
Fall 2007 Seminars

Thursday, Sept 13, 2007

2pm – 3pm

Room 513 Weil Hall

Presenter1: Yingyan Lou

Topic: Optimal dynamic pricing strategies for high-occupancy/toll lanes.

Abstract:

This paper proposes a reactive self-learning approach to determine pricing strategies for operating high-occupancy/toll lanes. The approach learns motorists' willingness to pay recursively by mining the loop detector data, and specifies toll rates to maximize the freeway's throughput while ensuring a superior free-flow travel service to the users of the toll lanes. In determination of the tolls, a multi-lane hybrid traffic flow model is used to explicitly consider the impacts of the lane-changing behaviors before the entry points of the toll lanes. Simulation experiments are conducted to demonstrate and validate the proposed approach.

Presenter 2: Vipul Modi

Topic: Traffic Impact Analysis using GPS/GIS

Abstract:

Understanding the demands placed on the community's transportation network by development is an important dimension of assessing the overall impacts of development. All development generates traffic, and it may generate enough traffic to create congestion. As one roadway becomes congested, traffic impact analyses are becoming more common as a planning tool to fore-see demands on the transportation network and to mitigate any negative impacts. The study area thus taken for this is IIT Bombay Campus and the traffic impact analysis is done using the tools GPS and GIS for the upcoming buildings in campus by 2007 and 2010. The analysis is done step by step which includes the collection of data on roadside and a home-based survey in order to have a clear picture of the movements currently and the movements in the future. A methodology is being prepared in this report which is used in order to accomplish the desired results for the traffic impact analysis of IIT Bombay Campus.

Presenter 3: Karun Yatindra

Topic: Vehicle allocation decisions and its transportation impacts

Abstract:

This paper investigates allocation of vehicles to household members and looks into the interaction of these members which allows them to make their choice to choose an available vehicle with respect to activity, need, purpose. This paper is being analyzed using the data from the rich activity travel diary from the San Francisco Bay Area.

Thursday, September 27, 2007

2pm – 3pm

Room 513 Weil Hall

Presenter 1: Abishek Komma

Topic: Modeling home-to-work commute-timing decisions of workers with flexible work schedules

Abstract:

This paper contributes to the literature by developing a continuous-time model for the home-to-work commute timing decisions of flexible full-time workers using the hazard duration structure. Further, the estimated departure time choice model includes the effect of travel time at a fine temporal resolution of 15 minutes. In order to generate the travel time data at this resolution, a second set of regression models are developed. The models were estimated using data from the 2000 San Francisco Bay Area Travel Survey. The regression models for inter-zonal travel times produce smoothly time-varying travel duration profiles that capture the effects of temporal and spatial congestion appropriately. The hazard duration model indicates a statistically significant effect of travel duration on the choice of departure time. Specifically, individuals are less likely to depart home at times when the travel duration is higher. In addition, the model also captures the impact of several other explanatory factors on the choice of departure time to work.

Presenter 2: Mayank P Jain

Topic: Capacity analysis of work zones on arterials

Abstract:

Numerous states have policies that provide guidance for the institution of short term lane closures on arterial streets based on capacity estimates, however it is not clear how the existing values were developed, and there are currently no tools to estimate the capacity of arterial lane closures. This estimation is important because capacity is used to forecast queues and delays. In this research simulation was used to develop several intersection and work zone configurations, and obtain relationships between various factors and the capacity of the arterial work zone.