

Research at BU – Civil Engineering



Research in Transportation Engineering



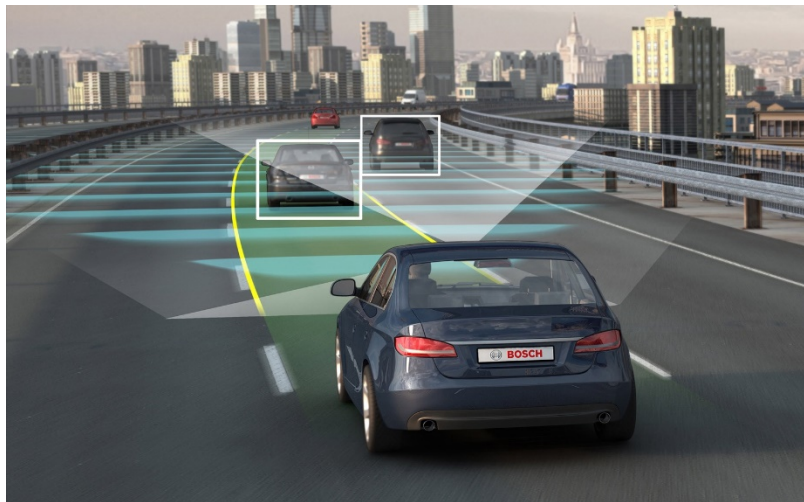
Transportation Engineering

- Intelligent Transportation Systems (Incident Management and Traffic Safety, Work Zone Traffic Management, Advanced Public Transportation Systems, Ramp Metering)
- Real-Time Traffic Control, Traffic Flow Modeling and Simulation
- Smart and Sustainable Transportation Systems
- The Use of Big Data to Address Challenges in Mobility, Safety, Sustainability and Resilience in Multimodal Transportation Systems
- Travel Behavior



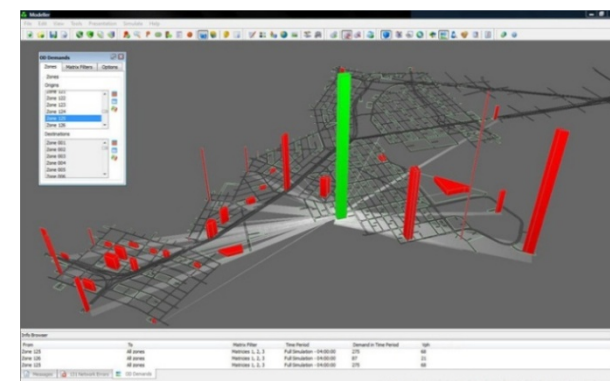
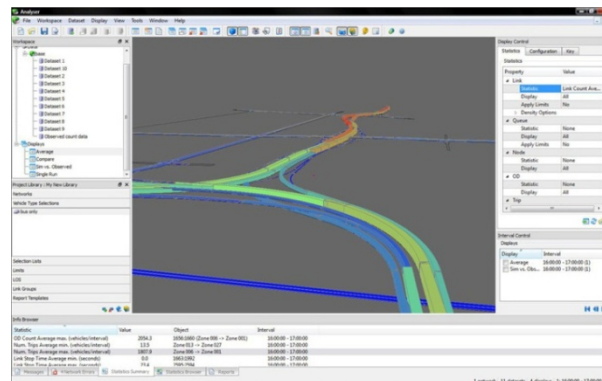
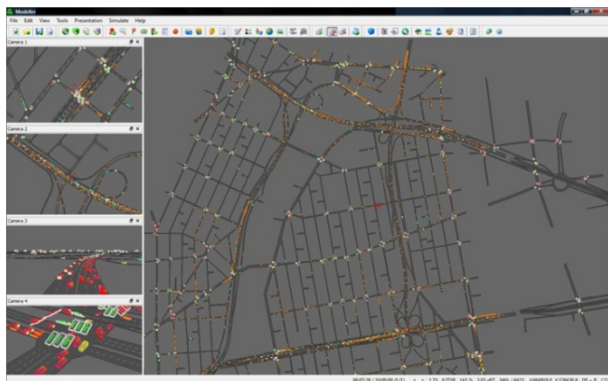
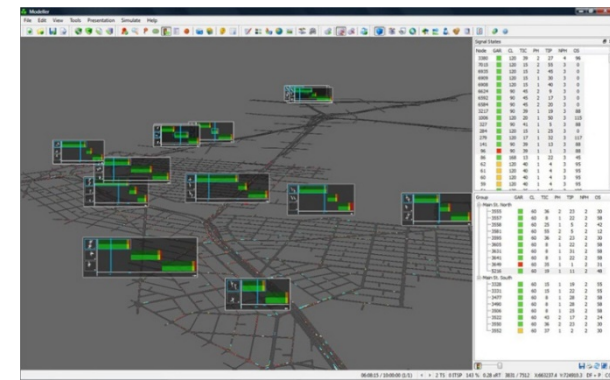
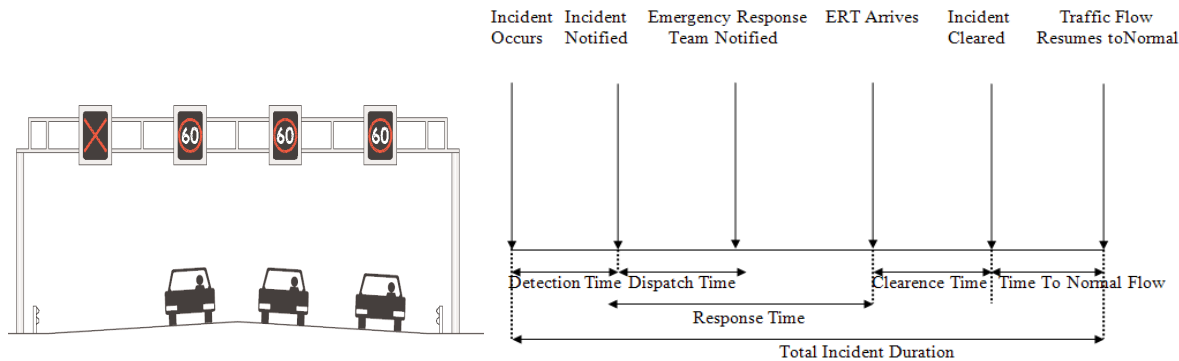
Smart Cities, Intelligent Transportation Systems & Traffic Simulation

- Evaluation of the impact of **autonomous and connected vehicles** through data analysis, simulation and data analysis software.
- Using diverse **deep learning** and optimization algorithms for the efficiency of the autonomous public transportation systems.
- The evaluation of the conversion of public transportation vehicles into autonomous vehicles, and further improvements in terms of safety and accessibility.



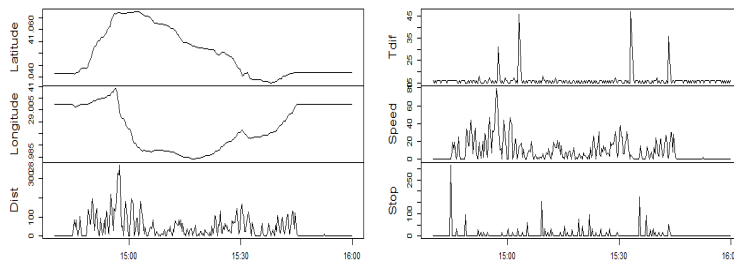
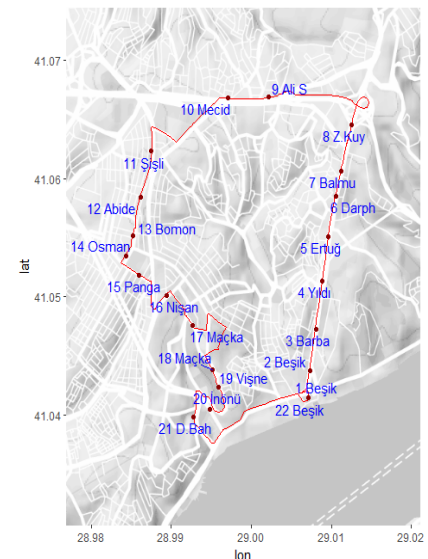
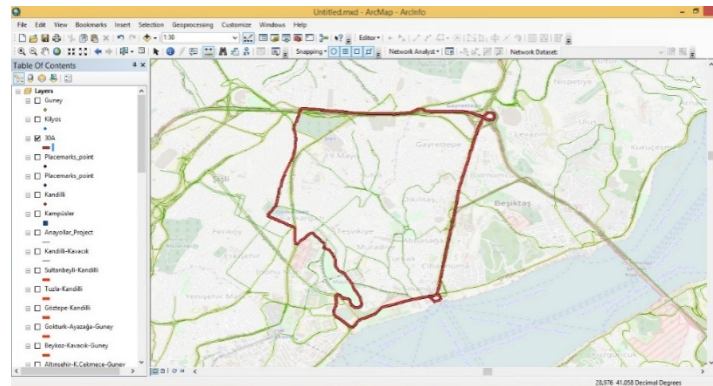
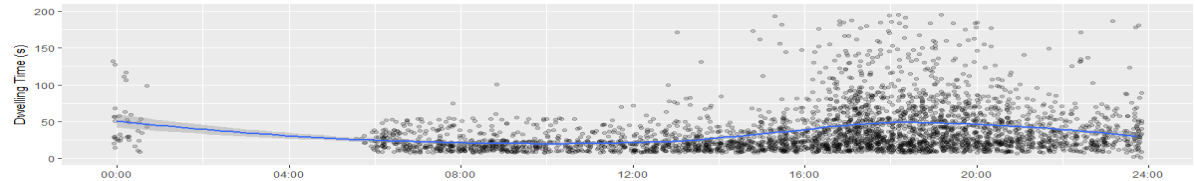
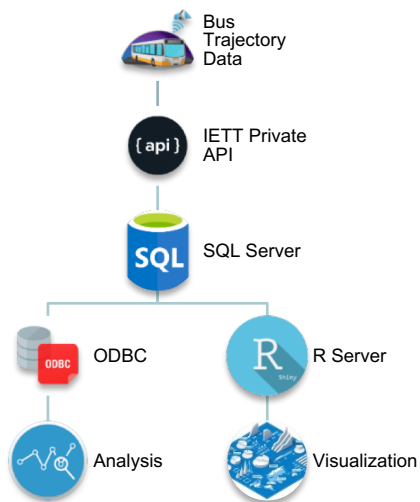
Smart Cities, Intelligent Transportation Systems & Traffic Simulation

- Traffic engineering, **traffic micro-simulation** and **traffic data analysis** for the application of Intelligent Transportation Systems.
- Ramp Metering, Incident Management, Advanced Public Transportation Systems, Advanced Traffic Management Systems, and Advanced Traveler Information Systems.



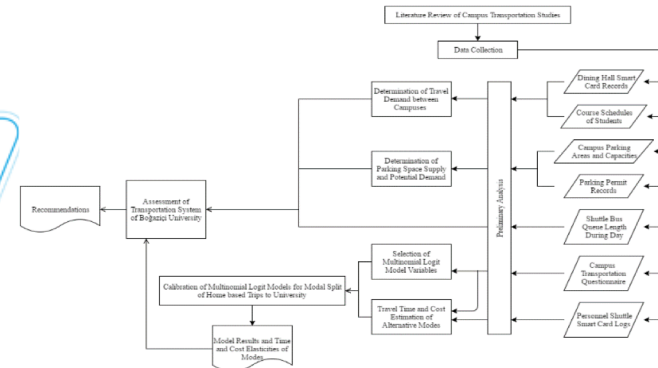
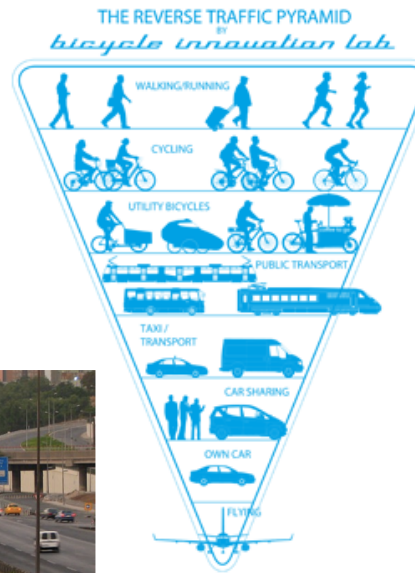
Smart Cities, Intelligent Transportation Systems & Traffic Simulation

- Data mining, map matching, data aggregation, traffic data analysis.
- Analysis of trajectory data of transport fleets which have been augmented with automated vehicle location systems using GPS to collect probe data and to support Real-Time Information systems.

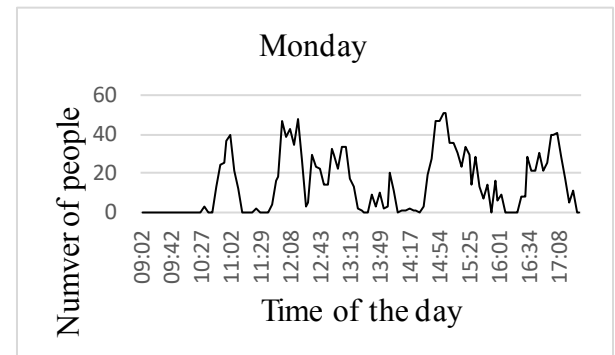


Sustainable Transportation Planning

- Applications of transportation demand management strategies in sustainable transportation planning, and carpooling, carsharing, ridesharing topics.
- Monitoring and data collection applications (RFID based vehicle identification) in universities, travel behavior differences between students, administrative staff and faculty, and transportation demand management strategies suitable for university communities.

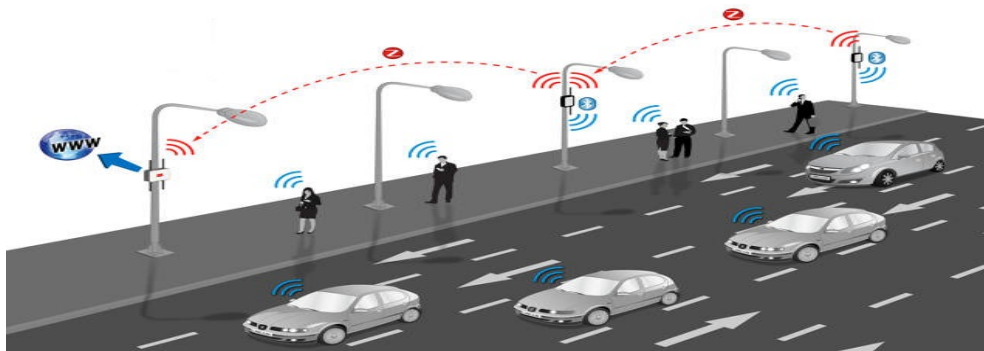
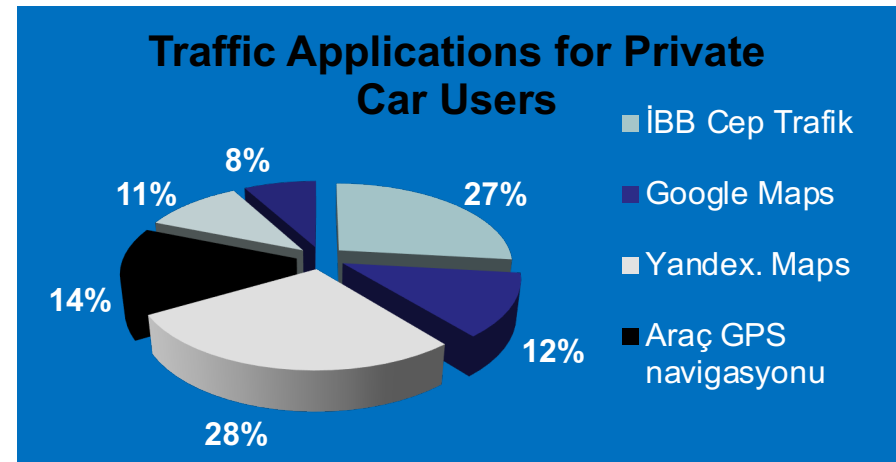


Shuttle Demand and Shuttle Stop Queue Length



Travel Behavior

- Drivers' route choice behavior under the real-time traffic information and the effect of real-time travel information on activity-based models.
- **Modelling travelers' decision making** patterns on freeways as a result of the provision of various types of real-time traffic information acquired by traffic applications.
- **Airport ground access and egress modeling.**



Thank you

