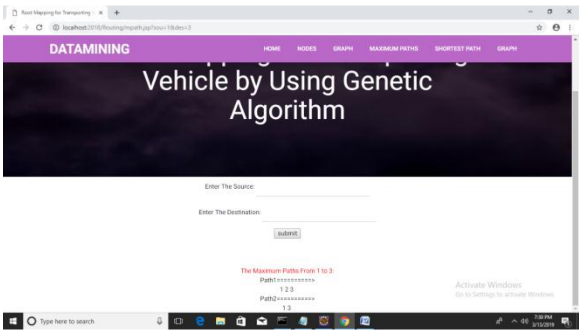
B. *Node details page:*



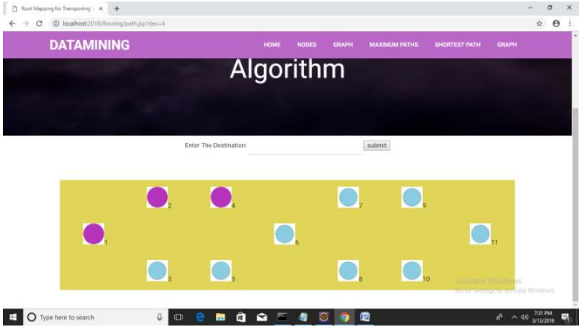
C. *Graph:*



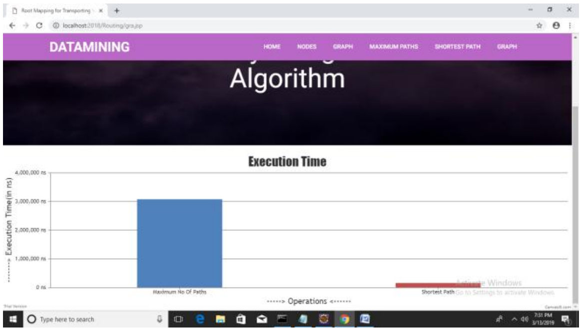
D. *Maximum path page:*



E. Shortest path:



F. Final graph:



VI. CONCLUSION AND FUTURE SCOPE

Past research on modeling vehicle emissions other than reveals relatively weak predicting results. The current paper is proposes the GA based methodology to determine the contributing variables for predicting vehicle emissions. This method is provides a new approach to selection of a combination of variables among a large potential set. The applications of the new models show enhanced results for modeling vehicle emissions, supporting the new variable selection methodology using GA. The modified fitness function of the proposed GA demonstrates the ability of establish a balanced multivariate model. In addition, the improved HC prediction of results, obtained by introducing the "historical" emission rates, support the time-lag effect hypothesis. The proposed GA methodology provides a solution for a combinatorial optimization problem, providing high modeling accuracy with statistically significant relationships between the selected predicting variables and the dependant variable.

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