2023 7th CAA International **Conference on Vehicular Control** and Intelligence (CVCI 2023)

Changsha, China 27-29 October 2023

Pages 1-660



IEEE Catalog Number: CFP23U30-POD ISBN:

979-8-3503-4049-5

Copyright © 2023 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:
 CFP23U30-POD

 ISBN (Print-On-Demand):
 979-8-3503-4049-5

 ISBN (Online):
 979-8-3503-4048-8

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

A Rough Road Identification Method for the Automotive Headlight Leveling System	1
Wu Bin, Zhang Hang	1
Fault-Tolerant Lane-Keeping Control of Autonomous Vehicles Subject to	
Intermittent Malfunctions of Vision Sensors	6
Enhance Generality by Model-based Reinforcement Learning and Domain	
Randomization	12
Letian	
State-Space-Based Three-Phase Inverter Modeling under Nonlinear Load	18
BingSen Retor Foult Footune Futuretien Boood on Lovy frequency Compline Vibration	
Rotor Fault Feature Extraction Based on Low-frequency Sampling Vibration	24
Signal Chen Xirui, Liu Hui, Fang Yamin, Su Mengshuai, Xie Jiahao	24
A data association method based on pose refinement and mismatch rejection for	
HD map localization	29
Jiang Shang, Wang Yuan, Hu Zhishuo	
Feedforward Integrated Control of RWS and DYC for Vehicle Handling	
Performance Considering Nonlinear Tyre Forces and Actuators' Limitations	35
Guan Yihang, Zhou Hongliang, He Zhen, Miao Weiwei, Li Lun	
Dynamic Obstacle Avoidance Method for Road Vehicles Via Improved	
Artificial Potential Field	41
Xu Mingyang, Xu Chen, Qi Gengxin, Yue Ming, Zhao Xudong	
Logic-Based Motor-Battery Power Management Strategy for in-Wheel Motor	
Electric Vehicles	47
Mohamed Abdullah, Liu Shaoxun, Zhang Xi	
Low-Complexity Control for Uncertain Steer-by-Wire Systems With Input	
Nonlinearity and Prescribed Tracking Performance	54
Li Jiwu, Ma Bingxin, Li Hongjuan, Wang Yongfu	
Research on a simple nonlinear control strategy for novel vehicle semi-active	
suspension with cam-roller-spring mechanism	60
Wei Chunyu, Pang Xiangyun Simulation and Analysis of Influencing Factors on Fuel Injection Law of GDI	
Engine Injector	66
Hu Xiaowei, Wang Yongqi, Wu Yuqi, Cheng Yong	UC
Comfort-Oriented Control for Half-Car Semi-active Suspension Using a Model	
Predictive Approach	72
Zhao Huichao, Yuan Qing, Miao Weiwei, Zhou Hongliang, Chen Songlin, Yu	-
Zhen, Cao Zhenqian	
Global optimal State-of-Charge reference trajectory prediction and planning	
under traffic conditions for energy management of plug-in hybrid electric	
vehicles	78
Jin Yue, Yang Yixin, Chen Yuxuan, Meng Yizhen, Zhou Zhengyi, Li	
Jingzhong, Yang Lin	
I2F:An Adaptive Iterative and Inheritance Framework for Optimization-Based	
Trajectory Planning	84
Guo Yage, Bai Zhonghao, Li Wenxiang, Bai Fanghua	_
Multi-scale Depth-guided Instance Segmentation Based on Attention Mechanism	92
Han Yi, Cao Xu, Tian Wei, Yu Xianwang	0.0
BPNN Based Energy Management Strategy for Pure Electric Vehicles	98

Zhang Shilong, Wang Fei, Lu Henghui, Yang Shen	
An Adaptive Feature Extraction Visual SLAM Method for Autonomous Driving.	104
Zhao Zhiwei, Li Ying, Yang Chao, Wang Weida, Xu Bin	
A BEV Scene Classification Method based on Historical Location Points and	
Unsupervised Learning	110
Lu Jiayi, Yang Shichun, Zhang Boao, Cao Yaoguang	
Attacks against Traffic Sign Detection for Autonomous Driving	116
Xu Feiyang, Li Ying, Yang Chao, Wang Weida, Xu Bin	
Research on Trajectory Tracking and Stability of Four-Wheel Steering	
Distributed Drive Vehicle	122
Li Xuemei, He Zhiwei, Deng Zhijun, Chang Hao	
Research on the Tracing Method of Vehicle Speedometer Based on Standard	
Speed System	128
Wu Jing	120
Economic Adaptive Cruise Control for Electric Vehicles Based on Multi-step	
Tree Backtracking Algorithm in Q-Learning Framework	132
	132
Chen Honglei, Qiu Jianyun, Zhao Junzhe, Wang Bo, Chen Huiqin, Chen Chugiag Zhan Viviag Zhai Chuniia	
Chuqiao, Zhan Yixiao, Zhai Chunjie	
Robust Optimal Adaptive Cruise Control Based on ADP for Intelligent Vehicles	120
under Bounded Disturbances	138
Zhan Yixiao, Zhai Chunjie, Long Xiang, Wang Bo, Chen Huiqin, Chen	
Chuqiao	
Point Cloud Map creation based on data Fusion of Lidar and IMU	144
Zhao Yibing, Jiayin Yang, Liang Yuhe, Wang Weiqi, Guo Lie	
Driver and Vehicle Cooperative Control System Based on Active Rear Steering	
and Driect Yaw Moment Control	150
Chen Jingwu, Yan Zhoudong, Chen Xinbo	
An Adaptive Lane-Changing Strategy for Multi-CAV with Complex Platoon	
Geometric	156
Wang Jinlei, Yuan Xiaofang, Xiao Xianghui	
A Novel PEM Fuel Cell Degradation Prediction Method Based On Sparrow	
Search Algorithm and Long Short-Term Memory	162
Li Haolong, Chen Qihong, Zhang Liyan, Xie Liang	
Observation-oriented Water Distribution Model for Proton Exchange Membrane	
Fuel Cell	166
Li Jisen, Chen Qihong, Zhang Liyan, Xie Liang	100
Just-In-Time Learning Based Adaptive Speed Control for Marine Diesel Engine	171
Huang Weisen, Zhang Jian, Liu Rui, Li Huang, Liu Long	1/1
Model predictive torque control of permanent magnet synchronous motor based	
on optimized sliding mode observer	177
	1//
Li Jichao, Li Jian, Yao Runyun, Zhang Binbin, Chen Chaobo	
Feature Scan Context aided Lidar-IMU Simultaneously Localization and	100
Mapping	182
Wen Yan, Han Lijin, Li Ying, Lin Sihao, Nie Shida, Jiang Xiaohui	
Research on Electric Pneumatic Brake System Controller Test System for	
Tractor Semi-Trailer	188
Xu Jun, Chen Zhihui, Bao Hanwei, Li Liangyu, Li Gangyan	
Improve Handling Stability for Path Tracking of a 4WIS Vehicle Based on	
Sliding-mode Method	193
Li Jiaqi, Ma Yuan, Han Zhengyang, Ji Xuewu, Liu Yahui	
Fixed-Time Consensus Control of High-Speed Trains with Event-Triggered	
Protocol	199
Zhao Ke, An ZhenHui, Zhang Tong	
Projection Anti-Distortion Method Based on Optical Field Model	205

Wang Xiangyang, Jia Zhihuan, He Fu, Gao Jinwu	
A Finite Frequency Domain State Feedback H∞ Controller for Yaw Stabilization	
of Four-Wheel Independent Steering Autonomous Vehicles	212
Ma Yuan, Li Jiaqi, Ji Xuewu, Liu Yahui	
Air-Fuel Ratio Control of SI Engine Based on Feedback Linearization	218
Liu Xin, Sun Shaolong, Li Xinfang, Gao Jinwu	
A Mandatory Lane Changing Integrated Decision Making and Planning Method	
Using Game Theory for Autonomous Vehicle	224
Li Wenbo, Wang Weida, Yang Chao, Qie Tianqi, Liu Wenjie, Zuo Yinchu	
Active Stability Augmentation Control of eVTOL Vehicle Under Lateral	
Random Airflow Interference	232
Meng Xiaoteng, Wang Weida, Liu Guosheng, Cheng Jiankang, Liu Wenjie,	
Ma Jiefei, Zhao Jing	
Improved NSGA-III algorithm for solving multi-objective flexible job shop	
scheduling problem	239
He Yuqiao, Liu Li, Mao Jianxu, Liao ZeYu	
Scalable Tree Goal Prediction Based on Decision Interactions	245
Li Linhui, Su Jiazheng, Lian Jing	
Reinforcement Learning-Based Trajectory Planning and Tracking Control for	
Connected Vehicles Subject to Communication Delay	251
Li Jinxi, Wen Shixi, Zhao Yuan, Li Chi	231
Non-uniform Image Down-sampling for Efficient Dense Perception	257
Huang Yuyao, Tian Wei, Xiong Lu, Chen Kai	231
Research on Estimation Algorithm of Adhesion Coefficient	263
Qiao Xinghan, Lu Yanhui	203
Maneuverability Control Through Rear Wheel Steering with Time-Varying	
Vehicle Parameters	269
Liu Ming, Leng Bo, Tan Langtao, Huang Dong, Chen Guofang, Zhang	20)
Yuanjian, Xiong Lu	
Adaptive Sliding Mode Hierarchical Control for Nonlinear Hydraulic Suspension	
System with Prescribed Performance	275
Zhang Jinhe, Ding Fei, Liu Jie, Wang Ningsha	213
Multimodal Features Fusion for Driver Fatigue Detection Based on CNN-GTN	
Learning	281
Zhao Shuaijie, Du Aimin, Han Yeyang, Yi Jiwei, Zhu Zhongpan	201
Bottom-Up Human Pose Estimation Based on Multiple Anchor Points	
Regression	287
Tan Dayi, Cheng Xinran, Tian Wei	201
A Real-Time Large Animal Detection Lightweight Network for Autonomous	
Driving on Highways	293
Fengchen Wei, William Wang	293
	299
A Resilient Control Strategy in Connected Vehicles under Actuator Attacks	299
Li Kai, Wang Yulei, Chen Hong, Gao Jinwu	
Lateral and longitudinal coupling control of autonomous vehicles using adaptive	207
integral terminal super-twisting sliding mode control	307
Lu Linying, Wang Wei, Zhang Ting, Jiao Xiaohong	
Energy management optimization control with the consideration of the driving	212
style for connected hybrid electric vehicles in mixed driving scenarios	313
Tang Wenbin, He Jingjing, Wang Zhong, Jiao Xiaohong	
Time Series Prediction Integrated RNN-DRL for Energy-Emission Management	210
in HEVs	319
Luan Junzhi, Guo Lulu, Ma Baolin, Chen Hong	
Deep reinforcement learning based hierarchical eco-driving strategy for a series-	22.
parallel hybrid electric truck	325

Xue Rui, Zhao Yahui, Wang Zhong, Wang Zimeng, Zhang Yahui	
Longitudinal Speed Estimation of Multi-axle Distributed Drive Vehicle Based on	
Federal Kalman Filter	331
Wu Dongmei, Du Kangqi, Liu Huan, Liu Xing	
A Simple Approach for Online Yaw Rate Response Adjustment in Steer-by-Wire	
Vehicles	338
Huang Wenhao, Zhao Liang, Tian Lei, Chen Hui	
Joint DMPC and PID Controller for Vehicle Platoon Based on PreScan and	
CarSim	344
Xiang Jie, Li Yongfu, Huang Longwang, Huang Xin, Wang Xingquan	
An Adaptive Driving Beam System based on Digital Light Processing	350
Hou Guanzhu, Han Hongliang, Li Junru	
A Multi-sensor Data Fusion Method for Vehicles Based on Improved GNN	
Association	356
Ge Chunhao, Wang Yuhong	
An Adaptive Driving Beam System with Integrated Automatic Lamp Control	
Function	362
Zhang Hang, Zheng Hongli, Deng Yida	002
An Optimized Calculating Method for the Vehicle Headlight Automatic	
Leveling System	367
Guan Zhongxu, Yang Huikai, Shi Zhiwei	507
Speed Control of Permanent Magnet Synchronous Motor Based on Improved	
Active Disturbance Rejection Control	371
Zhao Xuanhu, Han Lijin, Liu Hui, Nie Shida, Yang Haiyang, Xie Jingshuo	3/1
A control method based on optimal flow rate for fuel cell cogeneration waste	
heat utilization system with auxiliary heat transfer loop	377
Zhang Xiyuan, Xu Liangfei, Hu Zunyan, Lu Languang, Liu Jian, Wang	311
Zhongqi, Li Jianqiu, Minggao Ouyang	
Driving style analysis in car-following scenarios based on semantic analysis	
method	383
Wei Yiying, Jia BingMing, Xiao Xiao, Yao Bowei	303
Design Of Dual Coil Redundancy Safety Scheme Of The Automatic Pressure	
Regulating Valve in the Electronically Controlled Pneumatic Brake Systems in	
Commercial Vehicles	389
	307
Li Gangyan, Hu Jian, Bao Hanwei, Yi Cheng, Wei Xiaoxu	
Efficiency Optimization Control of PMSM in Electric Vehicle-A Comparative	205
Study	395
Shen Yongpeng, Zhou Bo, Yuan Xiaofang, Zhang Xizheng	401
Pedestrian Pose Estimation for Campus Unmanned Delivery Vehicles	401
Jiang Yuzhu, Li Ying, Yang Chao, Wang Weida, Xu Bin	
Linearization and Robust Stability Analysis of Two Degree-of-Freedom Vehicle	107
Dynamics Model	407
Ma Zehui, Shi Shuming, Liu Xiaojiao, Zhang Boshi, Lin Nan	
Study on autonomous vehicles path tracking control based on kinematic	412
decoupling method	413
Zheng Lizhe, Pang Hui, Wang Lei, He ZhaoNian	410
Impact of Visual Encoding on Automation Transparency in Drone Interface	419
Huang Hao, Zhang Qixiang, Geng Keke, Yin Guodong	
Co-optimization of intelligent connected fuel cell vehicle powertrain based on	10.5
networked scenario	425
Yu Hanzhengnan, Chang Liang, Liu Yu, Zhang Baodi	
Adaptive optimization algorithm for fuzzy control of fuel cell range extender	401
vehicles*	431
Zheng Yuehan, Yang Zhenyu, Li Xinhao, Chang Liang, Zhang Baodi	

Dynamic Simulation of a Fuel Cell Bus: Investigating Inner States of Water	
Content, and Water Saturation in Different Layers	43
Ursus Schorling, Xu Liangfei, Roozbeh Golchian Khabaz, Hu Zunyan, Li	
Jianqiu, Minggao Ouyang	
Integrated optimization of kinematic and air-conditioning states for eco-driving	
and eco-cooling	44
Zhang Chuntao, Ning Changjiu, Ma Heyang, Sun Chao	
Model of Conflict at Intersection Based on Evolutionary Game	44
Zhu GuanYu, Wang Yuepeng, Wang Jizhe, Ding Qinglin, Zhang Yahui	
An Automated Parking Trajectory Planning Method Based on Safe Parking	
Corridors	45
Liu Honghui, Xie Xiaomei, Wei Mingzhu	
Research on active obstacle avoidance lateral control of intelligent vehicles	46
Meng Huan, Li Gang, Peng Kang	
Research on FSAC trajectory tracking control based on optimized BP neural	
network algorithm	46
Zhang Zhiqiang, Li Gang, Chen Zhixin, Zhang Xing	
Advances in Decision-Making for Autonomous Vehicles: A Review	47
Zhou Yuwei, Hu Jin, Yang Yuhua, Gao Hang, Yang Fan	
Research on Path Planning of Intelligent Vehicle Expressway	47
Peng Kang, Li Gang, Wang Hao, Li Jiqing, Meng Huan	
Shift Control of Large Order Planetary Transmission for Electric Driven Tracked	
Vehicles	48
Hou Yunlong, Gai Jiangtao, Yi Yuan, Li Xunming, Zeng Gen	
Path Tracking and Direct Yaw Moment Coordinated Control for Autonomous	
Vehicles Considering Uncertainties and Disturbances	49
Zhao Shuen, Zhao Maojie, Chen Wenbin	
Motion Planning and Control of Wheel-legged Vehicle Compound Jumping	49
Xie Jingshuo, Han Lijin, Zhao Xuanhu, Liu Hui	
Distributed Vehicle Longitudinal and Lateral Stability Coordinated Control for	
High-speed Obstacle Avoidance	50
Niu Rui, Zhang Wei, Liu Jiayong, Chen Guoying	
Unsignalized Intersection Passing Algorithm for Intelligent Connected Vehicles	
with Spring-Mass-Damper-Clutch System	50
Zhang Kuoran, Feng Weiqi, Yang Likang	
Research on Dynamic Obstacle Avoidance and Path Planning Methods in	
Emergency Scenarios	51
Lv Ying, Qi Xu, Dong Xiaoyu, Wang Xinyu, Chen Guoying, Yao Jun	
Backup Control of Vehicle Braking System based on Electronic Parking Brake	
Actuator	52
Jing Houhua, Liu Shihao, Lin Qingan, Guan Yihang	
Cooperative Control Design for Modular vehicles: Platoon Pattern and	
Biomimetic Group Pattern	52
Zhao Xiaomin, Hu Shanghong, Cui Zhengrong, Dong Fangfang	
Sliding Mode Based Permanent Magnet Synchronous Motor MTPA Control	
System	53
Zhang Yilei, Zhang Niaona, Zhang Ye, Sun Danyao	
Semantic Segmentation Research of Motion Blurred Images by Event Camera	53
Liu Xiangyong, Yin Fnegfeng, Jiang Wei, Fan Siwen	
Optimal Control Design for Personalized Lane-Change Operation of Inteligent	
Vehicle	54
Wang Xiang, Zhang Jiangyan	
Parallel Distributed Cooperative Control of Multiple Vehicles with Low	
Communication Traffic	54

Ma Jie, Tang Sichao, Gao Feng, Yuan Liping	
Drift Control of Autonomous Vehicle Under Extreme Condition Based on	
Neural Network Tire Model	555
Dai Lingfeng, Lu Shaobo, Xie Wenke, Ru Jia	
Enhanced Ultra Wide Band Indoor Localization in Non Line of Sight	
Environments Using Graph Attention Networks	561
Zheng HongZhou, Meng Fei, Han Jinru	
Reinforcement Learning-based Autonomous Parking with Expert Demonstration	
S	567
Wu Yao, Wang Lucai, Lu Xiao, Wu Yue, Zhang Haojun	
Integrated Optimization of Battery Sizing and Control Parameter for a Hybrid	
Amphibious Vehicle	573
Wang Xu, Huang Ying, Wang Jian, Luo Chengliang	
An effecient braking energy recovery strategy based on differential game for	
hybrid electric truck considering electromechanical thermal dynamic	579
Sun Tonglin, Yang Chao, Zhang Mingjun, Wang Weida	
Reinforcement Learning-Based On-Ramp Merging Decision-Making for	
Autonomous Vehicles	585
Ma Ning, Zhang Ying, Cai Wangze, Qi Haoran, Zhang Tianrong, Fu Chenxiu	303
Deep Learning-Based Traffic Signs Recognition for Intelligent Vehicles in	
Extreme Scenarios	593
Zhao Tingyi, Zhang Ying, Cai Wangze, Zhang Tianrong, Qi Haoran, Feng	373
Yun	
Working conditions analysis and performance degradation estimation of fuel cell	
buses based on real road data	600
	000
Tao Hui, Wang Zhina, Xu Liangfei, Hu Zunyan, Li Jianqiu, Ouyang Minggao	
Continual Reinforcement Learning for Autonomous Driving with Application on	(0)
Velocity Control under Various Environment	606
Wei Dengwei, Xing Jiaming, Yang Shuo, Lu Yukun, Huang Yanjun	
Variable search domain improved A-star algorithm for AMR in warehouse	c1.4
environments	614
Li Wei, Cong Yongzheng, Du Haibo, Zhu Wenwu	
A Novel Approach for Tire-road Friction Coefficient Estimation Based on	620
Limited Memory Random Weighted Unscented Kalman Filter	620
Hu Jingyu, Xu Liwei, Bai Shuo, Wang Yan, Ding Haonan, Yin Guodong	
Motion Query-based Multimodal Vehicle Trajectory Prediction for Autonomous	
Driving	627
Jiang Hao, Hu Chuan, Zhao Baixuan, Lin Yiwei, Niu Yixun, Hu Shuang,	
Zhang Xi	
Anchor-based Multi-modal Transformer Network for Pedestrian Trajectory and	
Intention Prediction	633
Lin Yiwei, Hu Chuan, Zhao Baixuan, Jiang Hao, Shan Yonghang, Ding	
Taojun, Zhang Xi	
CMAFusion: Cross modal attention based end-to-end infrared and visible image	
fusion network	639
Liu Zhichao, Geng Keke, Cheng Xiaolong, Shen Kaichuan, Li Ang, Cheng	
Shicong	
Self-adaptive current charging strategy considering the variation of internal	
resistance of Li-ion battery	645
Li Yi, Zhang Liyan	
A machine learning-based method for rough roads recognition in ALS system	651
Song Chao, Wang Xueliang, Yan Xinxu, Liu Zhiqi	
A Feedforward-Feedback Coordinated Control-based Actuator Error	
Compensation Strategy	655

Zhang Mingcheng, Yin Zhishuai, Gao Ning, Zhao Xiaobin	
A Mixture Cauchy Kernel Based Estimation Method for INS/GNSS under	
GNSS-Challenged Environment	661
Gao Ming, Wang Guangwei, Lu Yang, Zhang Hailun, Wang Jianqiang	
Study on Verification and Global evaluation of Takeover Behavior Modes	667
Chen Haolin, Zhao Xiaohua, Li Zhenlong, Fu Qiang, Wang Qiuhong, Zhao	
Libo	
A Vehicle Torque Distribution Method Combining Nonlinear Control and	
•	673
Xiao Xiangming, Luo Fengshan, Zhang Yutan, Nie Qi, Liu Yongchen, Zhang	
Jiazhi	
An Online Fault Diagnosis Method Based on Multiscale Permutation Entropy for	
	679
Ma Lubin, Pang Qitian, Li Yichao, Liu Xuefeng, Duan Bin, Zhang Chenghui	0,7
Nonlinear Tyre Inverse Model for 4WIS/4WID Vehicle Trajectory Tracking	
·	685
Yu Yunchang, Tian Guangyu, Ji Wenfei	003
Research on the positive regulation of abnormal emotions combine music and	
*	691
Tang Bangbei, Luo Bingjie, Chen Shengnan, Zhu MingXin, Hu Zhian, He	091
Chao, Li Yan, Chen Hao Fast Fatimation of State of Health for Patimal Lithium ion Patteries Passed on	
Fast Estimation of State of Health for Retired Lithium-ion Batteries Based on	607
	697
Zou Zhanxin, Li Yichao, Liu Xuefeng, Zhang Ze, Duan Bin, Zhang Chenghui	
A nonlinear explicit Model Predictive Controller for an Electro-hydraulic	702
	703
Chu Liang, Li Jinwei, Liu Ming, Wang Yilin, Jiang Zewei, Guo Chong	
Pressure tracking of brake-by-wire system with parameters-predicted	
	711
He Yunfeng, He Lin, Zhang Xinyu, Wang Mingwei, Fang Hongxun, Li	
Houxiang	
Reward Machine Reinforcement Learning for Autonomous Highway Driving: A	
•	716
Cui Zhihao, Wang Yulei, Bian Ning, Chen Hong	
A Novel Comprehensive Scheme for Vehicle State Estimation Using Strong	
	722
Bai Shuo, Hu Jingyu, Shen Lilin, Wu Zhongtao, Ding Haonan, Yin Guodong	
Nonlinear Model Predictive Controller Based on Data and Mechanism Hybrid	
Model for Autonomous Vehicle Path Tracking Control	729
Zhang Xu, Xu Fang, Zhang Zhiming, Guo Zhongyi, Zhao Haiyan, Guo Lulu	
Tightly-coupled Lidar-Visual-Inertial SLAM considering 3D-2D Line	
Correspondences	735
Ding WenZhe, Wang Yafei, Zhang Ruitao, Li Zexing, Wu Mingyu	
Energy-Optimal Adaptive Cruise Control for Electric Vehicles Based on Model	
	741
Liu Yuxuan, He Jialin, Cai Jianjun, Wu Yitao, Li Jie, Liu Yonggang	
Enhanced Vehicle Sideslip Angle Estimation through Multi-Source Information	
1 0	747
Xu Gaoxiang, Qiao Yiran, Chen Xinbo, Peng Ting, Zhao Chunlai	,
Human-Road Dual Trust Mechanism in Adaptive Distributed Shared Control	
<u>-</u>	753
ê ê	133
He Xu, Li Ji, Zhou Quan, Xu Hongming	133
He Xu, Li Ji, Zhou Quan, Xu Hongming Electro-Hydrostatic actuator active disturbance rejection control based on	759

Liu Zishuo, Zhao Xuanhu, Liu Hui, Han Lijin, Xie Jingshuo, Nie Shida	
Vehicle Trajectory Prediction with Attention Based on Convolutional Social	
Pooling	765
Li Guangxu, Zhao Haiyan, Li Cheng, Chen Hong	
Study on Anti-rollover Control of Vehicles with Energy Regenerative	
Suspension	771
Cao Shilong, Jin Zhilin	
A Motion Planning Framework with Integrating Transformer-based Trajectory	
Prediction on Highway	776
Cheng Liang, Tang Xiaolin, Yang Kai, Li Cheng, Yan Min, Li Yue	
Effect of cracks in gas diffusion layer on liquid water transport of proton	
exchange membrane fuel cells by laser perforation	782
Zhao Guanlei, Ouyang Minggao, Yu Boyang, Li Jianqiu, Xu Liangfei, Hu	
Zunyan	
A Novel State Estimation Algorithm for Wheel-legged Multi-mode Vehicle	788
Zhou Yunping, Zhu Zhewei, Xu Mingfan, Bai Guangyu, Qin Yechen	
Model Reference Adaptive Vibration Control For Wheeled-legged Multi-mode	
Vehicle	794
Zhu Zhewei, Zhou Yunping, Bai Guangyu, Guo Mengyang, Qin Yechen	
Multi-feature fusion based battery health estimation using bidirectional long	
short-term memory networks	800
Yang Shenglong, Cheng Meihong, Zhao Guangcai, Xu Zhiyong, Li	
Changlong, Duan Bin	
Multi-Object Tracking Based on Semantic Information for Autonomous Vehicle.	806
Ding Pengbo, Geng Keke, Yin Guodong, Cheng Xiaolong, Wang Jinhu, Sun	
Yuxiao	
Global Speed Planning Algorithm for Intelligent Connected Buses Based on	
DDPG with Adaptability to Vehicle Mass	811
Song Kang, Zhang Yuchuan, Lei Yuyang, Lv Xianyong, Ding Zhanming,	
Chen Xinye, Xie Hui	
Research on Off-road Environment Perception Based on Multi-sensor Fusion	818
Lian Jing, Wang Yudi, Li Linhui, Sui Duo, Ren Weiwei, Wang Ting	
Robust Steering Angle Tracking Control for Steer-by-wire System	824
Liu He, Liu Yahui, Ji Xuewu, Yao Shengbo	
A real-time cooperative driving framework for un-signalized intersection	830
Fang Shiyu, Hang Peng, Sun Jian	
A Convolutional Neural Network Method for State of Health Estimation of	
Lithium-ion Batteries Based on Partial Charging Curves	836
Zhao Hongqian, Chen Zheng, Shu Xing, Shen Jiangwei, Liu Yu, Liu	
Yonggang	
MPC-based Docking Control between UUV and Mobile Mothership	841
Gong Peng, Zhang Hao, Pan Guangshan, Zhang DongJing, Xu Fengwei, Yan	
Zheping	
Multi-sensor Calibration System for Mobile Robots	846
Wu Wei, Liu Chang, Cao Wenhan, Chen Chao, Li Hongbo, Li Shengbo	
A data-driven control for vehicle lateral stability in snow and ice-rutted	
conditions under aperiodic sampling	853
Zhao Xu, Guo Jingzheng, Wang Lianbing, Guo Hongyan, Liu Zhenze, Zhang	
Yiming	
PCC Energy-saving Optimization Based on Historical Driving Data	
Identification of Energy Consumption Model	859
Xu Zhenghao, Sun Kai, Gao Yuan, Hu Jia, Gao Bingzhao, Hong Jinlong	-
Research on Control Strategy of Assist Motor for Electronic Hydraulic Braking	
System	865
-	

Li Pengyuan, Wu Jian, Han Wentong, Wang Shuai, Cui Guanjie, Liu Xin	
Semantic Segmentation-Inspired Prediction of Pavement Adhesion Coefficient	870
Guo Hongyan, Wan Juncheng, Meng Qingyu, Liu Yanran	
Capacity multistage degradation analysis and knee point prediction method of	
Lithium-ion battery	876
Wang Teng, Zhu Yuhao, Zhao Wenyuan, Shang Yunlong	
Research on Human-machine Lateral Cooperative Control of Co-driving Vehicle	
Considering Driver Fatigue Characteristics	881
Liu Xin, Chen Zhengfeng, Cui Guanjie, Tang Xinyu, Li Pengyuan, Wu Jian	005
Vehicle state parameter estimation based on improved adaptive observer	887
Wang Lianbing, Zhao Xu, Wan Juncheng, Guo Hongyan, Zhang Yiming	002
Modeling and Verification of Fuel Cell Commercial Vehicle Powertrain	893
Lyu Renzhi, Wang Zhenpo, Zhang Zhaosheng Model Reduction by Moment Matching for Linear Coupled Systems	899
Model Reduction by Moment Matching for Linear Coupled Systems	099
Zhang Huimin, Umair Zulfiqar, Huang Zhongyi Designing External Displays for Safe AV-HDV Interactions: Conveying	
Scenarios Decisions of Intelligent Cockpit	904
Liu Yujing, Li Wenbo, Wu Chao, Wu Yingzhang, Cui Yaodong, Guo Gang	504
A High-Frequency and Large-Current Equalizer for Large-Scale Battery Packs	912
Liu Shiquan, Wang Yue, Zhao Wenyuan, Shang Yunlong	712
Trajectory Tracking Control Strategy Based on Model-Free Adaptive Sliding	
Mode Control Approach for Robot Manipulator	917
Zhu Suyu, Li Mingjun, Hu Dean	,
Autonomous Vehicle Path Tracking Control based on Adaptive Dynamic	
Programming	925
Guo Hongyan, Li Guangyao, Liu Jun, Tan Zhongqiu, Yu Dachuan, Zhang	
Yiming	
Personalized Collision Avoidance Trajectory Planning Considering Driving	
Habits	931
Zhang Han, Xu Ke, Zhao Wanzhong	
Data-driven Modelling for EV Battery State of Health Estimation using SFS-	
PCA Learning	937
Abdul Azis Abdillah, Zhang Cetengfei, Zeyu Sun, Ji Li, Xu Hongming, Zhou	
Quan	
Research on Fast On-line Calibration Algorithm for a Two-Stroke Kerosene	
Engine	943
Liang Siqiang, Wang Jian, Wang Xu, Huang Ying	
Study on the Impacts of Hazardous Behaviors on Autonomous Vehicle Collision	0.40
Rates Based on Humanoid Scenario Generation in CARLA	949
Mo Longfei, Hua Min, Sun Hongyu, Xu Hongming, Shuai Bin, Zhou Quan	
Deep reinforcement learning based eco-driving framework for electric vehicles	055
integrated with air-conditioning control	955
Fast Response Finite Control Set Model Predictive Control for High-Frequency	
Link Matrix Converter With Virtual Space Vectors	961
Xu BaoLu, Li Fei, Song Jinqiu, Duan Bin, Ding Wenlong, Feng Dexiang	901
Driver-Automation Shared Control for Vehicle Lane Keeping Systems via	
Steering Torque Estimation	967
Li Wenfeng, Zhang Yu, Zhao Jing, Xie Zhengchao, Pak Kin Wong	701
Research on lane line multimodal fusion completion algorithm based on	
intersection scene recognition and road rules	973
Liu Mengge, Xie Hui, Song Kang, Jiang Zihan	713
Integrated Control model of ESP and AFS for Semi-trailer Train	979
Zhang Kaimei, Shi Dehua, Wang Shaohua, Yin Chunfang	,,,

Automated Lane-change with Evolution Capability	985
Lei Mingyue, Hu Jia, Wang Haoran	
A heuristic trajectory planning method considering long-short term prediction	
planning collaboration	989
Duan Boyu, Wang Yafei, Liu Xulei, Zhang Yichen, Wang Shuai	
Fine-tuning Transfer Learning for Knock Intensity Modeling of an Engine	
Fuelled with High Octane Number Gasoline	995
Tan Guikun, Li Ji, Li Yanfei, Zemin Eitan Liu, Xu Lubing, Xu Hongming,	
Shuai Shijin	
Lane change trajectory planning method for intelligent vehicles considering	
surrounding risk	1001
Liu Ke, Wang Honglin, Fu Yao, Liu HaoRan	
Human-machine collaborative model predictive control of lane departure based	
on estimated moments and unknown input observers of vehicle dynamics	1007
Zheng Jinzhao, Pan Juntao, Lu Jiyun, Lai Weilong	
Research on Speed Programming Method for Variable Curvature Curves	
Considering Pavement Adhesion Coefficient	1013
Qi Qinghua, Zeng Wei, Cui Jinrong, Dai Jiayu, Deng Mingxing	1010
Vehicle path planning based on improved hazardous potential energy field	1019
Li Shiya, Zhang Xizheng, Zhang Han, Lu Zhangyu, Qin Wei, Hou Yingjun	1017
Human-like Eco-driving Strategy of Electric Vehicle Considering Vehicle-to-	
everything Communication	1023
Jiang Yangye, Shen Yijie, Wang Jiachen, Wei Jinyuan, Zhang Jiajie, Jiang	1023
Xin, Li Daofei	
Research on Longitudinal Functional Safety Analysis of Traffic Jam Assist	
System	1029
He Lei, Ye Feng, Chen Junyi, Li Haixia, Di Zhongju	1029
Research on LQR control of active suspension based on Improved Grey Wolf	
	1033
Optimization algorithm	1033
Zhuo Zichang, Zhang Niaona, Xu Haochen, Xie Juncheng	
Safe reinforcement learning for autonomous vehicles to make lane-change	1000
decisions: Constraint based on Incomplete Information Game Theory	1039
Yang Ruolin, Li Zhuoren, Leng Bo, Xiong Lu	
A Review on AI Algorithms for Energy Management in E-Mobility Services	1045
Yan Sen, Maqsood Shah, Li Ji, Noel O'Connor, Liu Mingming	
FEN-DQN: An End-to-End Autonomous Driving Framework Based on	
Reinforcement Learning with Explicit Affordance	1053
Bai Yulong, Du Jiatong, Zhang Yuanjian, Huang Yanjun	
A Design of Intelligent Tire Prototype Based on Multiple Accelerometers	1059
Ji Wenfei, Yu Yunchang, Li Runfeng, Tian Guangyu, Lu Ziwang	
A 1-D 2-phase control-oriented mass transfer model of PEM fuel cells	1065
Raphael Gass, Li Zhongliang	
Estimating NOx Sensor Ammonia Cross-Sensitivity Factor Using a Data-Driven	
Approach in SCR Systems	1070
Wang Ning, Gong Xun, Hu Yunfeng, Sun Yao	
Pedestrian Trajectory Prediction for Autonomous Vehicle by Integrating IA-	
LSTM and MSFM	1076
Chen Hao, Wei Chongfeng, Liu Yinhua, Chuan Hu, Lu Jushou, Zhang Xi	
Design of a 4-Wheel Independent Steer and 4-Wheel Independent Drive Racing	
Vehicle	1082
Sun Yiwen, Li Runfeng, Lu Ziwang, Tian Guangyu	
Design of Reconfigurable Steering Feel for Steer-by-Wire system Based on	
Dynamic Load Observation	1088
Wang Chongyang, Yan Liang, Wu Xiaodong, Kong Zhuo	

PEMFC Semi-mechanical Degradation Model Based on Polarisation Curve	400=
Testing	1095
Hu Zeyu, Zhang Liyan, Chen Qihong, Zhou Ze	
Energy Optimization of Electric Vehicle Powertrain and Air Conditioning System under V2X	1100
Li Tao, Cui Wei, Du Yi, Cui Naxin	
Fast State of Health Estiamtion for Lithium-ion Batteries Based on Partial	
Charging Time	1106
Lin Junhao, Jiang Mengmeng, Zhang Liyong, Yang Le, Zhou Haini, Wang	
Ruigi AdaTD: An Adantiya Traingtony Planning Method for Intelligent Vehicles in	
AdaTP: An Adaptive Trajectory Planning Method for Intelligent Vehicles in Cooperative Driving Based on Reinforcement Learning	1111
Li Zhenglin, Li Guofa, Gao Feng	1111
Effect of trailer suspension damping tuning on rearward amplification of car-	
trailer combinations	1117
Wang Zhiyu, Zhang Ning, Zhang Qianchen, Jiang Shuyun	111/
Vehicle Path Replanning For Obstacle Avoidance Considering Driving Styles Yu Hongxuan, Liu Qifang, Chen Haowen, Yu Shuyou, Chen Hong	1123
Adaptive Sliding Mode Control with an Extended Disturbance Observer for a	
Quadcopter Unmanned Aerial Vehicle: A Finite-Time Convergent Approach	1129
Siffat Ullah Khan, Gao Hongbo, Xu Xiangrong, Feng Ce, Alam Nasir, Zhao	-
Hongfei	
Robust Fuzzy Cooperative Steering Control for Lateral Stability of Intelligent	
Vehicles Subject to External Disturbances and Actuator Faults	1135
Wang Xiaowei, Liu Taiyou, Li Wenfeng, Zhang Xiang, Pak Kin Wong, Xie	
Zhengchao, Zhao Jing	
A Benchmark for SOTIF of Lane Marking Detection Algorithms of Autonomous	
Vehicles	1141
He Haohui, Wang Cheng, Zhang Yuxin, Zhang Miao	
Integrated Motion Control Method Based on Stability Constraints for Distributed	
Chassis by Wire	1147
Chen Guoying, Bi Chenxiao, Du Xiaoxia, Qiao Bin	
Obstacle avoidance path planning for intelligent vehicles based on improved	1150
RRT algorithm	1153
Zhou Ziyao, Kong Huifang, Zhang Qian, Wang Chenshun	
Nonlinear Model Predictive Path-Following Control with Steering Lag	1150
Compensation for Autonomous Vehicles	1159
Accelerating Model Predictive Control with Neural Network Optimizer	1165
Shi Wentong, Luo Xi, Hong Jinlong, Zhao Chunlai, Gao Bingzhao, Chen	1105
Hong	
Integral Backstepping Control of Sinusoidal Ripple Current Charge for Battery	
Chargers	1172
Zhao Yujiao, Feng Dexiang, Zhong Zhaowen, Ding Wenlong, Duan Bin,	
Zhang Chenghui	
Lane-keeping Control of Autonomous Vehicles Using Reinforcement Learning	
and Predictive Safety Filter	1178
Cheng Yifan, Wang Heng, Chu Hongqing, Yu Liyang, Gao Bingzhao, Chen	
Hong	
Optimal Torque Distribution Strategy for Electric Vehicles with Electro-	
Hydraulic Compound Braking System	1184
Jiang Weihai, Zheng Runze, Zhang Guohui, Zhu Zhongwen, Wang Weizhi, Li	
Cheng, Tong Qiang	4400
Vision-based Autonomous Tracking and Landing Method for UAV on a	1190

Dynamic Platform	
Shen Kaichuan, Geng Keke, Ma Tianxiao, Cheng Xiaolong, Liu Zhichao, Li	
Ang	
A Mode-Switching Soot Load Observer for Automotive Particulate Filters	1196
Lin Xiangxue, Hu Yunfeng, Jiang Linlin, Gong Xun, Sun Yao	
Design of data-driven model predictive controller for vehicle lateral stability	1202
control	1203
Lu Xiaohui, Li Jiachun, Li Detao, Li Shaosong	1209
Supervisory Control Strategy for AVs under Unexpected Emergency Conditions. Wang Lingfei, Chen Kai, Yang Lu, Meng Qingwen	1209
Pedstrian Trajectory Prediction Based on LSTM	1216
Li Shaosong, Jiang Junchen, Zhou Qingbin, Lu Xiaohui	1210
NMPC-based Path Tracking Control Strategy for 4WID Autonomous Vehicle	
Considering Handling Stability Under Extreme Conditions	1221
Zhu Guozhu, Jie Hao, Hong Weirong	1221
Template Reinforcement Learning for Automated Driving with Scenario	
Switching Inference Labeling	1227
Lu Songxin, Yang Bo, Yang Zhe, Pei Xiaofei	
RESEARCH ON THE IMPACT OF INTELLIGENT COCKPIT ON	
AUTOMOBILE CONSUMERS' PURCHASE INTENTION	1233
Wu Chao, Li Kun, Yang Zhicheng, Wang Lixin, Wang Mei, Lv Jie	
P3C: A Real-World Scenario Dataset Generating Pipeline for Learning-Based	
Planning and Control Algorithm	1238
He Yingdong, Lin Penghong, Qian Zhang	
Adopting a Digital Twin Framework for Autonomous Machine Operation at	
Construction Sites	1243
Philip Wickberg, Anas Fattouh, Sara Afshar, Markus Bohlin	
Analysis of Hybrid Three-Level Dual Active Bridge Based on State Feedback	4 . 4 . 6
Linearization	1249
Chen Boyuan, Zhao Liangpeng, Wang HuanQi, Du Chunshui, Duan Bin,	
Zhang Chenghui	
Speed Planning Strategy in Urban Environments Considering Passenger's	1255
Preferences, Traffic Signals and Road Limits	1233
Yin Guodong	
Vehicle Trajectory Prediction Based on Triplet Refinement LSTM	1261
Gao Ming, Qi Xiaoyu, Qin Xiaohui, Bian Yougang	1201
Real-Time Self-Ajusting LQR Method for Autonomous Vehicle Lateral Control.	1267
Guo Lie, Tan Zhenyu, Zhao Yijie	120,
Personalized Adaptive Cruise Control Based on Artificial Potential Field Model	
Predictive Control	1273
Han Dongming, Yan Yongjun, Wang Jinxiang, Zhang Qixiang, Fang Zhenwu,	
Yin Guodong	
Pedestrian Crossing Decision-Making Model at Uncontrolled Mid-Block	
Locations Based on Pedestrian Simulator	1279
Lin Qingfeng, Li Guonan, Lyu Yang, Xue Hengyu, Ou Jushang	
MPC-based eco motion planning for mitigating motion sickness in autonomous	
vehicles	1285
Gao Rui, Ma Lei, Zhao Haohan	
Estimation of Motion Status and Road Parameters for Distributed-drive Vehicles	4 = - :
under Time-Varying Road Conditions	1291
Guo Lie, Zhao Yijie, Tan Zhenyu, Zhao Yibing	
Interactive Vehicle Trajectory Prediction Considering Abnormal Emotion Based	1207
on SOR Cognitive Framework	1297

Tang Lanyue, Yue Lishengsa, Fu Aohui, Zhou Xin, Sun Jian, Li Ziheng	
Emergency Takeover under Low Driving Experience: A Study on Driver	
Performance Analysis and Adaptive Behaviors	1304
Chen Chen, Wang Jinxiang, Fang Zhenwu, Zhang Qixiang, Han Dongming,	
Yin Guodong	
Purge Strategy for PEM Fuel Cells Considering Economy and Durability	1310
Gao Yujia, Lalitesh Kumar, Chen Jian, Harsh Mohan Sharma	