2019 3rd International Symposium on Autonomous Systems (ISAS 2019)

Shanghai, China
29 – 31 May 2019

IEEE Catalog Number: CFP19Q31-POD
ISBN: 978-1-7281-1299-2

Copyright © 2019 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: CFP19Q31-POD
ISBN (Print-On-Demand): 978-1-7281-1299-2
ISBN (Online): 978-1-7281-1298-5

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 Content

- (ISAS190019) Page(s): 1 - 6
  Research and Application of Deep Belief Network Based on Local Binary Pattern and Improved Weight Initialization
  Longyang Wang; Junfei Qiao

- (ISAS190030) Page(s): 7 - 11
  Based on Deep Belief Network Intelligent Slag Carry-over Prediction Method
  Tao Shi; Xuan Chen; Hongge Ren

- (ISAS190034) Page(s): 12 - 16
  Research on Path Planning of Mobile Robot Based on Improved A* in Special Environment
  Yiyue Ren; Xiaoru Song; Song Gao

- (ISAS190041) Page(s): 17 - 22
  A novel nonsingular adaptive terminal sliding mode controller for MIMO linear systems with uncertainty
  Ning Zhao; Dongya Zhao

- (ISAS190052) Page(s): 23 - 28
  Minimum-energy Optimal Control System for Four-wheeled Omni-directional Mobile Robot
  Jianbin Wang; Jianping Chen; Pingmeng Bao

- (ISAS190054) Page(s): 29 - 34
  Model Predictive Control for T-S Fuzzy Systems Under Event-Trigger Mechanism
  Yuying Dong; Yan Song

- (ISAS190055) Page(s): 35 - 40
  Cooperative Impact-time-control Guidance of Multiple Flight Vehicles with Un-controllable Velocity
  Wen Li; Huabin Li

- (ISAS190059) Page(s): 41 - 46
  A gradient tracking method for resource allocation base on distributed convex optimization
  Ermeng Fu; Hui Gao; Muhammad Fasehullah; Lian Tan

- (ISAS190062) Page(s): 47 - 51
  Review on human-machine shared control system of automated vehicle
  Chao Huang; Fazel Naghdy; Haiping Du; Hailong Huang

- (ISAS190063) Page(s): 52 - 55
  Pattern recognition of a spiking neural network based on visual motion model
  Hao Yi; Xiumin Li; Wenqiang Xu; Jiajun Yang; Zhuli Deng

- (ISAS190064) Page(s): 56 - 60
  Distributed Min-consensus for Second-order Nonlinear System with Disturbances
  Qian Cui; Jiangshuai Huang; Tingting Gao

- (ISAS190065) Page(s): 61 - 64
  A Simple Conceptor Model for Hand-written-digit Recognition
  Wenqiang Xu; Xiumin Li; Hao Yi; Zhuli Deng

- (ISAS190067) Page(s): 65 - 68
  Pose Estimation by Key Points Registration in Point Cloud
  Weiyi Zhang; Chenkun Qi

- (ISAS190071) Page(s): 69 - 73
  USV attitude angle optimization method based on gradient descent method and S-plane combined filtering
  Xu Yufei; Wan Lei; Zhao Xin

- (ISAS190072) Page(s): 74 - 78
  An Improved Dual-mode EMPC Scheme via Scheduling Terminal Sets
  Shan Xu; Defeng He

- (ISAS190074) Page(s): 79 - 84
  Robust stabilization for constrained switched positive linear systems with mode-dependent average dwell time

Jinjin Liu; Chunyue Song

- (ISAS190076) Page(s): 85 - 90
  Velocity Observer-based Tracking Control of Autonomous Underwater Vehicle with Communication Delay
  Zhiwen Guo; Xian Yang; Jin Gao; Jing Yan; Xiaoyuan Luo

- (ISAS190077) Page(s): 91 - 96
  Asynchronous Localization with Stratification Effect for Underwater Target: A Reinforcement Learning-based Approach
  Yadi Gong; Xin Li; Jing Yan; Xiaoyuan Luo

- (ISAS190079) Page(s): 97 - 101
  Research on visual multi-target based pose estimation algorithm for ARV underwater docking
  Bingqian Wang; Yuangui Tang; Changming Shi

- (ISAS190081) Page(s): 102 - 107
  Neuroadaptive Fault-tolerant PI Control of Nonlinear Systems with Unknown Control Direction
  Yanan Zhang; Junfeng Lai; Zhirong Zhang; Shilei Tan

- (ISAS190082) Page(s): 108 - 113
  Robust Power Control in D2D-Enabled Vehicular Communication Network
  Yuanai Xie; Zhixin Liu; Kai Ma; Yazhou Yuan

- (ISAS190084) Page(s): 114 - 119
  A Strategy of Recovery-Equalization in UWA Communication with Serious Data Loss
  Jiajie Xu; Haifeng Yu; Haihong Zhao; Xinbin Li

- (ISAS190086) Page(s): 120 - 124
  The exponential consensus of general second order multi-agent systems with communication delay
  Wenyan Tang; Kun Li; Jia Wu; Ning Liu

- (ISAS190087) Page(s): 125 - 130
  Route Planning of Rescue Vehicles in the Process of Dynamic Change of Traffic Volume under Emergency Conditions
  Yinli Jin; Wanrong Xu; Ping Wang; Jun Wang

- (ISAS190088) Page(s): 131 - 136
  A Multi-AUV Searching Algorithm Based on Neuron Network with Obstacle
  Shipeng Lv; Yakun Zhu

- (ISAS190089) Page(s): 137 - 142
  Avoidance for AUV with mobile obstacles based on current interference
  Haoran Li; Hongjun Duan; Yakun Zhu

- (ISAS190091) Page(s): 143 - 147
  Quantizer-Based Adaptive Event-Triggered Control for Linear Systems
  Haohao Chen; Yuan Fan; Jun Chen; Lun Wang

- (ISAS190094) Page(s): 148 - 153
  Further results on mixed H∞ and passive sampled-data synchronization of complex dynamical networks via looped-functional approach
  Xin Wang; Jian Sun

- (ISAS190095) Page(s): 154 - 158
  The Evolution of Submissive Clusters in the Spatial Snowdrift Game
  Zhao Qian; Chuyi Guo; Zhihai Rong

- (ISAS190099) Page(s): 159 - 164
  Accurate Initialization Method for Monocular Visual-Inertial SLAM
  Abderraouf Amrani; Hesheng Wang

- (ISAS1900104) Page(s): 165 - 170
  Tracking Control of Constrained Robotic Systems Under Uncertain Initial Conditions
  Shuyan Zhou; Ye Cao; Yongduan Song

- (ISAS190105) Page(s): 171 - 176
  Recognition of Fatigue Driving Based on Frequency Features of Wearable Device Data
  Quan Wen; Dihua Sun; Min Zhao; Jin Chen

- (ISAS190107) Page(s): 177 - 180
  A Platform for Coastline Monitoring System by Unmanned Surface Vessel
  Chao Geng; Guannan Li; Hongli Xu

- (ISAS190108) Page(s): 181 - 186
  Behavior-based Genetic Fuzzy Control System for Multiple USVs Cooperative Target Protection
  Sulemana Nantogma; Weizhi Ran; Yang Xu; Xiaoqin Huang

- (ISAS190109) Page(s): 187 - 192
  Crowd Counting Via Residual Building Block Convolutional Neural Network
  Yaokai Xue; Jing Li

- (ISAS190111) Page(s): 193 - 198
  An Adaptive Distributed Scheduling Algorithm for IEEE 802.15.4e TSCH Protocol
  Yangyang Zhang; Cailian Chen; Shanying Zhu

- (ISAS190112) Page(s): 199 - 204
  6DoF Pose Estimation for Intricately-Shaped Object with Prior Knowledge for Robotic Picking
  Jiao Tonghui; Xia Yanzhao; Gao Xiaosong; Chen Yongyu; Zhao Qunfei

- (ISAS190115) Page(s): 205 - 209
  A new channel estimation method based on GPR and wavelet denosing
  Yuan Yazhou; Wang Pengfei; Liu Zhixin; Xu Zhezhuang

- (ISAS190116) Page(s): 210 - 215
  Robust Adaptive PD Tracking Control of Nonlinear Uncertain Systems with Application to Unmanned Aerial Vehicles
  Wenqiao Li; Shilei Tan; Cao Qian; Junfeng Lai

- (ISAS190117) Page(s): 216 - 221
  MFMCF: A Novel Indoor Location Method Combining Multiple Fingerprints and Multiple Classifiers
  Yuan Yazhou; Liu Xun; Liu Zhixin; Xu Zhezhuang

- (ISAS190118) Page(s): 222 - 226
  Three-Dimensional Distributed Cooperative Guidance Law with High Reliability Communication
  Yonghai Wang; Xi Zhang; Yongtao Shui; Zhenping Zhao; Baogang Lu

- (ISAS190121) Page(s): 227 - 231
  Adaptive fault-tolerant flight control for a quadrotor UAV with slung payload and varying COG
  Lian Tan; Zhixi Shen; Shuangshuang Yu

- (ISAS190122) Page(s): 232 - 237
  Optimization of Soot Blowing of Coal-fired Boilers Based on UKF Predicted Health Status
  Yuanhao Shi; Yanting Wang; Jie Wen; Fangshu Cui; Jingcheng Wang

- (ISAS190123) Page(s): 238 - 242
  Kalman Filter aided by Online Estimation on Q and its Application on Target Tracking
  Yuan Liang; Hong Wang; Xiwang Dong; Qingdong Li; Zhang Ren

- (ISAS190124) Page(s): 243 - 248
  A Low-cost Neuroadaptive Control Approach for Unmanned Aerial Vehicle under Time-Varying Asymmetric Motion Constraints
  Yang Shiguo; Zhirong Zhang; Yaping Ma; Liu He

- (ISAS190128) Page(s): 249 - 254
  Robust Voltage Regulation if Unmanned Electric Vehicles
  Junxing Chen; Muhammad Fasehullah; Shilei Tan; Wei Yu

- (ISAS190129) Page(s): 255 - 260
  Adaptive Fault-Tolerant PID Tracking Control of Mobile Robots Operating Over Sliding Surface
  Zhe Han; Shilei Tan; Cao Qian

- (ISAS190130) Page(s): 261 - 265
  Second-order Approximation Integral Inequality for Stability of Systems with Time Delays
  Wang Xiaoliang; Deren Gong*; Wang Nan; Wu Shufan

- (ISAS190131) Page(s): 266 - 271
  Neuro-adaptive distributed finite-time attitude tracking control for multiple rigid spacecraft by output feedback
  Bing Cui; Yuanqing Xia; Kun Liu; Ganghui Shen

- (ISAS190132) Page(s): 272 - 277
  Observer-based finite-time consensus for double integrator systems with time varying disturbances by sliding mode control
  Cao Qian; Yongduan Song

- (ISAS190133) Page(s): 278 - 282
  Exploiting RSSI Difference among Multiple Neighbors to Improve Face-to-Machine Proximity Estimation in Industrial Human Machine Interaction
  Yulong Zhang; Zhezhuang Xu; Anguo Liu; Rongkai Wang; Jie Huang

- (ISAS190134) Page(s): 283 - 287
  Optimization of Relaying Wireless Sensor Network with RF Energy Harvesting
  Kai Ma; Zhixue Li; Jie Yang; Pei Liu; Zhixin Liu

- (ISAS190135) Page(s): 288 - 293
  Super-exponential tracking for nonlinear systems with non-vanishing uncertainties
  Yujuan Wang; Xiang Chen; Yongduan Song; Mi Fang

- (ISAS190136) Page(s): 294 - 299
  Control of Nonlinear Systems with Asymmetric yet Time-varying Output Constraint: A Direct Transformational Approach
  Kai Zhao; Hui Gao; Yongduan Song; Yongcheng Zhou

- (ISAS190138) Page(s): 300 - 304
  A simple control method of single-link flexible manipulators
  Chenglin Zhang; Tong Yang; Ning Sun; Jianyi Zhang

- (ISAS190139) Page(s): 305 - 310
  Online Hybrid Learning to Speed Up Deep Reinforcement Learning Method for Commercial Aircraft Control
  Minjian Xin; Yue Gao; Tianhao Mou; Jianlong Ye

- (ISAS190140) Page(s): 311 - 316
  Aspect-based Review Summary Generation with Diversification
  Chen Sizhe; Yue Gao; Zhang Peidong

- (ISAS190141) Page(s): 317 - 322
  Embedding Gestalt Principles to Hierarchical Distance Dependent Nonparametric Bayesian Model for Video Segmentation
  Yue Gao

- (ISAS190142) Page(s): 323 - 328
  Human-object Interaction Recognition Using Multitask Neural Network
  Weihao Yan; Yue Gao; Qiming Liu

- (ISAS190143) Page(s): 329 - 334
  Multi-unmanned Vehicle for Region Traversal Search Based on Ant Colony Algorithm
  Fuyu Luo; Wei Wang; Zhe Li

- (ISAS190144) Page(s): 335 - 340
  UAV multiple dynamic objects path planning in air-ground coordination using receding horizon strategy
  Chunhui Xiao; Yuanyuan Zou; Shaoyuan Li

- (ISAS190146) Page(s): 341 - 346
  Fair Data Collection and Energy-Efficient Data Transmission for Heterogeneous NAN in Smart Grid
  Ni Han; Bo Yang; Cailian Chen; Xinping Guan

- (ISAS190147) Page(s): 347 - 351
  A Testing Support Method for Shore/Sea Integration of Unmanned Surface Vehicles
  Feng Weiqiang; Weiwei Kong; Peiyu Han

- (ISAS190148) Page(s): 352 - 357
  Takagi-Sugeno Fuzzy-based Kalman Filter Observer for Vehicle Side-slip Angle Estimation and Lateral Stability Control
  Liqin Zhang; Boyuan Li; Haiping Du; Bangji Zhang

- (ISAS190149) Page(s): 358 - 363
  Multi-modal Remote Sensing Image Description Based on Word Embedding and Self-Attention Mechanism
  Yuan Wang; Alifu Kuerban; Hongbing Ma; Junli Li; Umut Halik; Yalong lv

- (ISAS190150) Page(s): 364 - 369
  Online Chinese Handwriting Recognition with Time Sequence Information
  Zeyu Wang; Yue Gao; Jingshi Yao; Tao Li

- (ISAS190151) Page(s): 370 - 375
  Detect Chinese Cyber Bullying by Analyzing User Behaviors and Language Patterns
  Zhang Peidong; Gao Yue; Chen Sizhe; Wu Hao

- (ISAS190152) Page(s): 376 - 381
  Quantized feedback control for nonlinear feedforward systems with unknown output functions
  Wang Ping; Yu Chengpu

- (ISAS190153) Page(s): 382 - 387
  Optimal Scheduling of Electricity Powered Thermal System for Demand Side Management of Buildings
  Jiang Wu; Yang Li; Zhanbo Xu

- (ISAS190154) Page(s): 388 - 393
  Self-organization Method of USV Swarm Target Strike Task Based on Ant Colony Algorithm
  Yangliu Xie; Xu Liang; Lixuan Lou; Xiaoye Guo

- (ISAS190155) Page(s): 394 - 399
  Consensus of General Linear Multi-Agent Systems under Directed Communication Graph with Limited Data Rate
  Ziqin Chen; Ji Ma; Xiao Yu

- (ISAS190156) Page(s): 400 - 405
  Output redefinition dynamic inverse trajectory tracking control of underactuated surface vessels with external disturbance
  Junfeng Qin; Jialu Du; Jian Li

- (ISAS190157) Page(s): 406 - 411
  The Characteristics of Kernel and Kernel-based Learning
  Fuxiao Tan

- (ISAS190158) Page(s): 412 - 417
  Research on Alert Strategy of Unmanned surface Vessel Based on Typical Missions
  Wei Han; Fengchi Xu; Xiangfeng Ma

- (ISAS190159) Page(s): 418 - 423
  Efficient Error Packet Recovery without Redundant Bytes for IEEE 802.15.4 Protocol
  Jionghong Gu; Cailian Chen; Shanying Zhu; Jianping He

- (ISAS190162) Page(s): 424 - 428
  A K-Controllable Matching Algorithm for Network Systems
  Xiaoli Li; Chen Peng

- (ISAS190163) Page(s): 429 - 433
  Synchronization of a Class of Nonlinear Multi-Agent Systems
  Maobin Lu; Lu Liu

- (ISAS190164) Page(s): 434 - 438
  Overview of Task Understanding of Unmanned Combat Systems
  Qingping Liu; Jia Zhang; Bin Xin; Hao Zhang

- (ISAS190165) Page(s): 439 - 444
  Fault-tolerant sampled-data synchronization of Markovian jumping complex dynamical networks via looped-functional approach
  Xin Wang; Jian Sun

- (ISAS190167) Page(s): 445 - 450
  Event-triggering Control of Positive Switched Systems Based on Linear Programming
  Laiyou Liu; Junfeng Zhang; Yu Shao; Miao Li

- (ISAS190168) Page(s): 451 - 456
  Event-triggered Formation Control of Multi-agent Systems with Time Delay via Complex-valued Laplacian
  Wenji Cao; Wei Zhu

- (ISAS190169) Page(s): 457 - 461
  Optimizing Battery Capacity Based on Smart Meter Data in Battery Energy Storage System
  Jiejun Zheng; Zhezhuang Xu; Hanwei Zhong; Xin Zhou; Yuxiong Xia

- (ISAS190170) Page(s): 462 - 467
  Takeoff and Landing of Multirotor Aerial Vehicles on Slopes: Design and Experiment
  Ziwang Zhang; Guofeng Chen; Dabo Xu

- (ISAS190173) Page(s): 468 - 473
  Robust Stability for Uncertain Fuzzy Systems with Time-delay Based on Sampled-Data Control
  Ge Chao; Zhang Ganlei; Tian Jiaping; Zhao Hanxiao

- (ISAS190177) Page(s): 474 - 477

Dissipativity-based Reduced-order Filtering for Uncertain Semi-Markovian Jump Systems: Continuous-Time Case
Huiyan Zhang; Wengang Ao

- (ISAS190178) Page(s): 478 - 483
  Distributed fault-tolerant consensus control for uncertain nonlinear multi-agent systems
  Zhijie Li; Changchun Hua; Kuo Li
- (ISAS190179) Page(s): 484 - 489
  A Survey on Forest Fire Monitoring Using Unmanned Aerial Vehicles
  Anim Hossain; Youmin Zhang; Chi Yuan
- (ISAS190180) Page(s): 490 - 495
  Blockchain-based Credit and Arbitration Mechanisms in Crowdsourcing
  Yuejiao Ding; Zhongyu Chen; Lin Feilong; Changbing Tang
- (ISAS190181) Page(s): 496 - 501
  Design of Embedded Mining Submersible Electric Pump Detection System Based on Single Chip Microcomputer
  Zhao Linan; Wang Pitao; Qiang Zhang
- (ISAS190184) Page(s): 502 - 507
  A Consensus Control Algorithm of High-order Multi-agent Systems with Time Delay
  Yuan Li; Kuan Tang; Fei Yan
- (ISAS190185) Page(s): 508 - 511
  Hierarchical anti-disturbance Control for Semi-Markovian Jump T-S Fuzzy Systems with nonlinearity via multiple disturbances
  Yaming Zhang; Xiuming Yao
- (ISAS190187) Page(s): 512 - 517
  Optimal Power Scheduling for Remote State Estimation: A Quantitative and Analytical Approach
  Yao Li; Cailian Chen; Shanying Zhu; Xinping Guan
- (ISAS190188) Page(s): 518 - 521
  Reduced-Order Filtering of Fuzzy Dynamic Systems via an Event-Triggered Scheme
  Yao Wen; Qianqian Chen; Xiaojie Su
- (ISAS190193) Page(s): 522 - 527
  An Adaptive Control Defense Scheme of False Data Injection Attacks in Smart Grids
  Xiaoyuan Luo; Lingjie Hou; Xinyu Wang; Xinping Guan
- (ISAS190203) Page(s): 528 - 533
  Adaptive consensus control of nonlinear fractional-order multi-agent systems with a leader
  Jiajun Yang; Wei Luo; Hao Yi; Wenqiang Xu
- (ISAS190209) Page(s): 534 - 537
  Application of Improved A* algorithm in Mobile Robot Path Planning Planning
  Zunshi Song; Liang Yuan
- (ISAS190210) Page(s): 538 - 543
  An IOS Small-Gain Theorem for Nonlinear Time-Delay Systems
  Adiya Bao; Tengfei Liu; Zhongping Jiang