

INNOVATION 2013

and

Workshop on Automation and Robotics (WAR) 2013

PROGRAM

FRIDAY, October 25th, 2013,

DISCOVERY ROOM, NASA JSC, Gilruth Center

Entrance from Space Center Blvd, Gate #5 (between NASA Rd 1 & Bay Area Blvd)

8:15 – 8:30 AM	Registration & Coffee
8:30 – 8:40 AM	Welcome: Michael Frostad, AIAA Houston Chair Zafar Taqvi, Ph.D (AIAA A&R TC Chair), General Co-Chair

ALL SESSIONS IN DISCOVERY ROOM

	WAR 1 – COMPLEX SYSTEMS and CONTROL
8:40 – 9:00 AM	Topic: When Strong A.I. Met Game A.I. Presenter: Dr. Paul Frenger, MD, A Working Hypothesis Inc
9:00 – 9:20 AM	Topic: Causal Groupoid Symmetries tame Complexity Presenters: Sergio Pissanetzky & Liwen Shih, UHCL
9:20 – 9:40 AM	Topic: MODELING AND CONTROL OF TANKLESS WATER HEATERS Presenters: Chi Nguyen and James B. Dabney, UHCL
9:40 – 10:00 AM	Topic: Revolutionizing Prosthetics Software Technology Presenters: Andrew Harris, Kapil Katyal, Matthew Para, Justin Thomas, The Johns Hopkins U Applied Physics Laboratory (JHU/APL)
10:00 – 10:10 AM	Break

	WAR 2 – ROBOTICS and GAMES
10:10 – 10:30 AM	Topic: Localization of a Pollutant Using Multiple Autonomous Mobile Swarm Robot Agents Presenters: Aaron Schram and Stephen Emery, UHCL
10:30 – 10:50 AM	Topic: A Low-Cost Robot Implementation with Primitive Human Body Movements Presenters: Arif Ceber, Fatih Karabacak, and Hakduran Koc, UHCL
10:50 – 11:10 AM	Topic: Low Cost Moving Communication Tower Robot Presenter: Angusundaresh Krishnakumar, UHCL
11:10 – 11:30 AM	Topic: Close to Reality For Engineering Design: Scope of augmented reality technology Presenter: Zafar Taqvi, IEEE
11:30 – 11:50 AM	Topic: Designing Holographic & Interactive Simulation Software Presenter: Lei Wu, UHCL

LUNCHEON KEYNOTE

11:50 AM	Welcome: Paul Frenger, M.D. A Working Hypothesis Inc, General Co-Chair Liwen Shih, Ph.D., General Co-Chair
12:00 – 12:55 PM	Keynote Presentation: An Onboard ISS Virtual Reality Trainer Presenter: Evelyn Miralles, Principle Software Engineer, L-3 STRATIS Division NASA JSC Engineering Directorate, Software, Robotics, and Simulation Division Simulation and Graphics Branch

INNOVATION 2013 PROGRAM

	Innovation – 01 Energy
1:00 – 1:20 PM	Topic: Inertia First – A Natural Explanation of Dark Energy, Flat Space-Time, and Quantum Gravity Presenter: Robert L. Shuler, Jr., NASA JSC/EV5
1:20 – 1:40 PM	Topic: In Search for Black Gold – Oil Presenters: Dr. Gulamabbas A. Merchant, Electra-Magnetic Research and Development
1:40 – 2:00 PM	Topic: How Can We Have a Workhorse for the Evaluation of Alternative Energy Resources? Presenter: Zafar Taqvi, IEEE

	Innovation – 02 Telecom
2:00 – 2:20 PM	Topic: Packetized Dynamic Optical Switching in DWDM Multimode Switching Networks Presenters: Wenhao Chen, Linsen Wu, Yiyong Zha, Yuhua Chen*, ECE UH
2:20 – 2:40 PM	Topic: Using Mobile Devices to Capture Leaked Information from PC Keyboards Presenter: Nadia Halabi, UHCL
2:40 – 3:00 PM	Topic: A Low-Power Proprietary Wireless Communication Protocol Presenters: Fatih Karabacak, Arif Ceber and Hakduran Koc, UHCL

	Innovation – 03 Bio-Med
3:00 – 3:20 PM	Topic: Measuring Venous Blood Oxygenation in Fetal Brain using Susceptibility Weighted Imaging Presenters: Pavan Jella ¹ , Jaladhar Neelavalli ¹ , Uday Krishnamurthy ¹ , Swati Mody ² , Lami Yeo ^{3,4} , Yashwanth Katkuri ¹ , Bahado-Singh RO ⁴ , Sonia S Hassan ^{3,4} , Mark Haacke ¹ , Roberto Romero ³ , Moriah Thomson ^{2,3,5} ¹ Department of Radiology, Wayne State U, Detroit, Michigan, USA., ² Department of Pediatrics, Wayne State U, Detroit, Michigan, USA. ³ Perinatology Research Branch, NICHD, NIH, DHHS, Bethesda, Maryland, and Detroit ⁴ Department of Obstetrics and Gynecology, Wayne State U SOM, Detroit ⁵ Merrill Palmer Skillman Institute for Child and Family Development, Wayne State U
3:20 – 3:40 PM	Topic: Accelerating Tri-factors Breast Cancer Gene Transcription Mapping with Parallel MATLAB on a Supercomputing Cluster Presenters: Victor Shum ^{1,4} , Jinho Lee ^{1,2,3} , Abhinav Tiwari ² , Oleg A. Igoshin ² , Michael A. Mancini ³ , Liwen Shih ⁵ and Gábor Balázs ¹ , ¹ Department of Systems Biology, The U Texas M. D. Anderson Cancer Center ² Department of Bioengineering, Rice U ³ Department of Molecular and Cellular Biology, Baylor College of Medicine ⁴ Department of Physics, U of Houston ⁵ Department of Computer Engineering, U of Houston - Clear Lake
3:40 – 4:00 PM	Topic: Train the Artificial Brain – Diagnosis of Brain Tumors using Neural Network Presenter: Roma Pradhan, Friendswood High School
4:00 – 4:20 PM	Topic: Automatic Detection of Cellular Organelles from Digital Electron Microscope Images through Modified Clustering Techniques Presenter: Trung T. Pham, U de Talca, Talca, Chile

INNOVATION is organized by Clear Lake Council of Technical Societies (CLCTS) for JAIPCC Board with technical support from IEEE Galveston Bay Section Chapters, while WAR is organized by AIAA Houston Section Technical Committee on Automation and Robotics with technical support from other IEEE entities.

Registration Fee schedule -

Full day program which includes luncheon is \$20.00, Conference ONLY \$14, Additional Luncheon tickets \$10.00, All attendees to pay. All registrants will be provided final program. Registration fee will be due at the event. All no show registrants will be billed. Register by email to Dr Zafar Taqvi, Z.Taqvi@IEEE.ORG. **ONLY Limited lunches are available. This Event is held at GILRUTH CENTER , a public NASA/JSC facility accessible from Space Center Blvd**

<https://www.jsfcu.org/docs/Gilruth%20Center%20Directions%20&%20Map%202012.pdf>