2019 4th International Conference on Intelligent Transportation Engineering (ICITE 2019)

Singapore
5 – 7 September 2019
# Table of Contents

**Preface** ........................................................................................................................................... viii  
**Committees** ....................................................................................................................................... ix  

## Public Transportation

- **Ship Sliding Mode Course Control Based on Novel Double-power Combination Reaching Law** ........... 1
  
  *Men Maofeng, Zhao Yuelin, Jia Lingjie*

- **Service Quality Analysis of Bus Rapid Transit-A Case in Semarang, Indonesia** ................................. 6
  
  *M. Muiyia Ulkaq, Avinda J. Ardiani, Miftahul Farhan, Raka P. Bagja, Rama Z. Hanif*

- **Ship Adaptive Track Keeping Control Based on Iterative Sliding Mode** ........................................... 11
  
  *Ding Kaige, Bu Renxiang, Qin Ke, Li Tieshan*

- **Approaches to Cooperation between the Airline and Hotel Based on the Improved SCOR Model** ...... 16
  
  *Tang Yingjia, Wang Xu, Li Longxiao*

- **Ship Course Prediction Based on Self-adapting PSO-BP Neural Network Model** ............................. 21
  
  *Li Xinyu, Bu Renxiang, Qin Ke, Liu Yong*

- **A Facility Location Model Based on Entropy and TOPSIS for Pilot Boarding Waters** ....................... 25
  
  *Ning Zhou, Zhongzhou Fan, Wenye Zhang*

- **Finding an Optimal Route of a Consignment in a Seaport** .................................................................... 29
  
  *Denis Strelnikov, Julia Rudnitskaia*

- **Combined Forecasting Model of Water Traffic Accidents Based on Gray-BP Neural Network** ............ 34
  
  *Yi Zhao, Zhongzhou Fan, Chong Zhao*

- **A Bi-level Approach for Optimizing Rental Station Locations in Public Bicycle System** .................. 39
  
  *Wenming Rao, Yan Jiang*

## Railway Transportation

- **Research on Optimization of City Line Express Trains Based on Multi-objective Particle Swarm Optimization Algorithm** ................................................................................................................. 44
  
  *Li Hao, Qin Luo*

- **Inertial Method of Railway Track Diagnostics Incorporating the Condition of Rolling Surfaces of the Railcar’s Wheels** .................................................................................................................. 49
  
  *Alexander Boronakhin, Daniil Larionov, Liudmila Podgornaya, Anna Tkachenko, Roman Shalymov*

- **Countermeasure Research on Sichuan-Tibet Railway Construction Based on Safety Risk Assessment** ........................................................................................................................................... 54
  
  *Zhang Jin, Xu Junxiang*
Multiphysical System of Operational Monitoring of the Condition of the Railway Track .............................................. 59
  Danil Larionov, Natalia Romantsova, Roman Shalymov

Multi-Agent GIS Simulation for Railway Logistics Optimization ..................................................................................... 64
  Weiwei Gong, Lingyun Zhou, Fei Ye

Dynamic Modelling and Acceleration Signal Analysis of Rail Surface Defects for Enhanced Rail Condition Monitoring and Diagnosis.................................................................................................................. 69
  Andrew Keong Ng, Landong Martua, George Sun

Research on Calculation Method of Passenger Retention Time of Rail Transit Station Based on Travel Time Data ................................................................. 74
  Yitong Lyu, Yihong Mo, Qin Luo

Digitization of Work Instructions and Checklists for Improved Data Management and Work Productivity ........................................................................... 79
  Benjamin Jia Ming Heng, Andrew Keong Ng, Raymond Kong Hee Tay

Railway Freight Volume Forecast Based on GRA-WD-WNN ....................................................................................... 84
  Wai qi Tian, Peng Zhao, Ke Qiao

Research on Statistical Index and Evaluation System of Urban Rail Transit Train Delay Based on Operation Diagram........................................................................... 89
  Yilin Zhang

Human Behavior Analysis

Video Analytics in Train Cabin Using Deep Learning ......................................................................................................... 94
  Lur Tze Hsien, Indriyati Atmosukarto

3D CNN-based Accurate Prediction for Large-scale Traffic Flow ....................................................................................... 99
  Feng Yu, Dan Wei, Shuting Zhang, Yanli Shao

Understanding Additional Stopover Behaviors of Car Tourists: An Analysis of Combined Route Search and Mobile GPS Travel Trajectory Data ....................................................................................... 104
  Yiping Le, Saizo Aoyagi, Kazuki Takahashi

Assessing Driver Acceptance of Jakarta Community towards FCW and LDW ................................................................. 109
  Ahmad Zaki, Amalia Suzianti, Romadhani Ardi

Passenger Flow Prediction in Traffic System Based on Deep Neural Networks and Transfer Learning Method ............................................................................................................................... 115
  Yi Ren, Xu Chen, Sheng Wan, Kunqing Xie, Kaigui Bian

Research on OD Passenger Flow Forecasting Method for Urban Rail Transit Network Considering New Line Access Type........................................................................... 121
  Mingliang Xu, Qin Luo, Yihong Mo

Detection Algorithm of Takeover Behavior of Automatic Vehicles’ Drivers Based on Deep Learning .................................................................................................................. 126
  Li Zhang, Guizhen Yu, Bin Zhou, Zhangyu Wang and Guoyan Xu

Modeling Perceived Accuracy of Traveler Information Systems under Mixed Traffic Conditions .................................. 131
  Shehna Basheer, Karthik K. Srinivasan, R. Sivanandan

Intelligent Transportation Systems

Design and Application of Rural Road Lifecycle Management Information System ............................................................. 136
  Zhenhua Liu, Liuyang Liu, Wentao Fan

Transportation Mode Recognition on Multi Modal Routes based on Mobile GPS Data ........................................... 141
  Mariana Avezum, Jens Klinker, Bernd Bruegge
Impact of the Uncertainty of Velocity Information on Rear-end Collision in V2V Communication Environment

Han Zhang, Bin Zhou, Junjie Zhang, Miaomiao Liu

An Investigation into the Impact of Alternate Road Lighting on Road Traffic Accident Hotspots Using Spatial Analysis

El-Said Mamdouh Mahmoud Zahran, Soon Jiann Tan, Yok Hoe Yap, Eng Hie Tan, Christian Marc Francisco Pena, Hui Fong Yee, Mohammad Rakib Uddin

Safety Impact of Timing Optimization at Mixed-Traffic Intersections Based on Simulated Conflicts: A Case Study of Hanoi, Vietnam

Xuan-Can Vuong, Rui-Fang Mou, Trong-Thuat Vu


Zou Danping, Liu Juan, Chen Yuchun, Liu Yuhang, Chu Zhongjian

BAVPM: Practical Autonomous Vehicle Platoon Management Supported by Blockchain Technique

Zuobin Ying, Maode Ma, and Longyang Yi

Modeling, Simulation, and Control in ITS

PCB Configuration Analysis of Tire Pressure RKE Receivers for Passenger Cars

Francisc Demeter, Flaviu Mihai Frigura-Iliasa, Marius Mirica, Florin Alexa, Lia Dolga, Hannelore Filipescu

Vertical Alignments and Safety Performance: A Combinational Effect of Load, Vertical Grade, and Length

Zongxin Tang, Jianchuan Cheng

Computer Based Algorithm for Optimizing Design and Construction of Large Transport Infrastructure Objectives

Mihaela Frigura-Iliasa, Flaviu Mihai Frigura-Iliasa, Marius Mirica, Radu Vasil, Francisc Demeter, Mirela Iorga

Establishing Vibration Threshold for Effective Health Monitoring of SL20-5 Motor Compressor Set

Ze Siong Chan, Andrew Keong Ng, Raymond Kong Hee Tay

The Influence of the Electronic Components Located on the Front End of RKE Receivers for Passenger Cars

Radu Vasil, Flaviu Mihai Frigura-Iliasa, Mirela Iorga, Florin Alexa, Lia Dolga, Hannelore Filipescu

Characteristic Monitoring and Assessment Method for Dynamic Wireless Charging System of Electric Vehicle

Juan Liu, Danping Zou, Zhongjian Chu, Yuchun Chen, Gao Zuo, Liping Lu

Research on Travel Time Reliability of Highway Based on Generalized Extremum Distribution

Yuzhao Liang, Feng Xiong

Development of a Road Illumination Measurement System

Muhammad Amirul Afiq bin Ramli, Mohammad Rakib Uddin, Soon Jiann Tan, El-Said Mamdouh Mahmoud Zahran, Yok Hoe Yap

Real Time Multi-lane Detection Using Relevant Lines Based on Line Labeling Method

Sanggi Kim, Rinara Woo, Eun-Ju Yang, Dae-Wha Seo

Emergency Vehicle Signal Pre-emption System for Heterogeneous Traffic Condition-A Case Study in Trivandrum City

Anil R., M. Satyakumar, Ameena Salim
Prediction of Motor Vehicle Ownership in County Towns Based on Support Vector Machine .......... 311
   Xu hua Zhang, Min qi Hu, Xian yue Peng, Jing Gan, Qiao Jun Xiang

Road Grade and Vehicle Mass Estimation for Heavy-duty Vehicles Using Feedforward Neural Networks..........................................................316
   Sina Torabi, Mattias Wahde, Pitoyo Hartono

Chip-based Anti-collision System for Car Door Opening ............................................................. 322
   Zhi-Yu Zhung, Kuan-Chen Chen, Ying-Hao Yu, Ngaiming Kwok

Simulation-based Planning of Depots for Electric Bus Fleets Considering Operations and Charging Management.......................................................... 327
   Enrico Lauth, Patrick Mundt, Dietmar Göhlich

An Estimation Method of Road Traffic GHG Emissions in Planning Year Based on Road Traffic Planning and Design Indicators in Counties .......................................................... 334
   Jing Gan, Xipeng Xu, Cheng Peng, Qiao Jun Xiang

Vehicle Velocity Control in Case of Vehicle Platoon Merging ........................................................ 340
   Eisuke Kita, Miichiro Yamada

Author Index .................................................................................................................................345