Abhilasha Saroj

Mobile: 404 528 4723 Email: asaroj3@gatech.edu

EDUCATION

Georgia Institute of Technology, Atlanta, GA 2016 – Present
Ph.D. Candidate, Civil Engineering (Transportation Engineering), GPA: 3.87/4

Georgia Institute of Technology, Atlanta, GA 2014 – 16
M.S., Civil Engineering (Transportation Engineering), GPA: 4/4

Indian Institute of Technology Bombay, Mumbai, India 2008 – 12
B.Tech., Civil Engineering, GPA: 7.5/10.0

PEER-REVIEWED CONFERENCE PROCEEDINGS

- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. Operational Evaluation of Don't Block the Box Campaigns. Transportation Research Board, Washington, DC, 2019.
- Saroj, A., S. Roy, R. Fujimoto., A. Guin, & M. Hunter. Smart City Real-Time Data-Driven Simulation. Winter Simulation Conference, Gothenburg, Sweden, 2018.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. Video Tool for Manually Extracting Complex Traffic Data. Transportation Research Board, Washington, DC, 2018.
- Saroj, A., Harris, S., A. Guin, M. Rodgers, & M. Hunter. Analysis of Vehicle Blocking Behavior on Intersection Performance. Transportation Research Board, Washington, DC, 2017.

CONFERENCE TALKS

- Saroj, A., S. Roy, R. Fujimoto., A. Guin, & M. Hunter. (2018, December). Smart City Real-Time Data-Driven Simulation. Talk delivered at Winter Simulation Conference, Gothenburg, Sweden.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. (2018, January) Video Tool for Manually Extracting Complex Traffic Data. Talk delivered by co-author at Transportation Research Board Annual Meeting, Washington, DC.

PEER-REVIEWED POSTER PRESENTATIONS

- Saroj, A., S. Roy, R. Fujimoto., A. Guin, & M. Hunter. (2019, September). Smart City Connected Digital Twin. Poster presented at GDOT/GTRI Research Expo. Atlanta, GA.
- Roy, S., A. Saroj, A. Guin, & M. Hunter. (2019, September). Connected Infrastructure Data Loss Patterns. Poster presented at GDOT/GTRI Research Expo. Atlanta, GA.
- Saroj, A., S. Roy, R. Fujimoto., R. Guensler, A. Guin, & M. Hunter. (2019, July). Smart City Digital Twin – Connected Data-Driven Traffic Simulation Model. Poster presented at Automated Vehicles Symposium. Orlando, FL.
- Roy, S., A. Saroj, A. Guin, & M. Hunter. (2019, July). Investigation of Data Loss Patterns in Real-Time Connected Transportation Infrastructure Data. Poster presented at Automated Vehicles Symposium. Orlando, FL.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. Operational Evaluation of Don't Block the Box Campaigns (2019, January). Poster presented at Southeastern Transportation Research, Innovation, Development, & Education Center Student Poster Competition. Washington, DC.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. Operational Evaluation of Don't Block the Box Campaigns (2019, January). Poster presented at Transportation Research Board Annual Meeting. Washington, DC.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. (2018, October). Smart Corridor Real-Time Dynamic Simulation. Poster presented at 2018 University Transportation Center Conference for the Southeastern Region, Clemson. SC.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. (2018, October). Operational Evaluation of DBTB Campaigns in Georgia. Poster presented at 2018 University Transportation Center Conference for the Southeastern Region. Clemson, SC.
- Hunter, M., A. Guin, R. Guensler, R. Fujimoto, M. Rodgers, A. Saroj, S. Roy, J. Bolen, & A. Biswas. (2018, September 6). Smart Cities Atlanta – Real-Time Data-Driven Transportation Simulation. GDOT/GTRI Research Expo. Atlanta, GA.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, Harris, S., Maddox, C., M. O. Rodgers, & M. Hunter. (2018, September 6). Operational Evaluation of DBTB Campaigns in Georgia. GDOT/GTRI Research Expo. Atlanta, GA.
- Saroj, A., N. Choudhary, H. Kim, A. Guin, M. Rodgers, & M. Hunter. (2017, November). Analysis of Vehicle Blocking Behavior on Intersection Performance. Poster presented at 2017 University Transportation Center Conference for the Southeastern Region. Gainesville, FL.
- Saroj, A., A. Guin, Harris, S., Maddox, C., M. Rodgers, & M. Hunter. (2017, October 5). Operational Evaluation of DBTB Campaigns in Georgia. GDOT/GTRI Research Expo. Atlanta, GA.
- Saroj, A., Harris, S., A. Guin, M. Rodgers, & M. Hunter. (2017, January). Analysis of Vehicle Blocking Behavior on Intersection Performance. Poster presented at Transportation Research Board Annual Meeting. Washington, DC.
- Saroj, A., A. Guin, Harris, S., Maddox, C., M. Rodgers, & M. Hunter. (2016, September 13). Enhanced Role of Activity Center Transportation Organizations in Regional Mobility & Operational Evaluation of DBTB Campaigns in Georgia. GDOT/GTRI Research Expo. 2016. Atlanta, GA.

- Saroj, A., Harris, S., A. Guin, M. Rodgers, & M. Hunter. (2016, March). Sensitivity Analysis of Vehicle Blocking Behavior on Intersections. Poster presented at 2016 University Transportation Center Conference for the Southeastern Region. Knoxville, TN.
- Saroj, A., A. Guin, Harris, S., Maddox, C., M. Rodgers, & M. Hunter. (2015, September 22). Enhanced Role of Activity Center Transportation Organizations in Regional Mobility. Poster presented at GDOT/GTRI Research Expo. Atlanta, GA.

RESEARCH AND WORK EXPERIENCE

Graduate Research Assistant, Transportation Systems Engineering, Georgia Tech

Smart Cities Atlanta – Real-Time Data-Driven Simulation of "North Avenue Smart Corridor" Jan'18 – Present
Sponsored by City of Atlanta

- Research Objective – To leverage connected infrastructure technologies to get meaningful insights on traffic mobility and environmental impact measures - travel time, queue lengths, energy consumption and CO2 emissions.
- A traffic simulation model capable of dynamically injecting connected infrastructure data into traffic simulation software, performing simulation run, and visualizing the performance measures, at near-real-time rate is built.
- The model simulates fifteen intersections of the North Avenue Smart Corridor in Atlanta, Georgia.

Operational Evaluation of the "Don't Block the` Box" Campaigns Aug'14 – Dec'17
Sponsored by Georgia Department of Transportation

- Research Objective – To investigate the effectiveness of "Don't Block the Box" (DBTB) treatments in minimizing driver's blocking an intersection.
- Performance of DBTB treatments is evaluated by:
  - Conducting a "before-after" DBTB treatment comparison study at six intersections in Atlanta, Georgia,
  - Quantifying the impact of vehicle blocking behavior on intersection performance using a microscopic simulation model.
- Performed sensitivity analysis of vehicle blocking behavior to quantify the impact of vehicle blocking behavior in terms of intersection delay and loss of capacity on the developed Vissim probabilistic simulation model.
- Built a python-based software application Georgia Tech Multi Video Player, GT-MVP to aid video traffic data extraction to study vehicle's blocking behavior at intersections.
- Measured effectiveness of DBTB treatments by comparing estimates of propensity of a vehicle to block at field intersections before and after the DBTB treatments.

Research Assistant, Transportation Systems Engineering, IIT Bombay, Mumbai, India Sep'13 – May'14

- Worked on a methodology to measure street walkability index based on walking facilities, user perception survey and street connectivity
- Developed a VISSIM model to simulate the congestion impact of vehicle inflow from Bandra Worli Sea Link
- Conducted road safety audit of Pilot Bus Rapid Transit System Corridor at Pune, India

Analyst, Boston Analytics, Mumbai, India Jul'12 – Aug'13

- Developed a quantitative model of an expansion roadmap estimating the market size for motors and drives
- Created an analytical model to gauge relative prospects of waste management market of 14 EU countries

TEACHING EXPERIENCE

Teaching Assistant, Georgia Tech, CEE 4600: Transportation Planning and Design Fall 2016 – Spring 2018

- Conducted lab activity lectures to teach fundamentals of traffic engineering and roadway design
- Advised student groups on semester project of roadway design
- Graded home works, lab reports and semester project reports

AWARDS AND HONOURS

Recipient of National Center for Sustainable Transportation Dissertation Fund, 2019
2nd Place, Southeastern Transportation Research, Innovation, Development & Education Center Student Poster Competition, 2019, STRIDE
Winter Simulation Conference Foundation Travel Grant, 2018, WSC
Helen M. Overly Memorial Scholarship, 2018, WTS Atlanta
John D Edwards Memorial Scholarship, 2017, ITE Georgia Section
GAITE Scholarship Winner, 2016, ITE Georgia Section
Traffic Bowl Winner Team, 2015, ITE Georgia Section
BA's Best Employee Award, 2013, Boston Analytics; Project: "Power Conversion Market Assessment of India"
National Certificate of Merit, 2005, Central Board of Secondary Education; Central Board Secondary Exam
District Topper, 2002, Mumbai District Mathematics Teachers Association; Math Concept Examination

LEADERSHIP POSITIONS, COMMUNITY SERVICES, AND PROFESSIONAL AFFILIATIONS

Positions of Responsibility
Council Member, Graduate Student Advisory Council, CEE, Georgia Tech Aug '16 – Present
Friend to TRB committees: AHB45 (1), ABJ70, ABE70 Jan '19 – Present

Mentor, Stempower, Georgia Tech — Aug'18 – May'19
President, Institute of Transportation Engineers, Georgia Tech — Aug '17 – May'18
Vice President for Communications, Institute of Transportation Engineers, Georgia Tech — Aug '16 – May '17
Secretary, Institute of Transportation Engineers, Georgia Tech — Sep '15 – May '16
Social/Outreach Chair, American Society of Highway Engineers, Georgia Tech — Sep '15 – May '16
Publicity Manager, Annual Technical Festival of Department of Civil Engineering, IIT Bombay — Apr '10 – Mar '11
Other Affiliations: WTS - Atlanta, ITS - Georgia, TRB, and ASCE

Service to Community
TEAMBuzz Georgia Tech Volunteering Service (Spring & Fall 2017)
Teach for India - Tutored underprivileged students in Mumbai suburban school
Event Assistant, Woodruff Arts Center: Create ATL Family Fun Event

Extra-Curricular Activities, IIT Bombay
1st position, inter hostel general championship theme dance competition
Performed at professional theatres, India: Prithvi Theatre and National Centre for Performing Arts

COURSES TAKEN AT GEORGIA TECH

Urban Transportation Planning	Statistics in Transportation
Transportation, Energy and Air Quality	Traffic Engineering
Applied Policy Methods	PhD Research Methods
Activity-Travel Behavior Modeling and Simulation	Freight Planning and Analysis
Traffic Flow Theory	Data and Visual Analytics
Engineering Communications	Computational Problem Solving
Survey Design & Analysis	Advanced Data Analysis for Engineering
Computing for Data Analysis	Fundamentals of Teaching and Learning in Higher Education

SELECTED ACADEMIC PROJECTS

A Comparison of Supervised Learning Algorithms for Wine Quality Prediction — Jun'19 – Jul'19
- Performed unsupervised exploratory analysis on wine quality dataset.
- Compared performance of supervised machine learning algorithms such as Logistic Regression, Random Ensemble Classifier, Support Vector Machine, etc., to predict wine quality based on its' physio-chemical characteristics. Project available at this website

Interactive Interface for Assessment of American's Well-Being — Aug'16 – Nov'16
- Analyzed ATUS well-being dataset to better show the trends using D3 visualization and identified the significant factors affecting well-being of individuals in society using classification and regression modeling techniques. Visualizations presented on this website

Variation in Crash Data and Regression-to-The-Mean Bias — Jan'15 – Apr'15
- Demonstrated regression-to-the mean bias effect applying Empirical Bayes method for crash estimation in December 2014 at 10 intersections located in Brooklyn, NY using crash data for December (2011-2013)

Comparative Fuel Analysis for the 2030 Cobb County Bus Fleet: LNG and B100 Algae — Aug'14 – Nov'14
- Analyzed Cobb County School District Fleet (Atlanta) for 2015 and made projections for the year 2030, considering three fuel scenarios (LNG and Diesel; 100% LNG; and B100 & Diesel)
- Determined upstream emissions using Argonne national Laboratory's GREET life cycle model for each fuel scenario under study; Estimated annual on-road emissions using Fuel Emissions Calculator (FEC)