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EDUCATION

- Postdoctoral Fellow** Robotics, Automation, and Mechatronics Laboratory, University of Toronto, 1998.
- Ph.D.** Mechanical and Industrial Engineering, University of Toronto, Robotics, Automation, and Mechatronics Laboratory, Fuzzy Intelligent Systems Laboratory, GPA 4.00, 1997.
- M.A.Sc.** Aerospace Engineering, Sharif U. Technology, Tehran, Iran, GPA 18.9/20, 1990.
- B.A.Sc.** Mechanical Engineering, Sharif U. Technology, Tehran, Iran, GPA 18.6/20, 1988.

PROFESSIONAL EXPERIENCE

- 2015 –** Chair, Onboard Space Systems, Luleå University of Technology, Kiruna, Sweden.
- 2006 –** Director, Space Mechatronics Group, U. Toronto Institute for Aerospace Studies (UTIAS), Toronto, Canada.
- 2001 –** Coordinator, Aerospace and Design Laboratories, UTIAS, Toronto, Canada.
- 1998 – 2001** Project Manager, Engineering Services Inc., Toronto, Canada.
- 1990 – 1992** Director, Systems Engineering Division, National Research Institute, Tehran, Iran.
- 1988 – 1990** Project Leader, Systems Control Group, National Research Institute, Tehran, Iran.

AWARD AND ACHIEVEMENT

- 2013** The MathWorks Featured Professor.
(http://www.mathworks.com/company/user_stories/reconfigurable-robot-enables-university-of-toronto-students-to-study-realistic-industrial-robots.html)
- 2005** Nominated for the National Technology Innovation Award by the Director of the Aerospace Institute.
- 2004** Nominated for the OPAS Award for Excellence in Teaching with Technology by the Dean of the University of Toronto Faculty of Applied Science and Engineering.
- 2003** The MathWorks Featured Professor.
(www.mathworks.com/academia/faculty_center/featured_prof/reza.html)

2000	University of Toronto Miracle Workers. (www.magazine.utoronto.ca/01autumn/f11.htm)
1995-96	University of Toronto Open Fellowship.
1990	The Minister's Graduate Award, The Ministry of Culture and Higher Education, Iran.
1990	First-rank graduate, Department of Mechanical engineering, Sharif University of Technology.
1988	First-rank Undergraduate, Department of Mechanical engineering, Sharif University of Technology.

POST GRADUATE SUPERVISION

Post Doc.	Vijay Muralidharan, Free-base Robotic Manipulation for Space Applications, 2015.
Post Doc.	Srinivasan Munisamy, Multi-agent Social Learning Architectures and Algorithms for Satellite/Rover Formation, 2015.
Post Doc.	Linsen Xu, Optimal Gait Planning and CPG-Based Control for Quadruped Robots, 2015.
Ph.D.	Niklas Anthony, Asteroid Redirection Mission Synthesis and Analysis, 2017.
Ph.D.	Lijun Zong, Hardware-in-the-loop Synthesis and Analysis of Space Manipulators, 2016.
Ph.D.	Tobias Roos, Nanosatellite/Robot Teams for the Exploration of Small Solar System Bodies, 2015.
Ph.D.	Moses Browne, Advanced Software Defined Radio Technology for Satellite Ground Segments, 2015.
Ph.D.	Rikard Ottemark, Hardware-in-the-loop Design and Simulation of Satellite Micro-propulsion Systems, 2015.
Ph.D.	Kanika Garg, Autonomous Navigation System for High-altitude Balloons, 2015.
Ph.D.	Chris Nieto, Concurrent Multidisciplinary Methodologies for Analysis and Synthesis of Nanosatellites, 2015.
Ph.D.	Sumeet Satpute, Onboard Trajectory Planning and Adaptive Synchronous Control of Multiple Nanosatellite Formation Flying, 2015.
Ph.D.	Houman Hakima, Legged Locomotion for Planetary Exploration, 2015.
Ph.D.	Michael Bazzocchi, Satellite Formation Approach to Asteroid Redirection for Resource Utilization, 2014.
Ph.D.	Victor Ragusila, Mechatronics by Analogy and Application to Legged Robotics, 2010. (graduated)
Ph.D.	Jason Kereluk, Reconfigurable Mechatronics and Application to Robot Manipulators, 2010. (graduated)
Ph.D.	Robin Chhabra, Hybrid Control of Free-flying Manipulators using Symplectic Geometry, 2008. (graduated)
Ph.D.	Adrian Martin, Control Ad Libitum and Application to Heterogeneous Robotic Teams, 2007 (graduated).
M.A.Sc.	Nathan de Decker, Optimization of Transfer Trajectories for Near-Earth Asteroid Redirection, 2016.
M.A.Sc.	Niklas Anthony, Feasibility Studies of Asteroid Redirection Mission, 2016.
M.A.Sc.	Steven Daniluk, Application of Robot Team Learning to Space Exploration, 2015.
M.A.Sc.	Ken Zhong, Free-base Robot Manipulation, 2013.
M.A.Sc.	Michael Bazzocchi, Systematic Assessment of Asteroid Redirection Missions, 2013 (graduated)

M.A.Sc.	Murtaza Bhora, Reconfigurable Robotic Rover, 2012. (graduated)
M.A.Sc.	Justin Girard, Robust Robot Team Learning, 2012. (graduated)
M.A.Sc.	Sina Shabestari, Sliding-mode Control of Legged Robots, 2011. (graduated)
M.A.Sc.	Larry Ng, Social Learning in Robotics Teams, 2010. (graduated)
M.A.Sc.	Delphine Ouvrey, Design and Development of a New Leg Mechanism, 2010. (graduated)
M.A.Sc.	Jason Kereluk, Reconfigurable Robotic Platform, 2008. (graduated)
M.A.Sc.	Victor Ragusila, Legged Robotics, 2008. (graduated)
M.A.Sc.	Michael-Anthony Tedesco, iTest: A Remote Access Motor Test-bed, 2007. (graduated)
M.A.Sc.	Peter Martin, Neuro-fuzzy Controller for Limb Rehabilitation, 2007. (graduated)
M.A.Sc.	Robin Chhabra, Linguistic Mechatronics, 2006. (graduated)
M.A.Sc.	Adrian Martin, Robotic Hardware-in-the-loop Simulation, 2006. (graduated)
M.A.Sc.	David Pitts, Analysis and Synthesis of the MR-1 Mobile Manipulator (co-supervisor), MIE, 1998. (graduated)

UNDERGRADUATE AND M.ENG. THESIS SUPERVISION

2001 – Present Supervised 55 fourth-year theses from the Engineering Science Division, and 18 M.Eng. projects from UTIAS and Institut Francais de Mécanique Avancée (IFMA), France.

GRANT AND CONTRACT (SELECTED, CANADA & SWEDEN)

Wallenberg Foundation Grant	\$3,300,000, 2017-2020.
Swedish National Space Board Grant	SNSB-NRFP3 (collaboration with RUAG), \$200,000, 2016–2020.
Rymd för Innovation och Tillväxt (RIT) Grant	\$1,900,000, 2015–2018.
Swedish National Space Board Grant	SNSB-NRFP3 (collaboration with SSC-Balloon), \$120,000, 2015–2019.
Swedish National Space Board Grant	SNSB-NRFP3 (collaboration with OHB-Sweden), \$100,000, 2015–2019.
Swedish National Space Board Grant	SNSB-NRFP3 (collaboration with SSC-SDR), \$120,000, 2015–2019.
Kempe Foundation Grant	\$130,000, 2015–2018.
Luleå University of Technology Labbfond	\$150,000, 2015–2018.
Luleå University of Technology Startup Grant	\$3,400,000, 2015–2019.
NSERC Discovery Grant	\$125,000, 2015-2020.
NSERC Discovery Grant	\$105,000, 2010-2015.
Kenneth Molson Foundation Grant	\$125,000, 2010-2015.
MITACS Globalink	\$10,000, 2015.
MITACS Globalink	\$6,000, 2014.
Canada-Brazil Science without Borders	\$6,000, 2013.
The UofT Commercialization Grant	\$10,000, 2011-2013.
Trivaris Commercialization Fund	\$6,000 + 10,000 in-kind, 2011.
MathWorks Development Fund	\$45,000 + \$20,000 in-kind, 2010-2013.
Kenneth Molson Foundation Grant	\$61,500, 2007-2009.
The UofT Provost's ITCF Fund	\$23,200, 2007.
PACE Fund	\$42,000 in-kind, 2007.

Thermo Fisher Scientific Fund	\$23,500 in-kind, 2006.
Microsoft Technology Academic Fund	\$53,500 in-kind, 2006.
Kenneth Molson Foundation Grant	\$54,200, 2004-2006.
DataMirror Co. Development Fund	\$7,000, 2005-2006.
The UofT Provost's ITCF Fund	\$15,830, 2004.
Scigiene Co. Development Fund	\$4,300, 2004.
Human Resources Development Canada	\$9,400, 2002-2005.
The UofT Provost's ITCF Fund	\$13,755, 2002.
Quanser Development Fund	\$3,800 in-kind, 2001.

RESEARCH COLLABORATION (SELECTED)

2016 – Present	<p>QB50 International Project</p> <p>An international consortium of 15 universities and research institute around the globe to launch and operate 50 cubesats (2U and 3U) in a string-of-pearls formation for in-situ, multi-point exploration of lower thermosphere (200-380km) as well as re-entry research and in-orbit technology demonstration of miniaturized onboard sensors.</p>
2016 - Present	<p>RUAG Space AB</p> <p>Collaborative research on concurrent agile validation and verification of on-board space embedded systems using hardware-in-the-loop design and simulation platform, funded by the company, Rymd för Innovation och Tillväxt, as well as Swedish National Space Board.</p>
2015 - Present	<p>OHB Sweden AB</p> <p>Collaborative research on multi-spacecraft formations for autonomous colocation and optimal and robust reconfiguration, funded by the company, Rymd för Innovation och Tillväxt, as well as Swedish National Space Board.</p>
2015 - Present	<p>Nanospace AB</p> <p>Collaborative research on the synthesis and analysis of the Nanospace micro-propulsion system for small satellites and fine maneuvers, funded by the company as well as Rymd för Innovation och Tillväxt.</p>
2015 - Present	<p>Swedish Space Corporation (SSC), Sweden</p> <p>Collaborative research on the design and development of an autonomous navigation system for high altitude balloons, funded by the company, Rymd för Innovation och Tillväxt, as well as Swedish National Space Board.</p>
2015 - Present	<p>Swedish Space Corporation (SSC), Sweden</p> <p>Collaborative research on software defined radio for satellite communications, funded by the company, Rymd för Innovation och Tillväxt, as well as Swedish National Space Board.</p>
2013 - 2015	<p>The MathWorks, Inc.</p> <p>The company provided to the Space Mechatronics group cash and in-kind funding, as well as its software development expertise, for the design and development of a Modular, Autonomously Reconfigurable Serial (MARS) manipulator.</p>
2012 - 2013	<p>Trivaris Ltd., McMaster Innovation Park</p> <p>Product design, market analysis, and commercialization of “Personal Mechatronics Laboratory,” an affordable, comprehensive and transparent collection of electronic boards suitable for design and prototyping mechatronic systems by students, researchers, and engineers.</p>
2010 - 2011	<p>Engineering Services, Inc., Canadian Space Agency</p>

Design and development of the Planetary Medium Manipulator System (PMMS) for the CSA's Exploration Core Program. The project aims at prototyping a terrestrial manipulator capable of performing a variety of tasks.

- 2010 – 2012** The MATIRA Project
A collaborative research with the Faculty of Physical Education on Movement Adaptations Through Intelligent Robotic Arm (MATIRA).
- 2009 – 2010** Festo Didactic GmbH & Co. KG, Germany
Collaborative R&D project to establish a global research and education gateway to flexible manufacturing using the Festo's state-of-the-art product i-Factory.
- 2008 – 2010** L'Institut Francais de Mécanique Avancée (IFMA), France
Joint research project with the French institute on remote access experimentation for research and education.
- 2007-2009** Faculty of Physical Education and Health, University of Toronto
Design and development of a robotic system for the Perceptual Motor Behaviour Laboratory as well as a real-time neuro-fuzzy control firmware for rehabilitation and recreation applications.
- 2006-2007** Thermo Fisher Scientific (formerly CRS Robotics)
Design and development of a robotic hardware-in-the-loop simulation platform for improving the design of the company's manipulators.

TEACHING EXPERIENCE

- 2001 - Present** AER201-Engineering Design. (4 sections)
This is a hybrid lecture/project-based course that involves nearly 200 students (4 sections) in hands-on design and implementation exercises through a variety of multidisciplinary projects. The course, with its unique design tools and facilities, has turned into a *flagship* course in providing top-ranked Engineering Science students a creative, practical design experience.
- 2003 - Present** AER525-Robotics.
This course is offered to graduate and undergraduate students across the Faculty. Due to the laboratory limitations, the course enrolment is limited to maximum 30 students. AER525 reaches its cap every year since its inception.
- 2005 - Present** AER1515-Intelligent Robotics
This course is offered to graduate students across Faculty. (Prerequisite AER525)
- 2006 - 2014** AER303-Aerospace Lab I and AER304-Aerospace Lab II.
These two courses are offered in the fall and winter semesters, respectively, of the third-year Aero option in the Engineering Science program. The course teaches fundamentals of experimentation and data acquisition and analysis through a series of laboratory experiments. A unique engineering portal has been developed for these courses, which enables students to remotely perform all the experiments, in addition to their physical attendance in the lab sessions, and analyze data, prepare report, and communicate with instructor and TAs from anywhere and at any time.
- 1997** MIE1316-Fundamentals of System Identification and Modeling.
- 1995 – 1996** MIE1062-Robot Dynamics and Kinematics.

DISCLOSED INVENTION

2016	Smooth Pro Putt Assist: a toolkit, combining algorithms, motor learning protocols, and an attachment to interface the putter and robot arm, which includes a force-transducer. University of Toronto, October 2016.
2012	MARS: The Modular and Autonomously Reconfigurable Serial-link Manipulator. University of Toronto, November 2011. The invention is being evaluated by the Innovations and Partnerships Office. A provisional patent is to be filed by August 2012.
2010	Personal Mechatronics Laboratory, University of Toronto. November 2010. The commercialization of the product is underway in collaboration with Trivaris Ltd.
2009	iTest: A Turn-key, Modular, Remotely-accessible Platform for Testing Motors, University of Toronto. Evaluated by the Innovations and Partnerships Office for commercialization. A patent was filed in September 2010.
2008	Intelligent Real-time Firmware for the Manipulation of Goal-directed Limb Movements, University of Toronto, September 2009.
2002	Software Package for Data Analysis, Classification, and Visualization of High-Throughput Microarray Genome Data, University of Toronto, February 2002.
2000	Software Package for Mobile Manipulator Dynamic Simulation,” University of Toronto, August 2000.
1999	A Systematic Fuzzy Modeling Algorithm and Software, University of Toronto, May 1999.

ADMINISTRATIVE EXPERIENCE

2013 - Present	Robotics Task Force, The IEEE Computational Intelligence Society.
2013 - Present	Scientific Committee, RSI/ISM International Conference on Robotics and Mechatronics.
2012 – Present	Engineering Design Education Group, Faculty of Applied Science and Engineering
2011 - Present	Associate Editor, International Journal of Advanced Robotic Systems.
2011	Guest Editor, Journal of Control Science and Engineering.
2009	Chair, Undergraduate Laboratories Planning Committee, UTIAS.
2001 – Present	Coordinator, UTIAS Aero-Design Undergraduate Laboratories.
2001 – Present	TA Coordinator, UTIAS.
2001 – 2006	Co-chair, Joint Health and Safety Committee, UTIAS.
2001 – 2006	Chair, Internet Committee, UTIAS.
2001 – 2006	UTIAS Representative, Faculty Health and Safety Committee, U. Toronto.
2001 – 2006	Member, Curriculum Committee, UTIAS.

MEMBERSHIP

- American Institute of Aeronautics and Astronautics (AIAA)
- Institute of Electrical and Electronics Engineers (IEEE)
- American Society for Engineering Education (ASEE)
- Professional Engineers Ontario (PEO)
- Society for Teaching and Learning in Higher Education (STLHE)
- North American Fuzzy Information Processing Society (NAFIPS)

- Society of Manufacturing Engineering (SME)

CERTIFICATION

- WSIB/CSPAAT Certified Member (Cert. ID C30822).
- Certified Master Designer, Microchip Technology Inc.
- Certificate Application Developer, Microsoft.
- Certificate in Advanced Presentation Skills Training, UofT Centre for Teaching Support and Innovation.

AFFILIATION

- Associate Editor, International Journal of Advanced Robotic Systems.
- Executive Member, “Robotics Task Force” of the IEEE Computational Intelligence Society
- Scientific Committee Member, RSI/ISM International Conference on Robotics and Mechatronics.
- International Program Committee Member and Session Chair, IFSA World Congress and NAFIPS International Conference.
- Program Committee Member and Session Chair, American Society of Engineering Education (ASEE) Annual Conference and Exposition.
- Session Chair, International Conference on Control, Automation, Robotics and Vision.
- Regular Reviewer, IEEE Transaction on Robotics and Automation, IEEE Transaction on Industrial Electronics, IEEE Transaction on Fuzzy Systems, and IEEE/ASME Transactions on Mechatronics.

PUBLICATION (SELECTED)

BOOK

- [1] M. R. Emami, *Multidisciplinary Engineering Design: from theory to practice*, McGraw-Hill Ryerson, New York, USA, 2016. ISBN 9781259650772.

BOOK CHAPTER

- [2] M.R. Emami and R. Chhabra, “Chapter 12: Concurrent Engineering of Robot Manipulators,” in A. Lazinica and H. Kawai (ed.), *Robot Manipulators: New Achievements*, I-Tech Education and Publishing, Vienna, Austria, pp. 211-240, April 2010. ISBN 978-953-307-090-2.
- [3] A. Martin and M.R. Emami, “Chapter 19: Design and Simulation of Robot Manipulators Using a Modular Hardware-in-the-loop Platform,” in M. Ceccarelli (ed.), *Robot Manipulators*, I-Tech Education and Publishing, Vienna, Austria, pp. 347-372, April 2008. ISBN 978-953-7619-03-9.
- [4] A.A. Goldenberg, M.R. Emami, “Chapter 6: Kinematics and Dynamics of Robot Manipulators,” in S.Y. Nof (ed.), *Handbook of Industrial Robots*, John Wiley & Sons, Second Edition, pp. 79-98, March 1999. ISBN 9780471177838.

PATENT

- [5] M.R. Emami, J.A. Kereluk, *System, Method and Computer Program for Autonomously Emulating Robot Manipulators of Continuously-varying Configurations*, Granted Patent No. 9358687, Attorney Docket No. 15745-2 DAR, Allowance Confirmation 5552, May 2016.
- [6] M.R. Emami, M.A. Tedesco, *System, Method and Computer Program for Remotely Testing System Components over a Network*, Granted Patent No. US 8,447,554 B2, May 2013.

INVITED BOOK REVIEW

- [7] M.R. Emami, “Invited Book Review: Numerical Computing with Simulink,” *Reviews of Books and Teaching Materials, The American Statistician (JASA Reviews)*, Vol. 63, No. 3, pp. 285-286, August 2009.

JOURNAL PAPER

- [8] J.A. Kereluk, M.R. Emami, "Task-based Optimization of Reconfigurable Robot Manipulators," *Advanced Robotics*, August 2017, DOI: 10.1080/01691864.2017.1362995.
- [9] V. Muralidharan, M.R. Emami, "Concurrent Rendezvous Control of Underactuated Spacecraft," *Acta Astronautica*, Vol. 138, pp. 28-42, September 2017.
- [10] M.R. Emami, "Asteroid Engineering: Are we there yet?" *Journal of Science and Technology*, Pan European Networks, Issue 22, pp. 100-104, April 2017. <http://www.paneuropeannetworkspublications.com/ST22/#100>
- [11] R. Chhabra, M.R. Emami, Y. Karshon, "Reduction of Hamiltonian Reduction Systems with Affine Constraints: A Geometric Unification," *Transactions of ASME: Journal of Computational and Nonlinear Dynamics*, Vol. 12, No. 2, pp. 021007-1-14, March 2017.
- [12] L. Felicetti, M.R. Emami, "Attitude Coordination of Multiple Spacecraft for Space Debris Surveillance," *Advances in Space Research*, Vol. 59, Issue 5, pp. 1270-1288, March 2017.
- [13] S. Sadeghi, M.R. Emami, "Multi-spacecraft Studies of the Auroral Acceleration Region: From Cluster to Nanosatellites," *Advances in Space Research*, Vol. 59, No. 5, pp. 1173-1188, March 2017.
- [14] M.C.F. Bazzocchi, M.R. Emami, "An Assessment of Multiple Spacecraft Formation for Asteroid Redirection," *Transactions of the Japan Society for Aeronautical and Space Sciences, Aerospace Technology Japan*, Vol. 14, No. ists30, pp. 137-146, December 2016.
- [15] J. Girard, M.R. Emami, "A Robust Approach to Robot Team Learning," *Autonomous Robots*, Vol. 40, Issue 8, pp. 1441-1457, December 2016.
- [16] S. Shabestari, M.R. Emami, "Gait Planning for a Hopping Robot," *Robotica*, Vol. 8, No. 34, pp. 1822-1840, August 2016.
- [17] L. Ng, M.R. Emami, "Concurrent Individual and Social Learning in Robot Teams," *Computational Intelligence*, Vol. 32, No. 3, pp. 420-438, August 2016.
- [18] L. Felicetti, M.R. Emami, "A Multi-spacecraft Formation Approach to Space Debris Surveillance," *Acta Astronautica*, Vol. 127, pp. 491-504, July 2016.
- [19] J.P. Alepuz, M.R. Emami, J. Pomares, "Direct image-based visual servoing of free-floating space manipulators," *Aerospace Science and Technology*, Vol. 55, pp. 1-9, May 2016.
- [20] V. Ragusila, M.R. Emami, "Mechatronics by Analogy and Application to Legged Locomotion," *Mechatronics*, Vol. 35, pp. 173-191, May 2016.
- [21] M.C.F. Bazzocchi, M.R. Emami, "Comparative Analysis of Redirection Methods for Asteroid Resource Exploitation," *Acta Astronautica*, Vol. 120, pp. 1-19, March 2016.
- [22] R. Chhabra, M.R. Emami, "A Unified Approach to Input-output Linearization and Concurrent Control of Underactuated Open-chain Multi-body systems with Holonomic and Nonholonomic Constraints," *Journal of Dynamical and Control Systems*, Vol. 22, pp. 129-168, January 2016.
- [23] J.A. Kereluk, M.R. Emami, "A New Modular, Autonomously Reconfigurable Serial Manipulator Platform," *International Journal of Advanced Robotic Systems*, Vol. 12, No. 71, pp. 1-14, November 2015.
- [24] R. Chhabra, M.R. Emami, "A Linguistic Approach to Concurrent Design," *Journal of Intelligent and Fuzzy Systems*, Vol. 28, No. 5, pp. 1985-2001, June 2015.
- [25] J. Girard, M.R. Emami, "Concurrent Markov Decision Processes for Robot Team Learning," *Engineering Applications of Artificial Intelligence*, Vol. 39, pp. 223-234, March 2015.
- [26] S.F. Mousavi, J. Roshanian, M.R. Emami, "Quaternion-based Attitude Control Design and Hardware-in-the-loop Simulation of Suborbital Modules with Cold Gas Thrusters," *Journal of Aerospace Engineering*, vol. 229, pp. 717-735, March 2015.
- [27] R. Chhabra, M. R. Emami, "Symplectic Reduction of Holonomic Open-chain Multi-body Systems with Constant Momentum," *Journal of Geometry and Physics*, Vol. 89, pp. 82-110, February 2015.
- [28] R. Chhabra, M. R. Emami, "Nonholonomic Dynamical Reduction of Open-chain Multibody Systems: A Geometric Approach," *Mechanism and Machine Theory*, Vol. 82, pp. 231-255, 2014.
- [29] A. Martin, M.R. Emami, "A Dynamically Distributed Control Framework for Robot Teams," *International Journal of Robotics and Automation*, Vol. 29, Issue 3, pp. 312-318, July 2014.

- [30] A. Martin, M.R. Emami, "Just-in-time Cooperative Simultaneous Localization and Mapping: A Robust and Efficient Particle Filter Approach," *International Journal of Robotics and Automation*, Vol. 29, No. 2, pp. 119-132, April 2014.
- [31] R. Chhabra, M.R. Emami, "A Generalized Exponential Formula for Forward and Differential Kinematics of Open-chain Multi-body Systems," *Mechanism and Machine Theory*, Vol. 73, pp. 61-75, March 2014.
- [32] R. Chhabra, M.R. Emami, "A Holistic Approach to Concurrent Engineering and Its Application to Robotics," *Concurrent Engineering: Research and Applications*, Vol. 22, Issue 1, pp. 48-61, February 2014.
- [33] P. Martin, M.R. Emami, "A Neuro-fuzzy Approach to Real-time Trajectory Generation for Robotic Rehabilitation," *Robotics and Autonomous Systems*, Vol. 62, Issue 4, pp. 568-578, February 2014.
- [34] M.A. Tedesco, M.R. Emami, "A Modular and Turn-key Remote-Access Hardware-in-the-loop Platform for Testing Electric Motors," Accepted for publication in *Journal of Advanced Mechanical Design, Systems and Manufacturing*, Vol. 8, Issue 1, pp. 1-15, February 2014.
- [35] V. Ragusila, M.R. Emami, "Modelling of a Robotic Leg using Bond Graphs," *Simulation Modelling Practice and Theory*, Vol. 40, pp. 132-143, January 2014.
- [36] A. Martin, M.R. Emami, "A Fault-tolerant Approach to Robot Teams," *Robotics and Autonomous Systems*, Vol. 61, Issue 12, pp. 1360-1378, December 2013.
- [37] V. Ragusila, M.R. Emami, "A Novel Robotic Leg Design with Hybrid Dynamics," *Advanced Robotics*, Vol. 27, No. 12, pp. 919-931, December 2013.
- [38] R. Chhabra, M.R. Emami, "A Holistic Concurrent Design Approach to Robotics using Hardware-in-the-loop Simulation," *Mechatronics*, Vol. 23, Issue 3, pp. 335-345, April 2013.
- [39] A. Martin, M.R. Emami, "Dynamic Load Emulation in Hardware-in-the-Loop Simulation of Robot Manipulators," *IEEE Transactions on Industrial Electronics*, Vol. 58, No. 7, pp. 2980-2987, July 2011.
- [40] R. Chhabra, M.R. Emami, "Holistic System Modeling in Mechatronics," *Mechatronics*, Vol. 21, No. 1, pp. 166-175, February 2011.
- [41] M.G. Helander, M.R. Emami, "A Comparison of Learning Outcomes in Remote and Proximal Laboratories Using Identical Computer Interface," *Computers & Education*, Accepted with minor modifications, Revised manuscript submitted in December 2011.
- [42] M. Helander, M.R. Emami, "Engineering eLaboratories: Integration of Remote Access and eCollaboration," *International Journal of Engineering Education*, Vol. 24, No. 3, pp. 466-479, March 2008.
- [43] W.W. Melek, A.A. Goldenberg, M.R. Emami, "A Fuzzy Noise-Rejection data Partitioning Algorithm," *International Journal of Approximate Reasoning*, Vol. 38, No. 1, pp. 1-17, January 2005.
- [44] D. T. Pitts, M.R. Emami, A.A. Goldenberg, "Design and Analysis of Mobile Manipulators: A Case Study," *International Journal of Robotics and Automation*, Vol. 20, Issue 3, pp. 73-82, 2005.
- [45] M.R. Emami, A.A. Goldenberg, I.B. Turksen, "Fuzzy-logic Control of Dynamic Systems: From Modeling to Design," *IFAC Journal of Engineering Applications of Artificial Intelligence*, Vol. 13, pp. 47-69, 2000.
- [46] M.R. Emami, A.A. Goldenberg, I.B. Turksen, "Systematic Design and Analysis of the Fuzzy-logic Control and Application to Robotics, Part I: Modeling," *Robotics and Autonomous Systems*, Vol. 33, pp. 65-88, 2000.
- [47] M.R. Emami, A.A. Goldenberg, I.B. Turksen, "Systematic Design and Analysis of the Fuzzy-logic Control and Application to Robotics, Part II: Control," *Robotics and Autonomous Systems*, Vol. 33, pp. 89-108, 2000.
- [48] M.R. Emami, I.B. Turksen, A.A. Goldenberg, "A Unified Parameterized Formulation for Reasoning Process in Fuzzy Modeling and Control," *Fuzzy Sets and Systems*, Vol. 108, Issue 1, pp. 59-81, 1999.
- [49] M.R. Emami, I.B. Turksen, A.A. Goldenberg, "Development of A Systematic Methodology of Fuzzy-logic Modeling," *IEEE Transactions on Fuzzy Systems*, Vol. 6, No. 3, pp. 346-361, 1998.

REFEREED CONFERENCE PAPER

- [50] S.G. Satpute, M.R. Emami, "Concurrent Station Keeping and Momentum Management of Geostationary Satellites," Proc. 17th *International Conference on Control, Automation and Systems (ICCAS 2017)*, Jeju, South Korea, October 18-21, 2017.

- [51] M.B. Mwakyanjala, M.R. Emami, J. van de Beek, "Verification of Phase and Frequency Modulation for Software-defined-radio Baseband system Using Field Data," Proc. *AIAA International Communications Satellite Systems Conference (ICSSC 2017)*, Trieste, Italy, October 16-19, 2017.
- [52] H. Hakima, M.R. Emami, "Deorbiter CubeSat: Preliminary Design and Systems Engineering Budgets," Proc. *68th International Astronautical Congress (IAC 2017)*, Adelaide, Australia, September 25-29, 2017.
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- [116] M.R. Emami, "Space Systems: The State-of-the-Art," Invited Talk, 10th Anniversary of SpaceMasters Program, Nobel Museum, Stockholm, Sweden, November 4, 2015.
- [117] M.R. Emami, "Concurrent Design of Multidisciplinary Space Systems," Invited Talk, Space Graduate School Kick-off Meeting, Luleå University of Technology, Luleå, Sweden, October 1, 2015.
- [118] M.R. Emami, "Onboard Space Systems," Invited Talk, Svenska Rymdforskarens Samarbetsgrupp (SRS) Meeting, Gothenburg, Sweden, March 11, 2015.
- [119] M.R. Emami, "Space Mechatronics Group and Prospective Research on Onboard Space Systems," Invited Talk, department of Computer Science, electrical and Space Engineering, Lulea University of Technology, Lulea, Sweden, April 30, 2014.
- [120] M.R. Emami, "A Modular, Autonomously Reconfigurable Serial Manipulator for Advanced Manufacturing," International Conference on Emerging Industry, Shenzhen, China, Nov. 6-7, 2013.
- [121] M.R. Emami, "Presentation: A Concurrent Approach to Robot Team Learning," 2013 IEEE Symposium Series on Computational Intelligence, Paper #0205, Session RIIS, Singapore, April 16-19, 2013. (Nominated for the Best Paper Award, and made it to the top three papers from a pool of 50 papers.)
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- [127] M.R. Emami, "Invited Panelist: M423 - Preparing Students for Industry via Low-cost Robotics Labs," 119th ASEE Annual Conference and Exhibition, San Antonio, June 10-13, 2012.
- [128] M.R. Emami, "Interview with CBC's The National," Toronto, December 2011.
- [129] M.R. Emami, "4-day Workshop: Personal Mechatronics Lab: A Multidisciplinary Engineering Toolkit for Research and Education," 2012 Microchip MASTERS Conference, Phoenix, U.S.A., August 24-27, 2011.

- [130] M.R. Emami, "Seminar Series: Remote Access Laboratories," Khajeh Nasir Toosi University (KNTU), Tehran, Iran, July 20-21, 2011.
- [131] M.R. Emami, "10-day Workshop on Fundamentals of Engineering Pedagogy," Faculty of Engineering, Sharif University of Technology, Tehran, Iran, July 9-19, 2011.
- [132] M.R. Emami, "Talk: A Reconfigurable Robotic Platform for Teaching and Education," MathWorks Professors Meeting, Vancouver, June 25, 2011.