OUR PROGRAM SCHEDULE IS BASED ON EASTERN TIME (ET - OTTAWA TIME)
CDSR'21 Scientific Committee Chair

Dr. Aparicio Carranza
New York City College of Technology, USA
Conference Chair
View Profile

Dr. Yang Shi
University of Victoria, Canada
Conference Co-Chair
View Profile

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### MAY 24

**ROOM 1**

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<tr>
<td>8:00 AM - 9:00 AM</td>
<td>Registrations</td>
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<tr>
<td>9:00 AM - 9:10 AM</td>
<td>Official Opening</td>
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<tr>
<td>9:10 AM - 09:55 AM</td>
<td><strong>KEYNOTE LECTURE</strong></td>
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<tr>
<td></td>
<td><strong>A Generic Model for Resilient Dynamic Systems</strong></td>
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<td></td>
<td>Dr. W.J. (Chris) Zhang, University of Saskatchewan, Canada</td>
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<td>09:55 AM - 10:40 AM</td>
<td><strong>KEYNOTE LECTURE</strong></td>
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<tr>
<td></td>
<td><strong>Throughput Optimization for Grant-Free Multiple Access with Multiagent Deep Reinforcement Learning</strong></td>
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<td>Dr. Vincent Wong, University of British Columbia, Canada</td>
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<td>10:40 AM - 10:55 AM</td>
<td>Break</td>
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<tr>
<td>Time</td>
<td>Session</td>
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<tr>
<td>10:55 AM - 11:55 PM</td>
<td>Session</td>
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<td><strong>Motion Control</strong></td>
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<td>11:55 AM - 12:25 PM</td>
<td>Lunch Break</td>
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<tr>
<td>12:25 PM - 01:10 PM</td>
<td><strong>High-Performance Micro Actuators with Applications</strong></td>
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<td>Dr. Ridha Ben Mrad, University of Toronto, Canada</td>
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<tr>
<td>01:10 PM - 01:55 PM</td>
<td>Session</td>
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<td></td>
<td><strong>Robotics I</strong></td>
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</tbody>
</table>
Dr. Zhang is a full professor at the University of Saskatchewan (Canada). Dr. Zhang received his Ph.D. from Delft University of Technology in 1994. His main research area is on human-machine systems, system science and engineering and their applications to manufacturing and service systems. Dr. Zhang has published over 300 papers in refereed journals or magazines and over 200 papers in refereed conference proceedings with his h-index of 55 (Google Scholar) and held over 10 patents. Dr. Zhang has been very active in editorial board work for several IEEE journals, including IEEE Transaction on Mechatronics (Senior Editor from 2019 to present), IEEE system journal, and IEEE SMC – system (present). Dr. Zhang is a fellow of Canadian Academy of Engineering (CAE), a fellow of ASME. Dr. Zhang was one of the most highly cited researchers in IEEE by Elsevier (China) in 2015 to 2018, respectively. Dr. Zhang developed the general knowledge model for systems called FCBPSS (F: function, C: context, B: behavior, P: principle, SS: state-structure). Dr. Zhang is one of the pioneer researchers in engineering resilience, particularly in manufacturing systems and robots.
Vincent Wong is a Professor in the Department of Electrical and Computer Engineering at the University of British Columbia, Vancouver, Canada. His research areas include protocol design, optimization, and resource management of communication networks, with applications to the Internet, wireless networks, smart grid, fog computing, and Internet of Things. Currently, he is an executive editorial committee member of the IEEE Transactions on Wireless Communications, an Area Editor of the IEEE Transactions on Communications and IEEE Open Journal of the Communications Society, and an Associate Editor of the IEEE Transactions on Mobile Computing. Dr. Wong is a Fellow of the IEEE.
SESSION
MOTION CONTROL
MAY 24 | 10:55 AM - 11:55 AM | SESSION CHAIR: DR. W.J. (CHRIS) ZHANG, UNIVERSITY OF SASKATCHEWAN, CANADA & DR. VINCENT WONG, UNIVERSITY OF BRITISH COLUMBIA, CANADA

Titles: Consistent Control Framework for Ambidextrous Robot Arm Using MANFIS Controller
CDSR 101
Time: 10:55 - 11:10
Presenter: Dr. Mashood Mukhtar, Brunel University London, UK
Authors: Mashood Mukhtar, Dhayaa Khudher, Tatiana Kalganova
View Paper

Titles: Physics-driven Locomotion Planning Method for Multilegged Robots
CDSR 106
Time: 11:10 - 11:25
Presenter: Fei Zhang, Beihang University, China
Authors: Fei Zhang, Yang Yu
View Paper

Titles: Attitude Task Allocation and Control in a Swarm of Magnetically Controlled CubeSats
CDSR 110
Time: 11:25 - 11:40
Presenter: Salman Ali Thepdawala, Skolkovo Institute of Science and Technology, Russian Federation
Authors: Ahmed Mahfouz, Nourhan Abdelrahman, Salman Ali Thepdawala
View Paper

Titles: Preliminary Trajectory Design for Cis-Lunar Libration Point Mission
CDSR 114
Time: 11:40 - 11:55
Presenter: Salman Ali Thepdawala, Skolkovo Institute of Science and Technology, Russian Federation
Authors: Salman Ali Thepdawala
View Paper

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Professor and Director, Mechatronics and Microsystems Design Laboratory, University of Toronto. He also serves since 2015 as Chief Research Officer and Associate Scientific Director of Mitacs and member of the Executive Team. He is also Chair of the Mitacs Research Council. Mitacs is a national organization that funds innovation across Canada. He is also a Co-founder and currently President and CTO of Sheba Microsystems Inc. a Toronto manufacturer of microactuators for miniature cameras for the smart phone, automotive and action camera markets.

He joined the University of Toronto in 1997, having previously held positions at the National Research Council of Canada, and the Ford Research Laboratory in Dearborn, Michigan. Ridha received a PHD in Mechanical Engineering from the University of Michigan, Ann Arbor in 1994. His research led to a number of patents and inventions including 30+ international patents, more than 300 refereed research publications and a number of technology licenses to industry. He received numerous teaching, research and professional awards including the Connaught Innovation Award in 2013 and in 2014. His recent activities include being Associate Editor of the Journal of Mechatronics (2015-current), serving on the Steering Committee of the IEEE Journal on Micro Electro Mechanical Systems (2010-current) and being a member of the IEEE IES Publication Committee (2013-current). He was in the recent past the founding Director of the Robotics and Mechatronics Institute and Associate Chair, Research of Mechanical and Industrial Engineering at the University of Toronto.
### Titles: Deep Learning-based Robot Control using Recurrent Neural Networks and Adaptive Sliding Mode Control  
**CDSR 113**  
**Time:** 01:10 - 01:25  
**Presenter:** Raj Sureshbhai Patel, Laurentian University, Canada  
**Authors:** Raj Sureshbhai Patel  

[View Paper](#)

### Titles: Integration and Control of a MEMS Optical Phased Array Scanner  
**CDSR 304**  
**Time:** 01:25 - 01:40  
**Presenter:** Tarek Mohammad, University of Toronto, Canada  
**Authors:** Tarek Mohammad, Siyuan He, Ridha Ben Mrad  

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### Titles: Kalman-filter-based Accurate Trajectory Tracking and Fault-Tolerant Control of Quadrotor  
**CDSR 302**  
**Time:** 01:40 - 01:55  
**Presenter:** Rajamani Doraiswami, The University of New Brunswick, Canada  
**Authors:** Rajamani Doraiswami, Lahouari Cheded, Marius Brinkmann  

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## MAY 25

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<th>Time</th>
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<tr>
<td>9:00 AM - 9:45 AM</td>
<td><strong>KEYNOTE LECTURE</strong>&lt;br&gt;An Overview and Performance Evaluation of an EPON-based 5G RAN Architecture enabled by Distributed Network Control Management&lt;br&gt;Dr. Syed R. Zaidi, Bronx Community College, USA</td>
</tr>
<tr>
<td>9:45 AM - 10:30 AM</td>
<td><strong>KEYNOTE LECTURE</strong>&lt;br&gt;Pushing Intelligence at the Edge: Edge-centric Inferential Analytics&lt;br&gt;Dr. Christos Anagnostopoulos, University of Glasgow, UK</td>
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<tr>
<td>10:30 AM - 10:45 AM</td>
<td><strong>BREAK</strong></td>
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<td>10:45 AM - 11:35 AM</td>
<td><strong>SESSION</strong>&lt;br&gt;Linear and Nonlinear Control</td>
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<tr>
<td>11:35 AM - 12:05 PM</td>
<td>Lunch Break</td>
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<td>12:05 PM - 12:50 PM</td>
<td><strong>SESSION</strong>&lt;br&gt;Robotics II</td>
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Titles: An Overview and Performance Evaluation of an EPON-based 5G RAN Architecture enabled by Distributed Network Control Management

Dr. Syed R. Zaidi, Bronx Community College, USA

Syed Rashid Zaidi received the M.S., M.Phil. and Ph.D. degrees in Electrical Engineering from City University of New York, NY, USA. He is currently Assistant Professor & Program Director of Cybersecurity & Networking Technology and Electronic Engineering Technology in The Department of Engineering, Physics & Technology of the Bronx Community College of The City University of New York. His research areas are Fiber Optics Communications, LTE, WiMAX, 5G, and next generation wireless networks and cybersecurity. He has received numerous awards, a recent one is a prestigious grant award from the U.S. Department of Education to update the Cybersecurity program and build the latest industrial-standard lab.
Dr Christos (Chris) Anagnostopoulos is an Associate Professor in Distributed and Pervasive Computing, School of Computing Science, University of Glasgow. His expertise is in the areas of context-aware large-scale distributed data systems and in-network information processing. He has received funding for his research by the EC/H2020, UK EPSRC and the industry. He is an author of over 150 refereed scientific journals/conferences. Chris is leading the Essence: Pervasive & Distributed Computing Lab within the Knowledge and Data Engineering Systems Group (IDA Section). Before joining Glasgow, Chris was an Assistant Professor at Ionian University and University of Athens. He has held postdoctoral positions at University of Glasgow and University of Athens in the area of mobile and context-aware computing. He holds a BSc, MSc, and PhD in Computing Science, University of Athens. He has served as a Programme Committee member and Session Chair in more that 20 international conferences in Computing Science, been Editorial Board member in Applied Intelligence and Distributed Sensor Networks journals, Guest Editor in special issues (Sensors and Machine Learning & Cybernetics journals), and Senior Editor in Open Computer Science. He has been a MSCA Fellowship Supervisor in University of Glasgow, is an Associate Fellow of the HEA and member of ACM, IEEE and IEEE STC.
### Titles: Passive Control Strategy for Multi-Tethered Tetrahedral Formation for Multipoint Scientific Measurements in LEO  
**CDSR 111**  
**Time:** 10:45 - 11:00  
**Presenter:** Basel Omran, Skolkovo Institute of Science and Technology, Russia  
**Authors:** Basel Omran, Dmitry Pritykin

### Titles: A New Strategy for Obtaining the Pointing Stability of Stabilized Platforms  
**CDSR 200**  
**Time:** 11:00 - 11:15  
**Presenter:** Mohammad Sadegh Mirzajani Darestani, Islamic Azad University of Arak, Iran  
**Authors:** Mohammad Sadegh Mirzajani Darestani, Parviz Amiri

### Titles: A Laboratory Method for Obtaining two Degrees of Freedom Gyroscopic Stabilizer Transfer Function  
**CDSR 201**  
**Time:** 11:15 - 11:20  
**Presenter:** Mohammad Sadegh Mirzajani Darestani, Islamic Azad University of Arak, Iran  
**Authors:** Mohammad Sadegh Mirzajani Darestani, Seyed Zeynolabedin Moussavi, Parviz Amiri

### Titles: Optimal Load-Aware Task Offloading in Mobile Edge Computing  
**CDSR 301**  
**Time:** 11:20 - 11:35  
**Presenter:** Odysseas Polycarpou, University of Glasgow, UK  
**Authors:** Odysseas Polycarpou, Christos Anagnostopoulos, Kostas Kolomvatsos
Titles: Accurate Target Tracking: A New Kalman Filter Residue-Based Approach Applied To a Nonlinear Multivariable Control System
CDSR 303
Time: 12:05 - 12:20
Presenter: Rajamani Doraiswami, University of New Brunswick, Canada
Authors: Rajamani Doraiswami, Lahouari Cheded, and Sreeraman Rajan

Titles: Plane Detection Based Object Recognition for Augmented Reality
CDSR 305
Time: 12:20 - 1:35
Presenter: Harrison Carranza, Vaughn College of Aeronautics and Technology, USA
Authors: Aparicio Carranza, Juan Estrella, Syed R. Zaidi, Harrison Carranza

Titles: New Kalman Filter Residue-Based Identification and Soft Sensor Design for Accurate Trajectory Tracking with a Fault-tolerant Robot
CDSR 306
Time: 12:35 - 12:50
Presenter: Rajamani Doraiswami, University of New Brunswick, Canada
Authors: Rajamani Doraiswami, Lahouari Cheded, Eduardo Jair Tito Mamani, Pamela Giselle Villarroel, Paul Gerardo Cori Mamani, Paulo Roberto Loma Marconi, Claudio Cesar Carlos Olivares, Justo Franz Choque Choque, Layde Aydee Cruz Torrico, Layde Aydee Cruz Torrico