

Transportation Research Record: Journal of the Transportation Research Board

Volume 2678, Issue 1

ISBN: 978-1-7138-8728-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Published by Sage Publications USA

Copyright© (2024) by Transportation Research Board of the National Academies
All rights reserved.

ISBN (Print) 978-1-7138-8728-7

Printed with permission by Curran Associates, Inc. (2024)

For permission requests, please contact sagepub.com/journals-permissions

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Contents

Research Articles

Modeling Pedestrian Injury Severity: A Case Study of Using Extreme Gradient Boosting Vs Random Forest in Feature Selection <i>Zhenxi Wu, Aditi Misra, and Shan Bao</i>	1
People, Process, and Technology Maturity Levels for Successful Technology Implementation by State Departments of Transportation <i>Amit Tripathi, Hala Nassereddine, Roy E Sturgill, Gabriel B Dadi, Makram Bou Hatoum, and Ashtarout Ammar</i>	12
Quantifying the Coupling Relationship of Road Grade Impacting Heavy-Duty Diesel Truck Operation Emissions in a Mountainous City in China <i>Yonghong Liu, Huiyan Li, Wenfeng Huang, Xinru Yang, Li Li, Fanling Kong, and Hui Ding</i>	22
Barriers Associated with the First/Last Mile Trip and Solutions to Bridge the Gap: A Scoping Literature Review <i>Ruqaya Emad Alfaris, Deep Patel, Mohammad Jalayer, and Mahbubur Meenar</i>	38
Bidirectional Green Waves for Road Arterials: Optimization and Simulation <i>Christian Liebchen</i>	49
Collaborative Optimization of Company Commuter Bus Stop Selection and Route Programming Considering Stochastic Travel Time and Demand <i>Lei Guan and Wei Wang</i>	61
Evaluation of a Dynamic Lane Assignment on Urban Freeways by Using a Microscopic Traffic Flow Simulation <i>Yuya Hattori, Yasuhiro Shiomi, Masahiko Sano, and Hiroaki Matsunaga</i>	77
Evaluation of Low-Traffic Neighborhoods and Scale Effects: The Paris Case Study <i>Biao Yin, Azise Oumar Diallo, Tatiana Seregina, Nicolas Coulombel, and Liu Liu</i>	88
Evaluation of Rail Decarbonization Alternatives: Framework and Application <i>Adrian Hernandez, Max T. M. Ng, Nazib Siddique, Pablo L. Durango-Cohen, Amgad Elgowainy, Hani S. Mahmassani, Michael Wang, and Yan (Joann) Zhou</i>	102
Evidence for Modal Inertia in Multimodal Tours: An Integrated Choice and Latent Variable Modeling Approach <i>Parastoo Jabbari, Nazmul Arefin Khan, and Don MacKenzie</i>	122
Exploring Tree-Based Machine Learning Models to Estimate the Ultimate Pile Capacity From Cone Penetration Test Data <i>Mohammad Moontakim Shoaib and Murad Y. Abu-Farsakh</i>	136
Line-Specific Energy Modeling Framework for Urban Rail Transit Systems: A Case Study of Boston <i>Zhuo Han, Eric Gonzales, Eleni Christofa, and Jimi Oke</i>	150
Research on Congestion Mitigation of Coordinated Control for Connected Vehicles on Pick/Drop Stand Road <i>Yucong Hu, Xuelong Li, Qingyang Liu, and Huaqing Ma</i>	165
Resilience as a Service for Transportation Networks: Definition and Basic Concepts <i>Rihab Amghar, Sara Jaber, S. M. Hassan Mahdavi Moghaddam, Neila Bhouri, and Mostafa Ameli</i>	177

Role of Surface Roughness in Surface Energy Calculation of Aggregate Minerals <i>Yangming Gao, Xueyan Liu, Shisong Ren, Yuanyuan Li, and Yuqing Zhang</i>	190
Real-Time Framework to Predict Crash Likelihood and Cluster Crash Severity <i>Md Rakibul Islam, Mohamed Abdel-Aty, Zubayer Islam, and Amr Abdelraouf</i>	202
Examining Rail Transportation Route of Crude Oil in the United States Using Crowdsourced Social Media Data <i>Yuandong Liu, Majbah Uddin, Shih-Miao Chin, Ho-Ling Hwang, and Jiaoli Chen</i>	218
Flow-Inflated Selective Sampling for Efficient Agent-Based Dynamic Ride-Pooling Simulations <i>Nico Kuehnel, Hannes Rewald, Steffen Axer, Felix Zwick, and Rolf Findeisen</i>	229
Health Determinants, Applications, and Methods: A Systematic Literature Review on the Relationships Between the Urban Transport of People and Health <i>Júlia Barros dos Santos and Josiane Palma Lima</i>	245
How Time Inefficient and Uncertain are Paratransit Trips Compared to Car Trips <i>Cemal Akcicek, Aditi Misra, Manish Shirgaokar, and Wesley Marshall</i>	272
Laboratory Investigation into the Partial Replacement of Aggregates with Recycled High-Density Polyethylene in a Dense Graded Asphalt Mix <i>Shelby Banfield and Xiomara Sanchez</i>	286
Real-Time Multi-Vehicle Multi-Camera Tracking with Graph-Based Tracklet Features <i>Tuan T. Nguyen, Hoang H. Nguyen, Mina Sartipi, and Marco Fisichella</i>	296
Finite-Mixture Continuous Logit Model: Formulation and Application for Shopping Start Time Choice of Non-Commuters <i>Shuguang Geng, Xin Ye, Tianran Zhang, and Ke Wang</i>	309
Traffic Safety Pyramid Based on Visual Navigation Distraction: A Naturalistic Study on App-Taxis <i>Samira Zeydi, Mostafa Pouyakian, Korosh Kamali, and Shirazeh Arghami</i>	321
Understanding the Sensitivity of Mixture Cracking Performance Tests to Binder Properties and Long-Term Aging <i>Michael Elwardany, Varun Veginati, Adrian Andriescu, and David Mensching</i>	335
Comprehensive Investigation of Commercial Motor Vehicle Crashes at Signalized and Unsignalized Intersections in Kentucky <i>Kirolos Haleem and Mehdi Hosseinpour</i>	350
Laboratory Investigation of Draindown Behavior of Open-Graded Friction-Course Mixtures Containing Banana and Sugarcane Bagasse Natural Fibers <i>Ashish Sharma, Rajan Choudhary, and Ankush Kumar</i>	366
Using Indirect Tensile Cracking Test Data for Quality Control and Acceptance <i>Stacey D. Diefenderfer, Jhony Habbouche, and Ilker Boz</i>	381
Spatiotemporal Analysis of the Relationships Between Pricing Strategies and Willingness to Share for Ridesourcing Modes <i>Bishoy Kelleny and Sherif Ishak</i>	393
Analyzing the Relationships Between Frequency of Leisure Activity Participation and Social Capital <i>Trang Luong, Natalia Barbour, and Michael Maness</i>	410
Asphalt Concrete Mix Design Optimization Using Autoencoder Deep Neural Networks <i>José Rivera-Pérez and Imad L. Al-Qadi</i>	426

Competition in Ride-Hailing Service Operations: Impacts on Travel Distances and Service Performance <i>Maryia Hryhoryeva and Ludovic Leclercq</i>	439
Conflict-Based Real-Time Road Safety Analysis: Sensitivity to Data Collection Duration and its Implications for Model Resilience <i>Federico Orsini, Massimiliano Gastaldi, and Riccardo Rossi</i>	460
Environmental Benefits of Using New Last-Mile Solutions and Using Electric Vehicles in China <i>Liyang Song, Bin Wang, Qian Bian, and Lihua Shao</i>	473
Fleet Operator Perspectives on Heavy-duty Vehicle Alternative Fueling Infrastructure <i>Youngeun Bae, Craig Ross Rindt, Suman Kumar Mitra, and Stephen G. Ritchie</i>	490
Multi-Objective Optimization of Maintenance, Rehabilitation, and Reconstruction Decision Making Considering Safety <i>Muyang Lu, S. Ilgin Guler, and Vikash V. Gayah</i>	507
Refueling Station Location Model to Support Evacuation of Alternative Fuel Vehicles <i>Denissa Sari Darmawi Purba, Simon Balisi, and Eleftheria Kontou</i>	521
Upstream Logistics Optimization from Shanghai, China to Kasur, Pakistan: An Implementation of Mixed-Integer Linear Programming <i>Rizwan Shoukat and Zhang Xiaoqiang</i>	539
Joint Confidence Region Approach to Ranking Hotspot Locations Considering Uncertainty in Expected Risk Estimates <i>Reza Aminghafouri and Liping Fu</i>	555
Emerging Opportunities for Battery Swapping in the Electric Two-Wheeler Segment in India <i>Parveen Kumar and Anshika Singh</i>	568
Estimating Load Transfer Efficiency for Jointed Pavements from TSD Deflection Velocity Measurements <i>Martín Scavone, Samer W. Katicha, Gerardo W. Flintsch, and Eugene Amarh</i>	583
Evaluation of the Hawaii Modified Delaware Retrofit Thrie-Beam Bridge Railing and Approach Guardrail Transition <i>Mojdeh Asadollahi Pajouh, Karla A. Lechtenberg, Ronald K. Faller, Scott Rosenbaugh, and Robert W. Bielenberg</i>	595
Expressway Rear-End Conflict Pattern Classification and Modeling <i>Wanjing Ma, Yunting Miao, Ziliang He, Ling Wang, and Mohamed Abdel-Aty</i>	612
Perceptions of Bicycle Signal Faces and Associated Compliance: Results of an Online Survey <i>Carolina Baumanis, Jennifer Hall, Randy Machemehl, and Nathan Wilkes</i>	629
Safe, Efficient, and Comfortable Reinforcement-Learning-Based Car-Following for AVs with an Analytic Safety Guarantee and Dynamic Target Speed <i>Omar ElSamadisy, Tianyu Shi, Iliia Smirnov, and Baher Abdulhai</i>	643
Signal Phasing and Timing Prediction Using Connected Vehicle Data <i>Zubayer Islam, Mohamed Abdel-Aty, and Jorge Ugan</i>	662
Spatial Inequity of Transit and Automobile Access Gap across America for Underserved Population <i>Sanju Maharjan, Fatemeh Janatabadi, and Alireza Ermagun</i>	674
Transit Safety System Evaluation and Hotspot Identification Empowered by Edge Computing Transit Event Logging System <i>Ruimin Ke, Jerome M. Lutin, Yinhai Wang, Zhiyong Cui, Shuyi Yin, Yifan Zhuang, and Hao (Frank) Yang</i>	691

Comprehensive Energy Modeling Framework for Multi-Powertrain Bus Transit Systems <i>Mahsa Arabi and Jimi Oke</i>	707
Adjusting Train Timetables Based on Passenger Flow for Cross-Line Trains <i>Jiacheng Zheng, Fang Cao, and Xiaohui Li</i>	721
Analysis of Motorcycle Accident Injury Severity and Performance Comparison of Machine Learning Algorithms <i>Kenny Santos, Bernardo Firme, João P. Dias, and Conceição Amado</i>	736
Developing a Methodology to Identify Non-Normative Key Destinations for Transportation Planning <i>Julianna Horiuchi, Alissa Zimmer, Monisha Reginald, Anna Gartsman, Connor Brown, Drefnie Limprevil, and Carolyn De Jesus Martinez</i>	749
Feasibility of Battery Electric Pickup Trucks in a State Department of Transportation Fleet <i>Noah J. Goodall and Erin Robartes</i>	760
The Multimodal Accessibility Target (MAT) <i>Zachary Patterson, Aaron Bensmihen, and Gavin Hermanson</i>	770
New Approach to Determining the Roughness of Bicycle Roads <i>Mehmet Rizeliogğlu and Murat Yazıcı</i>	781
Modeling the Impacts of Low Emission Zone on Route Diversion and Emissions of Heavy-Duty Trucks: A Southern California Case Study <i>Kanok Boriboonsomsin, Shams Tanvir, and Matthew Barth</i>	794
Do Traffic Countermeasures Improve the Safety of Vulnerable Road Users at Signalized Intersections? A Combination of Case-Control and Cross-Sectional Studies Using Video-Based Traffic Conflicts <i>Qiangqiang Shangguan, Jessica Keung, Liping Fu, Lana Samara, Junhua Wang, and Ting Fu</i>	806
Laboratory Investigation of Open Graded Friction Courses with Different Binder Grades and Aggregate Gradations <i>Md Amanul Hasan, Rafiqul A. Tarefder, and Zafrul H. Khan</i>	820
Evaluation of Thermal and Rheological Properties of Phase Change Material-Incorporated Asphalt Mastic with Porous Fillers <i>Farshad Saberi Kerahroudi, Yizhuang David Wang, and Jenny Liu</i>	835
Construction and Live Load Behavior of a Skewed Steel I-Girder Bridge <i>Siang Zhou, Larry A. Fahnestock, James M. LaFave, and Ricardo Dorado</i>	846