ASME® 2019 IDETC/CIE

International Conference on
Mechatronic and Embedded Systems and Applications
MONDAY, AUGUST, 19

MESA-2
BIO-INSPIRED ROBOTICS AND SOFT ROBOTICS

Session MESA-2-1
Bio-Inspired Robotics and Soft Robotics
San Clemente 9:10am - 10:30am

Session Organizer: Chris Pretty, University of Canterbury, Christchurch, New Zealand

9:10am  Dynamical Modelling and Control of Snake-like Motion in Vertical Plane for Locomotion in Unstructured Environments
Technical Paper Publication. IDETC2019-97227

Mohammadali Javaheri Koopaee, University of Canterbury, Christ Church, New Zealand,
Chris Pretty, University of Canterbury, Christchurch, New Zealand, Koen Classens, University of Eindhoven, Eindhoven, Netherlands, Xiaoqi Chen, Univ of Canterbury, Christchurch, New Zealand

9:36am  ANALYSIS OF A MULTIBODY ELASTODYNAMIC MODEL FOR CLOSED-LOOP KINEMATIC MECHANISMS
Technical Paper Publication. IDETC2019-97901

Matteo C. Palpacelli, Luca Carbonari, Stefano Brilliarelli, Massimo Callegari, Polytechnic University of Marche, Ancona, Italy

10:02am  Computer Vision-Based Object Recognition and Automatic Pneumatic Soft Gripping
Technical Paper Publication. IDETC2019-97976

Ebrahim Shahabi, Wei-Hao Lu, Po Ting Lin, National Taiwan University of Science and Technology, Taipei, Taiwan, Chin-Hsing Kuo, University of Wollongong, NSW 2522, Australia

MESA-9
MECHATRONICS AND INDUSTRY 4.0

Session MESA-9-1
Mechatronics and Industry 4.0
Palos Verdes A 9:10am - 10:30am

Session Organizer: Tapio Heikkilä, VTT Technical Research Centre of Finland, Oulu, OO, Finland
Session Co-Organizer: Emanuele Frontoni, Università Politecnica delle Marche, Ancona, Italy, Italy

9:10am  Heuristic approach for warehouse resources and production planning optimization: an industry case study
Technical Paper Publication. IDETC2019-97768

Roberto Rossetti, Università Politecnica delle Marche, Ancona, Italy, Italy, Mirco Sturari, Università Politecnica delle Marche, Dipartimento di Ingegneria dell’Informazione, Ancona, Italy, Italy, Emanuele Frontoni, Università Politecnica delle Marche, Ancona, Italy, Italy, Jelena Loncarski, Department of Engineering Sciences, Division of Electricity, Uppsala University, Uppsala, Ancona, Sweden, Anselmo Cicchitti, Enrico Iavazzo, Diego Gualtieri, Famecanica.Data SPA, Pescara, Italy, Italy

9:36am  An event based machine learning framework for predictive maintenance in Industry 4.0
Technical Paper Publication. IDETC2019-97917

Matteo Calabrese, Martin Cimmino, Martina Manfrin, ACCENTURE, Milan, Italy, Francesca Flume, Accenture, 20154, Italy, Dimos Kappatis, Accenture, Milan, Italy, Maura Mengoni, Silvia Ceccacci, Emanuele Frontoni, Marina Paolanti, Università Politecnica delle Marche, Ancona, Italy, Alberto Carrotta, Giuseppe Toscano, Biesse Group, Pesaro, Italy

10:02am  On-line programming of robot skills
Technical Paper Publication. IDETC2019-97958

Tapio Heikkilä, Janne Saukkoripi, VTT Technical Research Centre of Finland, Oulu, OO, Finland, Jari Ahol, VTT Technical Research Centre of Finland Ltd, Oulu, OO, Finland, Thomas Seppälä, VTT Technical Research Centre of Finland, Oulu, Finland

MESA-4
MECHATRONIC AND EMBEDDED SYSTEMS FOR AGRICULTURE 4.0

Session MESA-4-1
Mechatronics and Embedded Systems for Agriculture 4.0
San Clemente 10:50am - 12:10pm

Session Organizer: Abhijit Nagchoudhuri, Univ Of Maryland Eastern Shore, Princess Anne, MD, United States
Session Co-Organizer: Manoj Karkee, Washington State University, Prosser, WA, United States

10:50am  Deep Learning Automatic Inspections of Mushroom Substrate Packaging for PP-bag Cultivations
Technical Paper Publication. IDETC2019-97011

Rong-yuan Jou, National Formosa Univ, Yulin 632, Taiwan, Tseng-Wei Li, National Formosa University, Hwei/Yunlin, Taiwan

11:10am  A Novel Fruit Removal Mechanism for an Olive Harvester
Technical Presentation. IDETC2019-97093

Taymaz Homayouni, University of California Merced, Merced, CA, United States, Arash Mohammad Toudeshki, University of California Merced, Merced, CA, United States, Reza Ehsani, University of California Merced, Merced, CA, United States

11:30am  OVERVIEW OF REMOTE SENSING EFFORTS AT UNIVERSITY OF MARYLAND EASTERN SHORE
Technical Paper Publication. IDETC2019-98457

Abhijit Nagchoudhuri, Univ Of Maryland Eastern Shore, Princess Anne, MD, United States, Travis Ford, Christopher Hartman, University of Maryland Eastern Shore, Princess Anne, MD, United States

11:50am  Design and development of a 5R 2DOF parallel robot arm for handling paper pot seedlings in a vegetable transplanter
Technical Presentation. IDETC2019-98177

Vikas Paradkar, Rahul Sundaram, Hifjur Raheman, Indian Institute of Technology, Kharagpur, Kharagpur, West Bengal, India
MESA-5
DISTURBANCE REJECTION CONTROL
Session MESA-5-1
Disturbance Rejection Control
Palos Verdes A 10:50am - 12:10pm

Session Organizer: Mingwei Sun, Nankai University, Tianjin, China
Session Co-Organizer: Jin Tao, Aalto University, Espoo, Finland

10:50am  On External Disturbance Rejection of Linear ADRC
Technical Paper Publication. IDE-TC2019-97831

Huiyu Jin, Xiamen University, Xiamen, Fujian Province, China, Yang Chen, Weiyao Lan, Xiamen University, Xiamen, China

11:30am  Frequency Response Analysis of Macro-micro Stages with Active Disturbance Reject Controller
Technical Paper Publication. IDE-TC2019-98352

Danping Zeng, Ruirui Huang, Guangdong University of Technology, Guangzhou, Guangdong, China, Zhijun Yang, Guangdong Provincial Key Laboratory of Micro-Nano Manufacturing Technology and Equipment, Guangzhou, China, Wenchao Xue, Amss, Chinese Academy of Sciences, Beijing, Beijing

MESA-1
ARTIFICIAL INTELLIGENCE AND EMERGING TECHNOLOGIES FOR MECHATRONICS AND EMBEDDED SYSTEMS
Session MESA-1-1
Artificial Intelligence and Emerging Technologies for Mechatronics and Embedded Systems
San Clemente 4:10pm - 5:50pm

Session Organizer: Ching-Yuan Chang, National Taipei University of Technology, Taipei, Taiwan
Session Co-Organizer: YangQuan Chen, Univ of California Merced, Merced, CA, United States

4:10pm  Embedded RIOTS - Model Predictive Control Towards Edge
Technical Paper Publication. IDE-TC2019-97046

Jairo Viola, Sina Dehghan, YangQuan Chen, Univ of California Merced, Merced, CA, United States

4:30pm  CONTACTLESS LI-ION BATTERY VOLTAGE DETECTION BY USING WALABOT AND MACHINE LEARNING
Technical Paper Publication. IDE-TC2019-97668

Yanan Wang, Beijing Institute of Technology, Beijing, China, Haoyu Niu, Tiebiao Zhao, University of California, Merced, Merced, CA, United States, Lei Dong, Xiaozhong Liao, Beijing Institute of Technology, Beijing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

4:50pm  An embedded Machine-Vision System for the Real-time Measurement of Necking Effect and Mechanical Fracture
Technical Paper Presentation. IDETC2019-97700

Ching-Yuan Chang, Wen-Chun Tseng, Hui-En Lin, National Taipei University of Technology, Taipei, Taiwan

5:10pm  Augmented Microscopy for DNA Damage Quantification: a Machine Learning Tool for Environmental, Medical and Health Sciences
Technical Paper Publication. IDETC2019-97902

Michele Bernardini, Alessandro Ferri, Lucia Migliorelli, Università Politecnica delle Marche, Ancona, Italy, Sara Moccia, Polytechnic University of Marche, Ancona, Italy, Luca Romeo, Sonia Silvestri, Luca Tiano, Adriano Mancini, Università Politecnica delle Marche, Ancona, Italy

5:30pm  Preventive maintenance of blanking molds by using embedded piezoelectric films and support vector machine
Technical Paper Publication. IDETC2019-98192

Ching-Yuan Chang, Tsung-Han Huang, Tzu-Chun Chung, National Taipei University of Technology, Taipei, Taiwan

MESA-11
SENSORS AND ACTUATORS
Session MESA-11-1
Sensors and Actuators
Palos Verdes A 4:10pm - 5:50pm

Session Organizer: Ja Choon Koo, Sungkyunkwan University, Suwon, Korea (Republic)

4:10pm  Design of Multi-DOF Spherical Piezoelectric Motor Using Electrode Configuration Based Actuating Units
Technical Paper Publication. IDE-TC2019-97116

Chi-Ying Lin, National Taiwan University of Science and Technology, Taipei, Taiwan, Yu-Ting Sung, Compal Electronics, Inc., Taipei, Taiwan, Yu-Hsi Huang, National Taiwan University, Taipei, Taiwan

4:30pm  Design of Acceleration Observers to Compensate for Low-Frequency Response of Piezoelectric Accelerometers
Technical Paper Presentation. IDETC2019-97852

Yu-Sheng Lu, Po-Chen Lee, National Taiwan Normal University, Taipei, Taiwan

4:50pm  ENERGY OPTIMAL CONTROL OF DIELECTRIC ELASTOMER ACTUATORS VIA ADAPTIVE DYNAMIC PROGRAMMING
Technical Paper Publication. IDE-TC2019-98156

Paolo Roberto Massenio, Polytechnic University of Bari, Bari, Italy, Gianluca Rizzello, Department of Engineering and Department of Material Science and Engineering, Saarland University, Saarbrucken, Germany, David Nosso, Department of Electrical and Information Engineering, Polytechnic University of Bari, Bari, Italy

5:10pm  Development of an Assist-as-need Controller for an Upper-limb Exoskeleton with Voluntary Torque Estimate
Technical Paper Publication. IDE-TC2019-98297

Logan Chatfield, Benjamin Fortune, Lachlan McKenzie, Chris Pretty, University of Canterbury, Christchurch, Canterbury, New Zealand
5:30pm Electrode-Skin Impedance Component Estimation in the Time-Domain Technical Paper Publication. IDE-TC2019-98298

Benjamin Fortune, Lachlan McKenzie, Logan Chatfield, Chris Pretty, University of Canterbury, Christchurch, Canterbury, New Zealand

TUESDAY, AUGUST, 20

MESA-13 MICRO-/NANO-MANIPULATION TECHNOLOGIES AND APPLICATIONS

Session MESA-13-1 Micro-/Nano-Manipulation Technologies and Applications
San Clemente 8:00am - 9:00am

Session Organizer: Peng Yan, Shandong University, Jinan, Shandong, China
Session Co-Organizer: Zhen Zhang, Tsinghua University, Beijing, China

8:00am Tracking Performance Improvement of Repetitive Controller for Nano-Manipulating Systems with Time Delay Technical Paper Publication. IDE-TC2019-97313

Pengbo Liu, Qilu University of Technology, Jinan, China, Peng Yan, Shandong University, Jinan, Shandong

8:30am Development of a Compact and Cost Effective MSL System based on a Compliant Nanomanipulator Technical Paper Publication. IDE-TC2019-97522

Zheng Liu, Zhen Zhang, Tsinghua University, Beijing, China, Yingchun Guan, BeiHang University, Beijing, China

MESA-15 UNMANNED VEHICLE TECHNOLOGIES AND APPLICATIONS

Session MESA-15-1 Control and optimization techniques Palos Verdes A 8:00am - 9:00am

Session Organizer: Wencen Wu, San Jose State Univ, San Jose, CA, United States
Session Co-Organizer: Youmin Zhang, Mechanical & Industrial Eng, Concordia Univ., Montreal, QC, Canada, YangQuan Chen, Univ of California Merced, Merced, CA, United States

8:00am Neighborhood Optimization Method For Shaping Bode Plot With Larger Phase Margin Technical Paper Publication. IDE-TC2019-97288

Bo Shang, Chengdong Wu, Northeastern University, Shenyang, Liaoning, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

8:20am MULTI-RESOLUTION ENERGY STRATEGY FOR BATTERY MANAGEMENT SYSTEM OF UNMANNED GROUND VEHICLES IN AGRICULTURE Technical Paper Publication. IDE-TC2019-97666

Yanan Wang, Beijing Institute of Technology, Beijing, China, Junwei Tian, Xi'an Technological University, Xi'an, China, Haoyu Niu, University of California, Merced, Merced, CA, United States, Peng Wang, Nanjing Forest Univ, China, Nanjing, China, XIAOZHONG LIAO, Beijing Institute of Technology, Beijing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States


Sarthak Chatterjee, Rensselaer Polytechnic Institu, Troy, NY, United States, Wencen Wu, San Jose State Univ, San Jose, CA, United States

MESA-7 EMBEDDED SYSTEMS INFRASTRUCTURE AND THEORY

Session MESA-7-1 Embedded Systems Infrastructure and Theory
San Clemente 9:10am - 10:30am

Session Organizer: Peter Rössler, University of Applied Sciences Technikum Wien, Vienna, Vienna, Austria

9:10am A CLOUD-BASED HEALTHCARE INFRASTRUCTURE FOR NEONATAL INTENSIVE-CARE UNITS Technical Paper Publication. IDETC2019-97526

Lucia Migliorelli, Annalisa Cenci, Michele Bernardini, Luca Romeo, Sara Moccia, Primo Zingaretti, Università Politecnica delle Marche, Ancona, Italy

9:50am CHECKING APPLICATION LEVEL PROPERTIES USING ASSERTION SYNTHESIS Technical Paper Publication. IDE-TC2019-97950

Matthias Wenzl, UAS Technikum Wien, Vienna, Austria, Peter Rössler, University of Applied Sciences Technikum Wien, Vienna, Vienna, Austria, Andreas Puhm, UAS Technikum Wien, 1200, Austria

MESA-8 EMBEDDED VISION AND AMBIENT INTELLIGENCE

Session MESA-8-1 Embedded Vision and Ambient Intelligence
9:10am - 10:30am

Session Organizer: Marina Paolanti, Università Politecnica delle Marche, Ancona, Italy

9:10am Analysis Of Octree Coding For 3D Point Cloud Frame Technical Paper Publication. IDE-TC2019-97328

Pei-Heng Li, Juo-Wei Lin, Yi-Lun Huang, Ting-Lon Lin, National Taiwan University of Technology, Taipei, Select State/Province, Taiwan
MESA-15
UNMANNED VEHICLE TECHNOLOGIES AND APPLICATIONS

Session MESA-15-2
Application techniques

PLOS VERDES A 9:10 A.M. - 10:30 A.M.

Session Organizer: YangQuan Chen, Univ of California Merced, Merced, CA, United States
Session Co-Organizer: Wencen Wu, San Jose State Univ, San Jose, CA, United States, Youmin Zhang, Mechanical & Industrial Eng, Concordia Univ, Montreal, QC, Canada

9:10 A.M. Smart agricultural in-field service robot: from toy to tool
Technical Paper Publication. IDE-TC2019-97497

PENG WANG, Nanjing Forestry University, Merced, CA, United States, Junwei Tian, Xi’an Technological University, Xi’an, China, Haoyu Niu, University of California Merced, Merced, CA, United States, YangQuan Chen, Univ of California Merced, Merced, CA, United States

9:30 A.M. Fire Detection Using Both Infrared and Visual Images with Application to Unmanned Aerial Vehicle Forest Fire Surveillance
Technical Paper Publication. IDE-TC2019-97895

Youmin Zhang, Mechanical & Industrial Eng, Concordia Univ, Montreal, QC, Canada, Chi Yuan, Zhixiang Liu, Anim Hossain, Concordia University, Montreal, QC, Canada

9:50 A.M. Smart and autonomous farm field scouting service robot as an edge device under $1000: Challenges and Opportunities
Technical Paper Publication. IDE-TC2019-98259

Junwei Tian, Xi’an Technological University, Xi’an, China, Haoyu Niu, University of California Merced, Merced, CA, United States, Peng Wang, Nanjing Forest Univ, China, Nanjing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

10:10 A.M. Study of Industry 4.0 and Its Impact On Lean Transformation in Aerospace Manufacturing
Technical Paper Publication. IDE-TC2019-98147

Sagil James, Alejandro Cervantes, California State University Fullerton, Fullerton, CA, United States

10:50 A.M. Extending Educational Robot Sensing Capabilities Through Equipping an External Microcontroller
Technical Paper Publication. IDE-TC2019-98470

Jairo Viola, Univ of California Merced, Merced, CA, United States, Alberto Rodici, University of California, Merced, MERCED, CA, United States, Sina Dehghan, YangQuan Chen, Univ of California Merced, Merced, CA, United States

11:30 A.M. Data Analysis of Streamed Multivariate Time Series Data for Predictive Maintenance
Technical Presentation. IDEETC2019-97856

Chao-Lung Yang, Chin-Hsuan Liang, National Taiwan University of Science and Technology, Taipei, Taipei, Taiwan
10:50am ON THE UNIFIED DESIGN OF ACCELERATED GRADIENT DESCENT
Technical Paper Publication. IDE-TC2019-97624
Yuquan Chen, Yiheng Wei, Yong Wang, University of Science and Technology of China, Hefei, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

11:10am Fractional-order extreme learning machine with Mittag-Leffler distribution
Technical Paper Publication. IDE-TC2019-97652
Haoyu Niu, University of California, Merced, Merced, CA, United States, Yuquang Chen, University of Science and Technology of China, Hefei, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

11:30am IMPROVING CUCKOO SEARCH ALGORITHM WITH MITTAG-LEFFLER DISTRIBUTION
Technical Paper Publication. IDE-TC2019-97709
Jiamin Wei, Beijing Jiaotong Univ, Beijing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States, Yajuan Yu, Beijing Jiaotong Univ, Beijing, China, Yuquan Chen, University of Science and Technology of China, Hefei, China

11:50am ONLINE IDENTIFICATION OF UNCERTAIN FRACTIONAL-ORDER NONLINEAR SYSTEMS USING A REINFORCED DIFFERENTIAL EVOLUTION OPTIMIZER
Technical Paper Publication. IDE-TC2019-98254
Jiamin Wei, Yongguang Yu, Beijing Jiaotong Univ, Beijing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

MESA-3
ROBOTICS AND MOBILE MACHINES
Session MESA-3-1
Robotics and Mobile Machines
Palos Verdes A 2:10pm - 3:50pm
Session Organizer: Massimo Callegari, Politecnico University of Marche, Ancona, Italy

2:10pm Affine ICP for Fine Localization of Smart-AGVs in Smart Factories
Technical Paper Publication. IDE-TC2019-97418
Abdurrahman Yilmaz, Hakan Temeltas, Istanbul Technical University, Istanbul, Turkey

2:30pm Indoor TestBed For Vector Field Multirobot Adaptive Navigation: Feasibility Study
Technical Paper Publication. IDE-TC2019-97974
Danop Rajabhandharaks, Robert McDonald, Santa Clara University, Santa Clara, CA, United States, Michael Neumann, Santa Clara University, Oakland, CA, United States, Christopher Kitts, Santa Clara University, Burlingame, CA, United States

2:50pm Object Detection and Localization of Autonomous Humanoid Robot in Soccer Games
Technical Presentation. IDETC2019-98489
Chung-Hsien Kuo, Ken-Fun Lin, Yu-Cheng Kuo, National Taiwan University of Science and Technology, Taipei, Taiwan

3:10pm MECHANICAL DESIGN AND PROTOTYPE OF A RECONFIGURABLE ACTUATED UNIVERSAL JOINT
Technical Paper Publication. IDETC2019-97916
Matteo C. Palpacelli, Luca Carbonari, Giacomo Palmieri, Massimo Callegari, Politechnic University of Marche, Ancona, Italy

3:30pm Dual-Arm Manipulators Kinematic Control Under Multiple Constraints via Virtual Joints Approach
Technical Paper Publication. IDETC2019-98048
Daniele Proietti Pagnotta, Alessandro Freddi, Sauro Longhi, Università Politecnica delle Marche, Ancona, Italy, Andrea Monteriu, Università Politecnica Delle Marche, Ancona, Italy

MESA-14
FRACTIONAL DERIVATIVES AND THEIR APPLICATIONS
Session MESA-14-1
Theoretical developments in FDTA
San Clemente 2:10pm - 3:50pm
Session Organizer: Yiheng Wei, University of Science and Technology of China, Hefei, China
Session Co-Organizer: Riccardo Caponetto, University of Catania, Catania, CT, Italy, Chunna Zhao, Yunnan University, Kunming, China

2:10pm Formalization of Fractional Flow Component in Higher-order Logic Theorem Proving
Technical Paper Publication. IDETC2019-97209
Chunna Zhao, Mu R. Jiang, Ya Q. Huang, Yunnan University, Kunming, China

2:30pm Some Fundamental Properties on the Sampling Free Nabla Laplace Transform
Technical Paper Publication. IDETC2019-97351
Yiheng Wei, Yuquan Chen, Yong Wang, University of Science and Technology of China, Hefei, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

2:50pm Renormalization Group Method for Singular Perturbed Systems Driven by Fractional Brownian Motion
Technical Paper Publication. IDETC2019-98258
Lihong Guo, Shaoyun Shi, Jilin University, Changchun, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

3:10pm PERIODIC-DOUBLING BIFURCATION OF A CIRCUIT WITH A FRACTIONAL-ORDER MEMRISTOR
Technical Paper Publication. IDETC2019-98178
Yajuan Yu, Changzhou University, Changzhou, Jiangsu, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States
3:30pm Improvement of admissibility of linear singular fractional order systems
Technical Paper Publication. IDETC2019-98329

XueFeng Zhang, Northeastern University, Shenyang, China, Zhong Yingbo, Northeastern University, Shenyang, China

MESA-14 FRACTIONAL DERIVATIVES AND THEIR APPLICATIONS
Session MESA-14-2
Applications of fractional calculus in controls
San Clemente 4:10pm - 5:50pm

4:10pm Model Predictive Control of General Fractional Order Systems Using a General Purpose Optimal Control Problem Solver, RIOTS
Technical Paper Publication. IDETC2019-97489

Sina Dehghan, Univ of California Merced, Merced, CA, United States, Tiebiao Zhao, University of California, Merced, Merced, CA, United States, YangQuan Chen, Univ of California Merced, Merced, CA, United States, Taymaz Homayouni, University of California Merced, Merced, CA, United States

4:35pm ACTUATOR RATE LIMIT EFFECTS ON PROPORTIONAL-INTEGRAL CONTROLLER FOR FIRST-ORDER PLUS TIME-DELAY SYSTEMS
Technical Paper Publication. IDETC2019-97662

Zhenlong Wu, Tsinghua University, Beijing, China, Jie Yuan, Southeast Univ, Nanjing, China, Donghai Li, Yali Xue, Tsinghua University, Beijing, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States

5:00pm SATISFACTORY OPTIMIZATION DESIGN FOR FRACTIONAL ORDER PID CONTROLLER
Technical Paper Publication. IDETC2019-98342

Tianyu Liu, Yuanjun Jia, University of Science and Technology of China, Hefei, China, Weidong Jin, Southwest Jiaotong University, Chengdu, China, Yong Wang, University of Science and Technology of China, Hefei, China

5:25pm Chattering-free Finite-time Stability of A Class of Fractional-order Nonlinear Systems
Technical Paper Publication. IDETC2019-97674

Bin Wang, Northwest A&F University, Yangling, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States, Ying Yang, Northwest A&F University, Yangling, China

MESA-17 MECHATRONICS AND EMBEDDED TECHNOLOGIES IN INTELLIGENT TRANSPORTATION SYSTEMS
Session MESA-17-1
Mechatronics and Embedded Technologies in Intelligent Transportation Systems
Palos Verdes A 4:10pm - 5:50pm

4:10pm Research On An Intelligent Diagnostic Equipment Suitable For Rail Traffic Braking System
Technical Paper Publication. IDETC2019-97600

Changzheng Fang, CRRC Zhuzhou Locomotive Co.,LTD, Zhuzhou, China, Jing Yang, Quan Liu, CRRC Zhuzhou Locomotive Co.,Ltd, Zhuzhou, China, Furen Feng, Tongji University, Shanghai, China, Jianyong Zuo, Tongji Univ., Shanghai, China

4:30pm Model-Based Combustion Duration and Ignition Timing Prediction for Combustion Phasing Control of A Spark-Ignition Engine Using In-Cylinder Pressure Sensors
Technical Paper Publication. IDETC2019-97703

Xin Wang, Amir Khameneian, Paul Dice, Bo Chen, Mahdi Shahbakhti, Jeffrey Naber, Michigan Technological University, Houghton, MI, United States, Chad Archer, Quiping Gu, Chris Glugla, Garlan Huberts, Ford Motor Company, Dearborn, MI, United States

4:50pm MPC-BASED CONTROL OF AUTONOMOUS VEHICLES WITH LOCALIZED PATH PLANNING FOR OBSTACLE AVOIDANCE UNDER UNCERTAINTIES
Technical Paper Publication. IDETC2019-97712

Sai Rajeev Devaragudi, Bo Chen, Michigan Technological University, Houghton, MI, United States

5:10pm A Cloud Computing Architecture to Map Trawling Activities using Positioning Data
Technical Paper Publication. IDETC2019-97779

Alessandro Galdelli, Adriano Mancini, Università Politecnica delle Marche, Ancona, AN, Italy, Anna N. Tassetti, Carmen Ferra Vega, Enrico Armelloni, Giuseppe Scarcella, Gianna Fabi, Institute of Marine Biological Resources and Biotechnologies - National Research Council, Ancona, AN, Italy, Primo Zingaretti, Università Politecnica delle Marche, Ancona, Italy

5:30pm MODEL ORDER REDUCTION VIA NON INTEGER ORDER SYSTEMS
Technical Presentation. IDETC2019-98349

Riccardo Caponetto, Emanuele Murgano, University of Catania, Catania, Italy

5:25pm Chattering-free Finite-time Stability of A Class of Fractional-order Nonlinear Systems
Technical Paper Publication. IDETC2019-97674

Bin Wang, Northwest A&F University, Yangling, China, YangQuan Chen, Univ of California Merced, Merced, CA, United States, Ying Yang, Northwest A&F University, Yangling, China