

The International Symposium on Measurement, Control, and Robotics (ISMCR 2019)

THEME: “ROBOTICS FOR THE BENEFIT OF HUMANITY”

19-21 September 2019

*The University of Houston-Clear Lake
2300 Bay Area Blvd, Houston, Texas 77058
[REGISTRATION at WWW.ISMCR.ORG]*

ISMCR 2019 Program

Thursday 19th September-2019	
16:00 – 17:30	Registration -Reception (The University of Houston-Clear Lake STEM Building)
17:30 – 18:30	Reception- Light Refreshments, Drinks and Cash Bar (UHCL STEM Building)
18:30- 20:00	<p>Welcome by General Chair ISMCR 2019: Dr. Zafar Taqvi, Chair IMEKO TC-17 (STEM Building, Conference Room 1203)</p> <p>Welcome by Conference Host: Dr Ira Kincade Blake, the University of Houston-Clear Lake (UHCL)</p> <p>Special Invited Presentation Global Space Exploration: Our Adventure into the Unknown : Dr Kam Lulla, Director University Research and Partnership Office, NASAJSC</p>
Friday 20th September-2019..... (The University of Houston-Clear Lake Bayou Building)	
07:00	Continental Breakfast (Forest Room)
08:00	Registration (Outside Forest Room)
08:30 – 09:30	<p>Keynote 1: Telexistence- Virtual Human Teleportation and Empowered Existence (Forest Room) Speaker: Professor Susumu Tachi, Professor Emeritus, The University of Tokyo</p>
10:00 --12:30	<p>Session A1: Session Title - Robotics for Human Performance and Rehabilitation and Medical Applications I (Room 1435),</p> <p>Session Chair/Co-chair:</p> <p>Paper A1-1: Master-Slave Robot Hand Control Method based on Congruence of Vectors for Telexistence Hand Manipulation; Yasuyuki Inoue, Fumihiro Kato and Susumu Tachi</p> <p>Paper A1-2: Gait Assistance Robotics Control Through High Level Parametric Modeling of Physiological Measurements Rodrigo Ramon and Ou Bai</p> <p>Paper A1-3 : Hotcell Worker Assistive Robotic Exoskeleton Design and Control Rodrigo Ramon, Chris Nataros, Tong Yi, Leonel Lagos, Aparna Aravelli and Ou Bai</p> <p>Paper A1-4: Deep learning approach to control of prosthetic hands with electromyography signal; Mohsen Jafarzadeh, Daniel Curtiss Hussey and Yonas Tadesse</p> <p>Paper A1-5: A robotic laparoscope holder operated by jaw movements and triaxial head rotations Masato Arai, Takato Ohmori, Shunji Moromugi, Tomohiko Adachi, Taiichiro Kosaka, Shinichiro Ono and Susumu Eguchi</p>

10:00 --12:30	<p>Session A2: Session Title- Methods of Artificial Intelligence, Augmented Intelligence and VR in Robotics (Room 1437),</p> <p>Session Chair/Co-chair:</p> <p>Paper A2-1: Applications of Deep Learning to Road Sign Detection in DVR Images Yong-Lin Kuo and Shih-Hsun Lin</p> <p>Paper A2-2: Autonomous Navigation via a Q Network with One Hot Image Encoding Will Anderson, Kevin Carey, Eric Sturzinger and Christopher Lowrance</p> <p>Paper A2-3: Low Cost Autonomous Amphibious Bird Chasing Robot Hoo Kim, Emily McCloy, Garrett Williamson and Tommy Vandermolen</p> <p>Paper A2-4: Innovative Applications of VR: Flash-flood control and monitoring Victor Luis Padilha, Francisco Henrique De Oliveira, David Proverbs and Simone Keller Fuchter</p> <p>Paper A2-5: Pain Mitigation Through Virtual Reality Applications Miles Mcfarland and Nathan Zelaya</p>
10:00 --12:30	<p>Session A3: Session Title - Mobile Robots and Applications I (Room 1439),</p> <p>Session Chair/Co-chair:</p> <p>Paper A3-1: Structure of Wall Climbing Robot Control System Valery Gradetsky, Maxim Knyazkov, Evgeniy Semenov and Artem Sukhanov</p> <p>Paper A3-2: Optimized distributed scheduling for a fleet of heterogeneous unmanned maritime systems Geert De Cubber and Rob Haelterman</p> <p>Paper A3-3: Cellular Automata based Decentralized Cooperative Collision Avoidance Control for Multiple Mobile Robots Erick Rodriguez-Seda and Catalina Rico</p> <p>Paper A3-4: Path Following of Autonomous Mobile Robot with Distance Measurement using RFID Tags Suvankar Barai</p> <p>Paper A3-5: Vehicle-Terrain Parameter Estimation for Small-Scale Unmanned Tracked Vehicles Albert Espinoza, Jorge Torres-Filomeno, Karla Montañez-Sanchez and Angel Ortiz-Andujar</p>
12:30 --1:30	<p>LUNCH (Forest Room)</p> <p>Guest Speaker</p>
1:30 – 3:00	<p>Session B1: Session Title - Flying and Swarm Robots (Room 1435),</p> <p>Session Chair/Co-chair:</p> <p>Paper B1-1: On the Development of Integrated Swarm Command and Control Systems Karl Van Orden, Jeff Waters and Rebecca Iden</p> <p>Paper B1-2: Collaborative UAV Surveillance Winston Smith and Henry Hexmoor</p> <p>Paper B1-3: Swarmathon: A Swarm Robotics Experiment For Future Space Exploration Luong Nguyen, Thomas Harman and Carol Fairchild</p>

1:30 – 3:00	<p>Session B2: Session Title- Mobile Robots and Applications II (Room 1437)</p> <p>Session Chair/Co-chair:</p> <p>Paper B2-1: Super Twisting Sliding Mode Control of Spherical Robot Sansar Bastola</p> <p>Paper B2-2: Rescue Boat Path Planning in Flooded Urban Environments Mehmet Ozkan, Luis Rodolfo Garcia Carrillo and Scott A. King</p> <p>Paper B2-3: Tracking of Targets in Mobile Robots Based on Camshift algorithm Xin Zhang, Jiang Lu, Xingang Fu, Xiaokun Yang, Ishaq Unwala and Ting Zhang</p>
1:30 – 3:00	<p>Session B3: Session Title - Control and Sensors for Robots (Room 1439)</p> <p>Session Chair/Co-chair:</p> <p>Paper B3-1: Development Considerations for Implementing a Voice-Controlled Spacecraft System George Salazar</p> <p>Paper B3-2: Introducing Bobble-Bot: An Educational Platform for Real-Time Control in ROS and ROS2 Mike Moore, James Holley and Josh Sooknanan</p> <p>Paper B3-3: Sensor Fusion Localization Algorithms Evaluation for a Simulated Robot Covering Large Areas Lucas Marins Batista, Valéria Loureiro da Silva, Mateus Amarante Araújo and Rafael Barreto Lopes</p>
3:00-3:30	<p>BREAK</p>
3:30 - 5:00	<p>Session C1: Session Title - Inspection and Industrial Applications (Room 1435)</p> <p>Session Chair/Co-chair:</p> <p>Paper C1-1: Eliminating residual sway of crane loads based on laser slot sensor information Bálint Kiss and Gábor Vámos</p> <p>Paper C1-2: Fault Detection and Harmonics Mitigation in Diesel Electric Ships Using IIOT Edge Devices Kotesh Rao, Irfan Khan and Vidyasagar Asalapuram</p> <p>Paper C1-3: A Novel Architecture for Condition Based Machinery Health Monitoring on Marine Vessels Using Deep Learning and Edge Computing Vidyasagar Asalapuram, Irfan Khan and Kotesh Rao</p>
3:30 - 5:00	<p>Session C2: Session Title- Navigation, Path Planning, and Communication for Robots (Room1437)</p> <p>Session Chair/Co-chair:</p> <p>Paper C2-1: Finger Motion Measurement System for Telexistence Hand Manipulation Yasuyuki Inoue, Fumihiro Kato and Susumu Tachi</p> <p>Paper C2-2: In-Tank Sensor Error Prediction and Modeling James Dabney and Fathi Ghorbel</p> <p>Paper C2-3: Tool Path Generator for Artistic Drawing with Industrial Robot Michal Adamík, Andrej Babinec and Luboš Chovanec</p>

3:30 - 5:00	Session C3: Session Title- Advances in human-robot Collaboration Session Chair/Co-chair: Paper C3-1: Design of Low-Cost Human-Machine Collaboration Robot Jose Gonzalez and Weining Feng Paper C3-2: Progress in Human-Robot Collaboration for Object Handover Daniel Leal and Yimesker Yihun Paper C3-3: Identifying Variables that Improve Communication with Bots Schenita Floyd	(Room 1439)
6:30 -- 9:00	FRIDAY NIGHT DINNER	
Saturday 21st, September-2019 (The University of Houston-Clear Lake Bayou Building)		
7:00 AM	Continental Breakfast (Forest Room)	
08:30: --9:30	Keynote 2: Robotic Assistance to Prevent, Detect, Measure, Protect Manage CBRNE Risks Forest Room Speaker: Prof. Yvan Baudoin, EM Royal Military Academy, Belgium	
09:30: -- 12:00	Session D1: Session Title -Training and Education applied to Robotics Session Chair/Co-chair: Paper D1-1: Free response evaluation via neural network for an IMathAS system Nathanial Wiggins and Milton Smith Paper D1-2: An Open Real-Time Audio Processing Platform on Zync FPGA Kevin Vaca, Mitchell Jefferies and Xiaokun Yang Paper D1-3: Contribution to e-Training for Unmanned Robotic Systems Andrzej Maslowski Paper D1-4: EDF Scheduling of Industrial Robotic Manufacturing Tasks Pallovi Romero Paper D1-5 : Interactive Screen for Educational Purposes In Robotics Michal Tölgyessy, Martin Dekan and Peter Hubinsky	(Room 1435)
09:30: -- 12:00	Session D2: Session Title- Robotics for Human Performance and Rehabilitation and Medical Applications II Session Chair/Co-chair: Paper D2-1: Magneto-electric Nano-robots for Biological Cell Poration Shadeeb Hossain, Brandon Young, Amar Bhalla and Ruyan Guo Paper D2-2: Haptic Display Glove Capable of Force/Vibration/Temperature Fumihiro Kato, Yasuyuki Inoue and Susumu Tachi Paper D2-3: An affordable hybrid trans-humeral prosthesis with electromyography and active vision system Duy Nguyen Phuong and Thanh Pham Chi Paper D2-4: Human-Centered Deep Learning Neural Network Trained Myoelectric Controller for a Powered Wheelchair Ashley Stroh and Jaydip Desai	(Room 1437)

	<p>Paper D2-5 : Force Myography Controlled Intelligent Assistive Wheelchair-Mounted Robotic Exoskeleton for Arm Movements Jaydip Desai, Bridget Schabron and Yimesker Yihun</p>
<p>09:30: -- 12:00</p>	<p>Session D3: Session Title - Robots and Various Topics (Room 1439) Session Chair/Co-chair:</p> <p>Paper D3-1: Circadian Rhythm Light Watch Richard Castaneda</p> <p>Paper D3-2: Lessons Learned from the Development of an Affordable Open-Source Based Humanoid Socially Assistive Robot Pablo Rangel, Kimberly Brotherton, Erika Anderson, Adam Hennad, Aaron Vera and Matthew Plotkin</p> <p>Paper D3-3: Robotics and Deep Learning Framework for Structural Health Monitoring of Utility Pipes Muhammad Khan, Nansong Wu, Kaimen Zeng and Ishaq Unwala</p> <p>Paper D3-4: MFCC based Houston Toad call Detection using RNN and CNN Abdullah Al Bashit and Damian Valles</p> <p>Paper D3-5: Protection of Space Exploration Structures Using an Acoustic Flame Suppression System Osvaldo Salinas, Joshua Rodriguez, Juan Giraldo, Justin Tarwater, Riki Barron and Nathaniel Wiggins</p> <p>Paper D3-6 : Autonomous Color Based Object Tracking of a Hexapod with Efficient Intuitive Characteristics Shahriar Ahmad, Saeed Moazami and Hassan Zargarzadeh</p>
<p>12:00 --13:30</p>	<p>ISMCR Concluding Remarks</p> <p>Boxed Lunch</p>
<p>13:30 – 14:30</p>	<p>UHCL Robotic Lab Visit</p>