2022 6th CAA International **Conference on Vehicular Control** and Intelligence (CVCI 2022)

Nanjing, China 28-30 October 2022

Pages 1-639



IEEE Catalog Number: CFP22U30-POD ISBN:

978-1-6654-5375-2

Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP22U30-POD

 ISBN (Print-On-Demand):
 978-1-6654-5375-2

 ISBN (Online):
 978-1-6654-5374-5

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

E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Contents

An Innovative Data Fusion Method based on Mixed H∞/Adaptive Kalman Filtering fo
Target Tracking of Intelligent Vehicles
Yujie Liu*, Congzhi Liu
Applied study on functional safety limit scenario test of a steering system based or
whole vehicle in the loop
Ruiling Guo*, Chang Yang, Dong Liang
Construction of Vehicle Driving Conditions Based on Rain flow Counting Theory1
Yunyi Wang, Jiamei Lin, Chao Wang, Jinyan Guo*, Sihan Liu, Xincheng Song
Lane Line Detection Technology Based on OpenCV for Specific Scenarios1
Wei Liu, Lu Cunhao*, Ning ZHANG
Vehicle Yaw Stability Control via Piecewise Control Strategy
Quanning Xu*
Influence analysis of levitation system control parameters under longitudinal eddy
current
Qinghui Liu*, Weihua Ma, Shihui Luo, Longquan Qin
Design and Simulation of FSC racing car chassis
Ammarul Hasan, Lu Cunhao*, Wei Liu, Ning ZHANG
Research on Multi-objective Adaptive Cruise Algorithm Based on Commercia
Vehicle3
Xiangzheng Liu, Hongyu Zheng*, CHANGFU ZONG, Chuyo Kaku, Tong Jiang
Research on Electronic Differential Control Algorithm of Distributed Drive Electric
Vehicles44
Tong Jiang, Hongyu Zheng*, CHANGFU ZONG, Chuyo Kaku, Xiangzheng Liu
Longitudinal Cruise Control of Truck Platoon Based on Distributed Sliding Mode
Control Strategy49
Feihao Cheng, Hongyu Zheng*, Chaofan Gong, Chuyo Kaku
A Review of SOTIF Research for Human-machine Driving Mode Switch of Intelligen
Vehicles54
Sichuan Xu, Hongjun Ding, Aimin Du*, Chuanchuan Chu, Yeyang Han, Hongyun
LI, Zhongpan Zhu
A distributed adaptive data-driven predictive control for heterogeneous platoons with
V2V communication trouble60
Jjingzheng Guo, Hongyan Guo*, Qingyu Meng, Xu Zhao
Thermal runaway analysis and model of nickel-rich lithium-ion batteries in differen
overcharging states60
Zhaoqi Chen, peng huang, Oitian Pang, Pingwei Gu, Bin Duan*, Chenghui Zhang

A Convenient and Accurate Online Fault Diagnosis Method for Lithium-ion Battery
Packs
Qitian Pang, Pingwei Gu, Yongzhe Kang, Zhaoqi Chen, Bin Duan*, Chenghui Zhang
Emergency Collision Avoidance Decision-making for Autonomous Vehicles: A Model-
based Reinforcement Learning Approach
Xiangkun He*, Lv Chen, Xuewu Ji, Yahui Liu
A Novel Decision-making Framework for Lane Change Considering Intentions of
Traffic Participants86
Bin Li*, Lin Zhang, Qiang Meng, Wei Pan
Stability Coordination Control of Distributed Drive Vehicle Matching Mechanical
Elastic Electric Wheel Based on Game Theory92
Xinyu Sun, Youqun Zhao*, Fen Lin, Chenxi Zhang, Huifan DENG, ZhaoLong Feng
Tire Blowout Behavior Simulation Evaluation for Escape Strategy of Vehicles with
Model Predictive Control Approach98
Niancheng Guo*, Yang Gao, Yitong Song, Hao Li, Jinyong Shangguan, Ming Yue
Risk-aware Deep Reinforcement Learning for Decision-making and Planning of
Autonomous Vehicles
Lei Zeng, Wen Hu*, Bangji Zhang, Yang Wu, Dongpu Cao
Adaptive backstepping control with nonlinear disturbance observer design for active
suspension and mechanical elastic electric wheel system
Tao Xu, Youqun Zhao*, Fen Lin, Tian Li, ZhaoLong Feng
Integral Sliding-Mode Platoon Control for Connected Vehicles with Disturbance
Observer
Han Chen, Yongfu Li*, Shuyou Yu, Shuming Shi
Trajectory Prediction for Human-driven Vehicles Based on a Combined Method of
Deep Neural Network and Driving Risk Map
Xulei Liu*, Yafei Wang, Boyu Duan, Guofeng Zhou, Chengliang Yin
A Graph-search based Trajectory Planning Approach with Longitudianl Priority128
Rong Guo*, Shibo Yu
Deep Learning based 3D Object Detection in Indoor Environments: A Review134
Xiaohui Jiang, Lijin Han*, Hui Liu, Shida Nie, Shihao Wang, Yan Wen
Improving the Performance of In-vehicle Interaction: the Role of Wrist Support140
Junfu Huang*, Qiang Zhang, Lin Li, Qiuyang Tang, Qiang He
Distracted Driving under Angry: A Study on Driving Performance Analysis and Risk
Detection
Yinghao Zhong, Yingzhang Wu, Hao Chen, Juncheng Zhang, Chengmou Li, Gang
Guo*
A High-Level Radar and Vision Sensor Fusion for Autonomous Vehicle
Dongmei Wu, Yifan Zhu, Changqing Du*, Xing Liu

A Headlight Automatic Leveling System with Misadjustment Suppression158
Hang Zhang, Yunxia Shi, Zhiwei Shi, Chao Song, Xinxu Yan, Bin Wu*
An Adaptive Driving Beam System with Camera Information Correcting Technique.
Zhongxu Guan, Linnan Li, Nana Gong, Zhaohua Zhai, Fuyue Deng, Bin Wu*
Research on the effect of olfactory stimulus parameters on awakening effect of driving
fatigue
BangBei Tang*, LingYun Deng, MingXin Zhu, BingYan Chen, Hao Chen, Qing Lei,
Yingzhang Wu, wenjing cai
Coordinated control of path tracking and stability for intelligent 4WID electric vehicle
based on variable prediction horizon.
Dongmei Wu, Jiabin Wang, Changqing Du*, Sixi Wan
Research on the Influence of the Depth and Width of YOLOv5 Network Structure on
Traffic Signal Detection Performance
Chao Wang*, Jingjing Fan, Zhuang Liu, Kuanwei Liu
Personalized Driver Based Automatic Shift-Scheduling Optimization for Heavy-duty
Truck
LiMing Zhang, Kang SONG, Hui Xie*
Personalized Driver Car-Following Model ——Considering Human's Limited
Perception Ability and Risk Assessment Characteristics
Huihua Gao, Ting Qu*, YunFeng Hu, Hong Chen
A Sliding Mode Predictive Control Approach for Traction Control of Battery Electric
Vehicle
Zhihong Li, Lin He*, Zishuo Shi, Yujiang Wei, Mingwei Wang, Shi Qin
Long-time Driving Style Recognition Using Gated Recurrent Unit With Attention.
206
Hejian Zhuang*, Yuyao Jiang, Yifan Cheng, Hongqing Chu, Bingzhao Gao, Hong
Chen
Visual Inertial SLAM with Deep Learning-enabled Loop Closure for Challenging
Scenes
Jiaze Li, Fenglin Zhang, Junqiao Zhao*, Yingfeng Cai, Chen Ye
A Lightweight LiDAR SLAM in Indoor-Outdoor Switch Environments218
Geng Zhang, Chao Yang, Weida Wang, Changle Xiang, Ying Li*
AFS/DYC Control of In-Wheel Motor Drive Electric Vehicle With Adaptive Tire
Cornering Stiffness
Shaohua Li, Zekun Yang*
Deep Reinforcement Learning based Multi-Objective Energy Management Strategy for
a Plug-in Hybrid Electric Bus Considering Driving Style Recognition230
Chunmei Zhang, Wei Cui, Naxin Cui*

Fuzzy Adaptive Cruise Control of Autonomous Vehicle and Prescan-MATLAB C	Co-
simulation Verification	36
Huiwen Liu, Xiaohong Jiao*, Yahui Zhang	
Cooperative Adaptive Cruise Control with Compensating for Vehicle Actuator Dela	ıys
Based on Internal Model Control	240
Jing Bai, Xiaohong Jiao*, Huiwen Liu, Yahui Zhang	
Robust Predictive Energy-saving Cruise Control of A Four-wheel Electric Vehicle w	ith
An Air Contioning System via A Generalized Proportional Integral Observer 2	246
Jiangtong Wang, Jiageng Tong, Ziyuan Qian, Junqin Yang, Jinhao Liu, Chen Da	ΑI,
Sun Hao, Shihua Li*	
A Lithium-ion Battery SOC Estimation Method Involving Battery Internal Temperatu	
Yuntong Liu*	
Research on Fault Diagnosis Method for Diesel Engine Fuel System based on Mod	el-
Softmax	60
Datong Tao, Kang SONG*, Hui Xie	
A Lateral Acceleration Prediction Model based on Current Vehicle State2	66
Shaosong Li, Xuyang Wang, Xiaohui Lu, Zaixiao Wang, Zhixin Yu*	
Revisiting Point Sampling in LiDAR-based 3D Object Detection	272
Xiaolong Zhao, Wei Tian*	
Research on torque distribution control of high-performance distributed drive mul	lti-
axle special vehicle	278
Luoquan Li, Hongliang Wang*, Dawei Pi, Xianhui Wang, Wang Erlie, Ch	ien
Yongdan	
Connection Fault Diagnosis for Series-connected Lithium-ion Battery Based on Cur	rve
Similarity Calculation and Curve Conversion	286
Xinchao Ding, Zhongrui Cui, Naxin Cui*	
A Hierarchical Fault Diagnosis Method for Lithium Battery Based on Polymorpl	hic
Jump	92
Jinglun Li, Xin Gu, Yue Wang, Ziheng Mao, KAILONG LIU, Yunlong Shang*	
Efficient and Compact Equalization Topology Design and Control Method2	298
Shiyu Wang, Wenyuan Zhao, Yue Wang, Shuai Zhang, Ziqiang Jia, Yunlong Shan	ıg*
Adaptive Cruise Control and Energy-Efficient Torque Allocation for Distributed-Dri	ive
Electric Vehicles Under Low-Speed Stop-and-Go Scenarios	03
Xubing Fan, Dele Meng*, Mengjian Tian, Bingzhao Gao	
A Multi-Fault Diagnosis Method for Battery Packs Based on Low-Redundan	су
Representation Learning	808
Ziheng Mao, Jinglun Li, Xin Gu, Bencheng Huang, KAILONG LIU, Shuai Zhai	ng,
Yunlong Shang*	

A Screening Method for Retired Lithium-ion Batteries Based on Naive Bayes31
Bencheng Huang, Xiaoling Fu*, Xin Gu, KAILONG LIU, Wenyuan Zhao, Yunlon
Shang
Predictive Energy Management Control for Hybrid Electric Vehicles Based on Spee
Predictor With Optimized Hyper-Parameters31
Jingjing He, Xiaolong Chen, Xiaohong Jiao*, Yahui Zhang
Cooperative Steering Control System for Robust Obstacle Avoidance in Cluttered Off
Road Environments
Liang Yan, Xiaodong Wu*, Min Xu, Mingyan Wang
Vehicle state and parameter estimation based on improved adaptive dual extende
Kalman filter with variable sliding window
Zhu Jie Sha, Fen Lin*, Youqun Zhao, ShouGang Ma
Fuzzy Unknown Input Observers Design for Four-Wheel Independently Actuate
Electric Vehicles
Jiyun Lu*, Juntao Pan, Weilong Lai, Jinzhao Zheng
Improving Monocular Depth Estimation in Traffic Scenarios by Polarization34
Zhen Sun, Wei Tian*
Autonomous Motion Decision-making based on Deep Reinforcement Learning for
Autonomous Driving34
Jie Hu, Huifang Kong*, Tiankuo Liu, Yibo Meng
Direct Torque Control of Permanent Magnet Synchronous Motor Using Voltage Vector
Prediction35
Zhixiang Lin, Junqi Xu*, Guang-Zhong Cao, Liang Tao, sudan huang
Research on multi-source information fusion based on extended Kalman filter35 Yibo Meng, Jie Hu, Huifang Kong*
Learning-based fast image enhancement for driving scenes
Mingwei Dong, Runwu Liu, Huifang Kong*
Multi-objective Optimization for Cooperative Organization of CAVs at Unsignalize
Intersection
haiyang hu, Duanfeng Chu*, Liping Lu
Path Following of Autonomous Vehicles Based on Adaptive Nonsingular Termina
Sliding Mode Control
Wang Wei*, Ting Zhang, Xiaohong Jiao, Yahui Zhang
A Flexible and Efficient Reactive Power Compensation Method for Modular Hig
Frequency Link Matrix Converter in Battery Charging37
Gaotong Wu, Jinqiu Song, Bin Duan*, Wenlong Ding, Dongxiang Wan, Chenghu
Zhang Malti Camalina Dhana Camant Danaston tina and Empa Samunia Startan for As
Multi-Sampling Phase Current Reconstruction and Error Suppression Strategy for A
Electric Drive System

Yongpeng Shen*, Di Liu, xiaofang yuan, Xizheng Zhang
The Super-Twisting Sliding Mode Control for Half-Bridge Three-Level LLC Resonant
Converter
Dexiang Feng, Chenzhong Zhang, Jinqiu Song, Bin Duan*, Wenlong Ding,
Chenghui Zhang
The monocular ranging based on stable target detection and tracking for intelligent
vehicle
Jiahui Zeng, xiaofei pei*, Wenhai xi
EMB-based brake failure stability control strategy for distributed drive electric vehicles.
401
Xianzhi Tang, Longfei Shi, Bo Wang*, Yongjia Xie
A Novel Safety-Oriented Control model of HTC with Electromechanical Interfaces.
407
Kehan Yan, Jingkang Li, Jianqiu Li*, Jiayi Hu, Zunyan Hu, Qian Zhang, Liangfei
Xu, Minggao Ouyang
Vehicle Depth Estimation Based on Monocular Camera in Extreme Weather413
Qi Chunyang, Hengxv Lv, Guobao Mu, Song Chuanxue, Feng Xiao, Song Shixin*,
Naifu Zhang, Da Wang.
Task-attentive LiDAR Filter: Adaptive ROI and Semantic-based Ground
Segmentation
Yaodong Cui, Minghao Ning, Wenbo Li*, Dongpu Cao, Amir khajapour
Multi-dimensional Attention Network for Vehicle Re-identification
Yunlong Gao, Liping Lu, Bingrong Xu, Duanfeng Chu*
Traffic information-based eco-driving for plug-in electric vehicles: A hierarchical
control strategy
Yapeng Li, Xianke Lin, Xiaosong Hu*
Seamless Indoor and Outdoor Positioning of Vehicles Based on RTK/UWB435
Pengyuan Lv, Mingyang Wang, Baobao Jin, Yong Shen*
Economic Connected Cruise Control of Electric CAVs using DHP443
Huiyuan Xian, Yougang Bian*, Jun Ye, Nannan Li, Changkun Du, Biao Xu,
Manjiang Hu
Car Following Model Based on Driving Risk Field for Vehicle Infrastructure
Cooperation
Teng Cheng*, Ligang Guo, Zexu Wu, Qin Shi, Hao Ni
A Multi-objective Optimal Charging Strategy Based on Electro-thermal Coupling
Model
Zhiyong Xu, Guangcai Zhao, Xuefeng Liu, Yuhang Kuai, Bin Duan*, Chenghui
Zhang
A Path tracking controller design method for wheeled mobile robots: one dimensional

case461
Jinwen PAN*, Kai Chen, Yurong Li, Qing Gao
Experimental research on heating of fuel cell vehicle under cold environment467
Guozhuo Wang*, Shiyu Wu, Zhenyu Nie
Research on local real-time obstacle avoidance path planning of unmanned vehicle
based on improved artificial potential field method
Chang Liu*, Zhai Li, Zhang XueYing
An Effective Voxelization Method for LiDAR-based 3D Object Detection478
Rongxuan Wang, Chao Yang, Weida Wang, Changle Xiang, Ying Li*
Predictive Control Strategy for Four-switch Buck-Boost Converter with Mode Smooth
Transition
Entong Cao, Wenlong Ding, Bin Duan*, Jinqiu Song, Chenzhong Zhang, Dongxiang
Wan, Chenghui Zhang
Decision-Making in Autonomous Driving by Reinforcement Learning Combined with
Planning-control
Zhe Yang, xiaofei pei*, jie xu, Xinkang Zhang, Wenhai xi
Lidar Point Cloud Object Detection and Semantic Segmentation Fusion Based on
Bird's-Eye-View496
Jiachen Wang*, Jiaqi Fan, Jiahua Xue, Xu Bai, Junbiao Diao
Fatigue Driving Detection of Bus Drivers under Idling Conditions Using An Improved
YOLOv5 Algorithm502
Yuan Wang, Haojie Fang*, Yuming Yin, Huiming HUANG, weina Hao
A novel energy management strategy for connected plug-in hybrid electric vehicle
using periodic event-triggered mechanism508
Xuelong Du, Chao Yang*, Weida Wang, Liuquan Yang
A Modified Distribution Algorithm For Four-Wheel Independent Drive Electric
Vehicles under Actuator Faults515
Biao Hu, Weida Wang, Chao Yang*
LQR-based Predictive Energy-saving Control for Commercial Vehicles Based On
Slope Information522
Xianfeng Ren, Xianyong Lv, Lubing Zhang, Liping Chen, Hongqing Chu*,
Bingzhao Gao
Low-light Traffic Objects Detection for Automated Vehicles
Xuewei Wang*, Dongmei wang, Siyuan Li, Shaohua Li, pengtian Zeng, Xiao Liang
Driving Style Recognition Considering Different Driving Scenes533
Lubing Zhang, Guopeng Li, Yedong Song, Jialin Wang, Hongqing Chu*, Hong Chen
Construction of test scenarios for automated vehicles under roundabout539
Guangchen Zhang, Chang Yuan, Hong Shu*
Research on Obstacle Detection Methods of Unmanned Vehicles in Off-road

Qingyu Dong, Jingyao Wang, Guo Jinghua* Adaptive LQR Path Tracking Control for 4WS Electric Vehicles Based on Genet Algorithm	553 559 and 565
Algorithm	553 559 and 565
Ao Lu*, Ziwang Lu, Runfeng Li, Guangyu Tian Graph-based Planning-informed Trajectory Prediction for Autonomous Driving5: Qing Dong, Titong Jiang, Tao Xu, Yahui Liu* Cooperative Motion Planning with 3D Spatio-temporal Map for Connected an Automated Vehicles in Intersection	559 and 565
Graph-based Planning-informed Trajectory Prediction for Autonomous Driving5: Qing Dong, Titong Jiang, Tao Xu, Yahui Liu* Cooperative Motion Planning with 3D Spatio-temporal Map for Connected an Automated Vehicles in Intersection	ind 565
Qing Dong, Titong Jiang, Tao Xu, Yahui Liu* Cooperative Motion Planning with 3D Spatio-temporal Map for Connected an Automated Vehicles in Intersection	ind 565
Cooperative Motion Planning with 3D Spatio-temporal Map for Connected an Automated Vehicles in Intersection	565
Yongxing Cao, Bijun Li, Hongjuan Zhang*, Duanfeng Chu, Yuanxian Huan	
	ng,
Xiaomin Guo	
Lane Keeping Controller based on LQR Optimized by Genetic Algorithm5	571
Lie Guo*, Liren Wei, Pingshu Ge, Zengke Qin	
Eco-driving control for vehicles considering energy consumption characteristics5	77
Yao Tong, Yang Yang, Heng Li, Bin Huang, Yonggang LIU*, Chen Zheng	
Optimized SC-F-LOAM: Optimized Fast LiDAR Odometry and Mapping Using Sca	an
Context5	83
Lizhou Liao, Chunyun Fu*, Binbin Feng, Tian Su	
DDPG-guided Adaptive Equivalent Consumption Minimization Strategy for a Rang	ge-
Extended Electric Vehicle53	89
Xu Wang, ying huang*, Jian Wang, Chengliang Luo	
Vehicle Height and Posture Control of the Electronic Air Suspension System wi	ith
Adjustable Damping based on Hybrid Model59	<i>i</i> 95
Haoyu Lv*, Quantong Li, Xiangyu Wang, Bin Xie	
Monitoring and Detection of Driver Fatigue from Monocular Cameras Based on Yo	olo
v5	503
Energy Management Strategy Based on Constructing a Fitting Driving Cycle for Pu	ure
Electric Vehicles60	09
Kaixuan Zhang, Jiageng RUAN*, Ye Ziyi, Hanghang Cui, TongYang Li	
Adaptive Cruise Control System Based on multi-objective Model Predictive	ive
Control6	15
Aijing Kong*, Xinbo Chen	
Mandatory Lane-Changing Decision-Making in Dense Traffic for Autonomo	ous
Vehicles based on Deep Reinforcement Learning	521
Yuxiao Gu, Kang Yuan, Shuo Yang, Minghao Ning, Yanjun Huang*	
Vehicle speed tracking in bench test based on DDPG	528
Sheng Song Feng, ying huang*, Jian Wang, Xu Wang	
Multi-Objective Vehicle Speed Planning with Incorporation of Driving Sty	/le

Classification634
Guanying Liu, Chen Zheng*, Shiquan Shen, Yonggang LIU
Trajectory Tracking Model Predictive Controller via Sparse Bayesian Learning640
XuanYu Hu*, Meng Fei, Xuyu Shen, Fu Liu
A Gear Drive Brake-By-Wire Actuator646
Xianxu BAI*
Intelligent Fault Diagnosis of Hypersonic Vehicle Based on ResCNN-LSTM-ATT652
Jiaxin Zhao, Liang Wang, Pingli Lu*, Changkun Du
An Optimal Management Scheme for Connected Vehicles Merging at a
Roundabout658
Yao Zhang, Jiangyan Zhang*, Bin Dong
Energy optimal control of powertrain and air conditioning systems for connected
EVs664
Hongqing Chu*, Xi Luo, Zhengyi Hao, Xianning Li, yifan Cheng, Jinlong Hong
Lulu Guo, Bingzhao Gao
An improved Q-Learning algorithm and its application to the optimized path planning
for unmanned ground robot with obstacle avoidance
Zekun Bai, Hui Pang*, Minhao Liu, Mingxiang Wang
Research on eco-driving strategy in urban scenarios based on deep reinforcemen
learning676
Pengfei Yu, Shaohua Wang, Dehua Shi*, Chunfang Yin
Longitudinal Collision Avoidance of Driverless Vehicles based on Improved Risk
Assessment
Peng Xiao, Tao Zhang, Pingshu Ge*, Haoyu Zhang
Unmanned Vehicle Path Planning based on Improved Ant Colony Algorithm688
Yanli Chu, Tao Zhang, Pingshu Ge*, Chi Sun
Active Front Steering Controller for Distributed Drive Electric Vehicles based or
Sliding Mode Control694
Fanglei Cui, Pingshu Ge*, Yang Wang, Tao Zhang
An Efficient Collaborative Framework For Connected and Automated Vehicles at
Unsignalized Intersections under Various Traffic Loads699
Jingyang Peng*, Wenge Wang, Shunzhang Zou, Guolin Wang
Dynamic Visual SLAM Based on Efficient Two-Stage Statistical Model705
Shaoteng Wu, Ruitao Zhang, Yafei Wang*
Global Localization based on Road-centric 3D Point Cloud Descriptor in Urbar
Environments711
Xin Zhang, Zexing Li, Yafei Wang*
Research on collision prevention early warning technology of parking lo
vehicles717

GuanYu Zhu, LiGuo Zang*, Zhi Wang, Fen Lin
State-of-charge estimation for lithium-ion battery pack based on Unscented Kalman
Filter considering cell inconsistency722
Kun Xiao, Zhongrui Cui, Naxin Cui*
Long short-term memory network-based optimized control for active suspension
system728
Mingxiang Wang, Hui Pang*, Lei Wang, Jibo Luo
Study on Parameter Optimization of Energy Management Strategy for Multi-mode
Hybrid Power Bus734
Xin Li, Linchuan Zhang, Jingyu Zhu*
Trajectory Tracking Control of Autonomous Vehicles Based on Reinforcement
Learning and Curvature Feedforward741
Qiang Yang, Guiyuan Li*, Gang Li, Yulin Liu
Active haptic assistance control based on expert driver behavior analyzation747
Li Yuanhao, Zhang Han*, Zhao Wanzhong
Spatial-Temporal Graph Attention Network for Pedestrain Trajectory Prediction753
Yanran Liu, Hongyan Guo*, Qingyu Meng, Jialin Li
Estimation of Tire-Road Friction Coefficient Based on the Unitire Model759
Chaofan Gong, CHANGFU ZONG, Dang Lu, Chuyo Kaku, Dong Zhang*
Observer-based Finite-time Platoon Control for Connected Vehicles
Changkun Du, Haikuo Liu, Nannan Li, Yougang Bian, Hengzai Hu, Zhongqi Sun*
Adaptive Speed Control of UAV Engine at High Altitude Based on Mode770
qinwang liu, Yifang Feng, tang qin, Tao Chen*
Research on User Experience Evaluation Method Based on Eye Movement
Technology
Jian Meng, Bo Zhang*, Ya'nan Li
P-VIDO: A Tightly-Coupled Vehicle Dynamics and Plane Priors Extension to Visual-
Inertial State Estimator
haoyu Xing, LU Xiong, Junqiao Zhao*, Siyuan Li
Vehicle Energy-Saving Motion Planning Based on Deep Q-Network787
Dazhen Sun, Yinghao Jin, Jinpeng Wang, Jialin Wang, Qifang Liu*
Research on Handling Stability Control Strategy of Distributed Drive Electric
Vehicle
Yang Lu, Jiaqi Li, Weihai Jiang, Zhongwen Zhu*
Real-Time Model Predictive Control for Simultaneous Drift and Trajectory Tracking of
Autonomous Vehicles
Haotian Dong, Huilong Yu, Junqiang Xi*
Human-like Behavior Decision Making Method for Intelligent Vehicle Considering
Driver Characteristics

cui maoyuan, Chao Wang, Ying Lv, Wenya Yu, Hongyan Guo, Yefeng Tian*
Trajectory Prediction Method Involving Strong Map Coupling for Automated
Vehicles
cui maoyuan, Chao Wang, Ying Lv, Qingyu Meng, He Liu*, Hongyan Guo
Moving Horizon path planning for intelligent vehicle oriented to dynamic obstacle
avoidance818
JiaQi Han, cui maoyuan, Ying Lv, liu kewang, Qikun Dai, Hongyan Guo*
Pedestrian Interaction Algorithm for Autonomous Vehicles Considering Crossing
Intention and Driving Style
Daofei Li*, Xin Jiang, Xiao Yang, Li Bo, Bin Xiao, Jiajie Zhang, Chuheng Pan, Hao
Lyu
Yaw Stability Control of Distributed Drive Electric Vehicle Based on Torque Optimal
Distribution in Ice and Snow Environment
kong debao, Chang Liu*, cui maoyuan, Ying Lv, liu kewang, Hongyan Guo
A Predictive PHEV Energy Management Strategy Based on GRU and Enhanced
Dynamic Programming837
Yuanyang Jin, Tao Chen*, Daxin Chen, Yonghan Gao
Influence of Fog Weather on Automotive Vision Target Detection
Shunchang Duan, Weihan Li, Xianxu BAI*
Responses of Preview-based Vehicle Suspension System on Discrete Impact Roads.
848
Shaodong Qi, Weihan Li, Xianxu BAI*
Driving Style Recognition of Interacting Vehicles in Multiple Scenarios854
Xiao Yang, Li Bo, Houjian Li, Ao Liu, Hao Lyu, Hao Pan, Daofei Li*
Uncertainty-Aware Motion Planning for Autonomous Driving on Highway860
Kai Yang*, Xiaolin Tang, Ming Wang, Shen Li, Xiaosong Hu
Research on dynamics model evaluation method of commercial vehicle base on error
in prediction horizon for nonlinear MPC866
Boshi Zhang*, Shuming Shi, Shuyou Yu, Xiaolong Gao, Nan Lin
Event Triggered State Estimation for Connected Vehicles with Packet Losses870
Yan Wang, Guodong Yin, Lv Chen*, zhang zhiguo, Feng Tian, zhang fengjiao
Personalized Autonomous Vehicle Control for Typical Driving Scenarios876
Haoran Li, Wangling Wei, Sifa Zheng*, Chuan Sun
Virtual Force Vector Control Method of Intelligent Vehicle Path Planning882
Wenli Wu, Zhilin Jin*
Hydrodynamic Model Identification of an Unmanned Surface Vessel with Experiment
Data
zhigang lu, JiaCheng Li, Pengying Wu, Huarong Zheng*, Yamin Huang
Semantic Mapping Optimization Based on LIDAR and Camera Data Fusion for
Semantic Mapping Optimization based on LIDAK and Camera Data Pusion for

autonomous vehicle894
Xiaolong Cheng, keke geng*, Guodong Yin, Yuxiao Sun, Jinhu Wang, Pengbo Ding
Output Feedback Nonlinear Adaptive Steering Control of Driving Robot Vehicle with
Model Uncertainty
Gang Chen*, Keyi Guo, Zhifeng Chen, Liangmo Wang, Weigong Zhang
Energy-oriented Routing Strategy of Electric Vehicle: An End-to-End Reinforcement
Learning Approach906
Mengcheng Tang, Bingbing Li, Haoji Liu, Weichao Zhuang*, Zhaojian Li, Jiankun
Peng
Fault Tolerant Control of Actuator Failure in Distributed Drive Electric Vehicle913
Limin Niu*, Yiqi Zhang, Jianmei Lv, Chao Hu, Lingchu Wan
Trajectory Tracking Control Design for Driverless Racing Car Considering
Longitudinal Load Transfer
Zhizhen Zhu, Rongcan Li, Haoji Liu, Ran Liu, Weichao Zhuang*, Guodong Yin
Human-like Adaptive Cruise Control System Based on Fuzzy Reinforcement
Learning926
Tangyike Zhang, Jiamin Shi, Jingmin Xin*, Nanning Zheng
Shift schedule design of thirty-two-speed binary logic transmission based on man-
vehicle-road System932
Lanqi Zhou, Xiaohua Zeng*, Weizhi Liang, Dongpo Yang, Dafeng Song
Vehicle Cornering Stability Analysis of Aerodynamic Kit Based on Active Tilting Rear
Wing939
Yunfei Zha, XiaoShan Shi*, Hao Wu
Binocular infrared depth estimation based on generative adversarial network945
Jinhu Wang, keke geng, Guodong Yin*, Xiaolong Cheng, Yuxiao Sun, Pengbo Ding
Shared Steering Control System Subject to Human-Vehicle Uncertainty951
Quanning Xu*
Lane Change Style Identification for Natural Driving Environments957
ding hua, shangguan xingxing*, yang wenjie
Design of Vehicle Speed Tracking Controller based on UniTire Tire Model964
Henghui Lu, Wang Fei*, Hongyan Guo, Dang Lu, Jinlong Hong, Zhijie Wu
Research on adaptive control of input time delay for vehicle electronic stability control
system
Shuai Wang, Zhixian Fan, BaoLi Li, Xinyu Tang, Zhengfeng Chen, Qing Zhou, Jian
Wu*
Adaptive angle tracking control strategy for electro-hydraulic coupled steering
system
Wentong Han, Chunjiang Bao*, Zhixian Fan, Jian Wu, BaoLi Li, Qing Zhou,
Pengyuan Li

Research on control of AMT shift Actuator Based on Backstepping
Shuai Wang, Zhixian Fan, BaoLi Li, Shuying Gao, Guanjie Cui, Pengyuan Li, Jian
Wu, Chengqiang Yin*
A Semi-physical Method for Tire Normal Load Estimation Using Intelligent Tires under
Cornering Conditions
Jianfeng Zhou*, Nan Xu, Liangshen Guo, Zhenxu Wang
Multi-objective adaptive cruise control optimization algorithm for electric vehicles
based on model predictive control
Jiasen Xu, Niaona Zhang*, Jieshu Wang, Sheng Yang
Deep learning based nighttime target enhancement detection algorithm for intelligent
vehicles
Ze Wu, Xiaodong Miao*, WeiWen Li, Hu Yu
$Improved\ Cartographer\ Algorithm\ Based\ on\ Map-to-Map\ Loopback\ Detection.\ \dots 1002$
Sibing Yang, Cong Geng*, Miaomiao Li, Jiang Liu, Fubei Cui
Human-like Tracking Control Strategy for Autonomous Vehicle Based on Preview
Feedforward and Active Disturbance Rejection Control
Neng Liu, Jinxiang Wang*, Zhenwu Fang, Sizhe Cheng, Jinxin Chen, Guodong Yin
Clutch Control Timing Optimization for Adjacent Gearshift Process with Multiple
Clutches Based on Adaptive Kriging Surrogate Model
Peng Dong*, Junqing Li, Shuhan Wang, Feihong Mao, xiangyang xu, Wei Guo,
Yanfang Liu, Huaxue Liu
Research on Driving Style Recognition Model Considering Different Traffic Density
and Driving Behavior
Niyang Xia, Yunbing Yan*, Xuequan Tang, Lin Zhang
Robust Predictive Control of PMSM Drive for Electric Vehicle with System
Nonlinearity and Uncertainties
Youyou Gao, Meng Li, Xing Xu*, Heping Lin, Yong Li
Co-optimization of Speed Planning and Energy Management for Connected Hybrid
Electric Vehicles under a Single Signal Intersection
Fengqi Zhang*, Lehua Xiao, Xiaosong Hu, Shaobo Xie, Hui Pang, Yahui Cui
Fault Diagnosis Strategy of Autonomous Steering System for Intelligent Vehicle Based
on State Estimation
Shenguang He, Xing Xu*, Ju Xie, Feng Wang, Zhenyu Liu
Optimization of Negative Stiffness Air Pressure for Quasi-Zero Stiffness Air
Suspensions Based on Cooperative Game Theory
Zhixiang Ma, Xing Xu*, Ju Xie, Xinwei Jiang
Hierarchical Optimal Control of a Group of Electric Vehicles for Maximizing Energy
Efficiency and Battery Life
Bingbing Li, Weichao Zhuang*, Mengcheng Tang, Jinhui Li

Predictive energy management strategy of fuel cell bus based on comprehensive energy
consumption and compound braking proportion distribution
Mei Yan, Guotong Li, Hongwen He*, Li Hao
Experimental Validation Of Tire-road Friction Observer Based On Self-aligning
Torque
Liang Shao*, Jiawei Xiang, Arno Eichberger, Cornelia Lex
Drifting Planning and Collision Avoidance under Emergency Circumstances1070
Chen Kai*
Nonlinear Dynamics based Trajectory Tracking Robust Control of Unmanned Ground
Vehicle
Jiarui Song, Tao Gang, Zang Zheng, Li Derun, Xingjie Fu, Jianwei Gong*
Real-time Multiple Path Prediction and Planning for Autonomous Driving aided by FCN
Hongtu Zhou, Xinneng Yang, Enwei Zhang, Junqiao Zhao, Chen Ye, Yan Wu
An Integrated GNSS/INS/DR Positioning Strategy Considering Nonholonomic
Constraints for Intelligent Vehicle
GUOYING CHEN, Jiaqi Wang*, Hu Hongyu
Energy Optimization of Extended-Range Electric Vehicles Based on Convex
Programming Algorithm
Shengyan Hou, Hai Yin, Kai Li, jinwu gao*
Ecological Driving Strategy for Fuel Cell Hybrid Electric Vehicle Based on Continuous
Deep Reinforcement Learning
Weiqi Chen, Guodong Yin, Yi Fan, Weichao Zhuang, Hailong Zhang, Jiankun Peng*
Assessment of driving task complexity of automated vehicles based on information
entropy
Qi Liu, Chang Yuan, Youheng Zeng, Yi Chai, Hong Shu*
Plane path planning and driving behavior control based on obstacle avoidance and
driving safety
Shixuan Yuan, Qin Shi*, Lin He, Zejia He, Jixiang Liang, Jingkang Gui
Vehicle Stability Control Considering Longitudinal Disturbances of Wheel Dynamic
Based on Linear Time-varying Model Predictive Control
Xuyang Wang, Shaosong Li, Xiaohui Lu, Na Liu, Zhixin Yu*
Research on YOLOX-based tire defect detection method
Qinghua Qi*, Liu Zhan
A comparative study of quadrotor UAV motion control with experimental
validation
Yuxue Li, Xiaoyuan Zhu*
An interpretation framework for autonomous vehicles decision-making via SHAP and
RF1137

Zhihao Cui*, meng li, Yanjun Huang, Yulei Wang, Hong Chen	
Electric vehicle routing optimization considering the inclines of roads in post-disaster	
charging relief	
Qixing Liu*, Peng Xu, Yuhu Wu	
Fuel cell bus energy management based on deep reinforcement learning in NGSIM	
high-speed traffic scenario	
Yang Shen, Fengyan Yi*, Yi Fan, Weiqi Chen, Jiaming Zhou, Jiankun Peng	
Design and Test of Electro-mechanical Brake Experiment System	
Houhua Jing*, Ruixue Feng, Qingan Lin	
Coupling model-data driven method for adaptive state-of-energy estimation of lithium-	
ion batteries	
Zhou Sida, Zhou Xinan, Tianyi Ma, Shiqiang Liu, Chen Fei, Yang Shichun*	
Tracking Control for Autonomous Four-Wheel Independently Driven Vehicle Based on	
Deep Reinforcement Learning	
Jianming Tang, Qin Li*, wang yong, Deqiang HE, Yong Chen	
Velocity Trajectory Planning of Electric Vehicles with Consideration of the Passenger's	
Individual Preferences	
Yan Yongjun, Han Dongming, Tong Shen, Zejiang Wang, Jinxiang Wang*, Guodong	
Yin	
Longitudinal and Lateral Coordinated Control of Distributed Drive Electric Vehicles	
Based on Model Predictive Control	
Yicheng Yao, Yan Yongjun, Peng Lin, Han Dongming, Jinxiang Wang*, Guodong	
Yin	
Stability Analysis of a Closed-loop Articulated Vehicle System with Trailer Active	
Steering based on LQR Control	
Qianchen Zhang, Ning ZHANG*, Zhiyu Wang, Haobin Zhang, Jian Wu, Guodong	
Yin	
Driver Distraction Behavior Detection using a Vision Transformer Model based on	
Transfer Learning Strategy	
Zhenwu Fang, Jinxin Chen, Jinxiang Wang*, Zejiang Wang, Neng Liu, Guodong Yin	
Fatigue driving detection by using the proposed time cumulative effect model1196	
Jian Chen*, Lu Xiang, Ming Yan, Jing Xu	
Integrated Optimization of Transit Signal Priority and Trajectory Planning for	
Autonomous Buses to Catch Green Light	
Design and Experimental Evaluation of Nighttime Traffic-Sign Detection and	
Classification Based on Low-Light Enhancement	
Shaodong Zhou*, Huijie Wang, Chang Nie, Hui Zhang, Sun ZhiFeng	
Global path planning for autonomous driving considering dynamic traffic impedance	

based on A* algorithm
Chuanqi Wang, Yuhan Ma*, siyu zhang, Hailong Zhang, Jiankun Peng
Application of Model Predictive Controller to Adaptive Cruise Control
Tianshu Wang*
A Novel Preview Tracking Control for Autonomous Vehicles under Delays and
Disturbances
Guoshun Cai, Xu Liwei, Ying Liu, Guodong Yin*
Robust Event-Triggered Control of Vehicular Platoon Under Disturbances and
Information Delay
Ying Liu, Yan Fengjun, Guoshun Cai, Guodong Yin*, Xu Liwei
Time Optimal Trajectory Optimization for Vertical Parking of Heavy Duty Vehicle
based on Chebyshev Pseudospectral Method
Mingzhuo Zhao, Guodong Yin*, Tong Shen, Yanjun Ren, Fanxun Wang, Yang Zhang
Analytical Stability Region Estimation and Validation of Distributed Driving Electric
Vehicle via SOSP
Tong Shen, Fanxun Wang, Yan Yongjun, Mingzhuo Zhao, Yanjun Ren, Guodong
Yin*
Torque Vector Compensation Strategy with Adaptive Model Predictive Control
Considering Steering Actuator Fault
Yanbo Lu, Jinhao Liang, Guodong Yin*, Jiwei Feng, Xu Liwei, Faan Wang
Lane-changing Trajectory Planning of Intelligent Electric Vehicle based on Stability
Region
Fanxun Wang, Tong Shen, Yanjun Ren, Guodong Yin*, Mingzhuo Zhao, Yanbo Lu
A Sliding Robust Algorithm based Controller Design for Direct Yaw Moment Control
System
Jiwei Feng, Guodong Yin*, Jinhao Liang, Yanbo Lu, Guoshun Cai, Xu Liwei
Motion Planning Framework for Autonomous Vehicle with Surrounding Vehicle
Motion Prediction in Highway Scenarios
Lei Wang, Guodong Yin*, Xu Liwei, Dong Fengwei, MingCheng Xu, Zhangcheng
He
Real-time adaptive weighted fusion of multi-radar's mutual guidance data1273
Huo Zengyuan, Qiu Demin*
Research on remote fault intelligent prediction system of ABS ring gear based on
Internet of Vehicles
Li Aijuan*, Chuanhu Niu, biao yang, Xin Huang