RESUME
Dr. Alejandro Ramírez-Serrano

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April 15, 2019

EDUCATION:

2001-2002 **Post-Doctoral R&D Fellow**, Nuclear Technology Division, Argonne National Lab-West, USA
Develop control and fault diagnosis solutions for robotics and autonomous systems applicable to nuclear energy and automation systems.

1997-2000 **Doctor of Philosophy (Ph.D.)**, Mechanical Engineering / Control of Discrete-Event Systems (DES)
University of Toronto, Toronto, Canada
Dissertation: Extended Moore Automata for the Supervisory Part-Flow Control of Virtual Manufacturing Workcells using robotic systems to enhance system adaptability and reconfiguration.

1994-1996 **Master of Science (M.Sc.)**, Computer Science / Artificial Intelligence
Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Mexico City Campus
Thesis: Autonomous Navigation of Mobile Robots Using Fuzzy Logic, Graduated with Honors

1992-1993 **Master of Science (M.Sc.)**, Mechanical and Aerospace Engineering
Illinois Institute of Technology, Chicago, IL, USA
Thesis: Neural Network Prediction of the Flowfield over Unsteady Airfoils with applications to unmanned and manned aerial vehicles.

1988-1994 **Bachelor of Engineering (B.Sc.)**, Mechanical Engineering / Design
Universidad Autónoma Metropolitana, Campus Azcapotzalco, Mexico City
Thesis: Design of a novel hydraulic motor for resilient robot manipulators.

AWARDS AND RECOGNITIONS:

2017

- **2017 Schulich School of Engineering Achievement Award:** for outstanding R&D work on robotics and unmanned vehicles as well as for the supervision on successful graduate students and collaborators who have generated the creation of a number of companies (e.g., ComplexSys, 4Front Robotics, RX Robots, etc).
- **2017 (finalist) UAE Drones for Good award competition:** Selected among more than 1000 entries from around the world.

2016

- **2016 UAE Drones for Good award competition (2nd Place):** Dr. Ramirez-Serrano's developments in deploying UAVs in confines spaces received 2nd place among more than 1017 submissions from 167 countries.

2015

- **2015 "Indra's International Community Award: From Idea to Reality (2nd Place):** Dr. Ramirez-Serrano's ground breaking UAV developments received 2nd place as the most voted proposal by the Drones for Good Community.

2014

- **2014 ASTech Award Winner:** received the 2014 Award in the category of Applied Technology: Outstanding Achievement in Applied Technology and Innovation, for work over the past 10 years developing game changing UAV technology. The ASTech Awards are Alberta's highest Science and Technology honor.
- **2014 World Innovation Day (3rd place):** In collaboration with UofC's Faculty of Medicine and the AB Children's Hospital developed artificial Intelligence human-robot cooperation software tools implemented on a small humanoid robot to distract children undergoing diverse medical procedures to reduce their distress (pain and anxiety).
- **2014 Price of Excellence World Innovation Competition:** Innovation for Health Competition showcasing innovative work in the use of humanoid robotics for pediatric care and clinical trial results within clonic and children's hospitals.

2013

- **2013 Service Excellence Award:** The University of Calgary, The Schulich School of Engineering for outstanding performance in supporting the school in diverse events and activities as director of the graduate program within the department of Mechanical Engineering.

2012

- **2012 National Aviation and Space Museum:** Our work in the area of highly maneuverable UAVs was selected among all R&D work in the area of UAV and aviation across Canada to be featured at the National Aviation and Space Museum in Ottawa (May-Nov 2012).

1994-2011

- **2011 Graduate Educator Award:** The University of Calgary, The Schulich School of Engineering
- **2010-2011 Graduate Educator Award:** Univ. of Calgary for work conducted in supervising and guiding graduate students within the department of Mechanical and Manufacturing Engineering.
- **2007-2008 Teaching Excellent award in Mechanical Engineering:** Univ. of Calgary for work in supervising students in courses as well as developmental research projects at the undergraduate and graduate levels.
- **2001 King-Sun Fu Memorial Best Transactions Paper Award Nomination:** Ramirez-Serrano, Sriskandarajah and Benhabib, "Automata-Based Modeling and Control Synthesis for Manufacturing Workcells with Part-Routing Flexibility", *IEEE Trans. Robotics & Automation*, V.16, No.6, pp.807-823, Dec. 2000.
- **1998-2000 National Council for Science and Technology of Mexico Scholarship:** National award provided to conduct R&D work in the area of Mechanical and Industrial Engineering.
- **1997-2000 University of Toronto International Student Award:** Outstanding research yearly award to conduct research in robotics and flexible manufacturing
- **1997-1998 University of Toronto Open Doctoral Fellowship:** Entrance PhD research award.
- **1996 IEEE-Mexico Diploma and Recognition:** 1st National Micro-Robotics Rover Contest demonstrating novel navigation and control of mobile ground vehicles in unstructured environments.
- **1994-1996 ITESM Fellowship:** Award to conduct research and development in robots in the computer science department, Mexico City campus.

EMPLOYMENT HISTORY:

2013 (April)-present **Professor (tenure)**, Dept. of Mechanical Eng., **University of Calgary**, Canada

- Perform Research and Development activities in the area of novel control methods for mobile robot teams and their application in Urban Search & Rescue (USAR), civil, security, and military applications.
- Contribute to the overall teaching and research missions of the department in the areas of Artificial Intelligence, Control of novel robotic and manufacturing systems.

2016 -present **Advisory Board member**, **Genesis Robotics**.
- Perform advisory functions in making scientific and technical contributions to the development of a revolutionary new robotic actuator (Live Drive) system.

2012 (Aug)-present **Founder and CEO**, **4Front Robotics Ltd**.
- Perform company related activities in Research, Development, sales and agreements & contracts related to Unmanned Vehicle Systems for complex and confined GPS denied environments.

2010(July)-2014 (Oct) **Director of the Graduate Program**, Dept. of Mechanical Eng. **Univ. of Calgary**, Canada

2007-2013(March) **Associate Professor (Tenure)**, Dept of Mech. Eng., **University of Calgary**, Canada
- Perform Research and Development activities in the area of novel control methods for mobile robot teams and their application to USAR and security applications for infrastructure security.
- Contribute to the overall teaching and research missions of the department in the areas of Artificial Intelligence, Control of novel robotic and manufacturing systems.

2007(June)-Dec. 2011 **Director/Board member Canadian Centre for Unmanned Vehicle Systems (CCUVS)**

2006(Jan)-2010(June) **Director Manufacturing Eng. Program**, Dept. of Mech. Eng., **Univ. of Calgary**, Canada

2002-2007 **Assistant Professor (Tenure Track)**, Department of Mech. Eng., **University of Calgary**, Canada
- Perform Research and Development activities in the area of novel control methods for mobile robot teams and reconfigurable manufacturing workcells applied to SAR and infrastructure security.

2001-2002 **Post-Doctoral R&D Fellow**, Nuclear Technology Division, **Argonne Natl. Laboratory-West**, USA
- Develop novel control and fault diagnosis solutions for DES and safety, applicable to nuclear energy and automation systems
- Implement algorithms of polynomial complexity for testing diagnosability and constructing diagnosers using high level languages.

2000-2003 **Development Engineer**, Mechatronics and Software Systems, **ABB Corporate Research**, Sweden
- Conceptualize and execute experimental intelligent software programs and analytical control methodologies for autonomous automation systems, e.g., mobile robots and intelligent devices, in both laboratory and industrial plant environments.
- Develop software tools using Java processors within the area of "User interface for industrial automation applications".
- Project leader within the DES Virtual Factory project performing system design and analysis tasks for the development of virtual manufacturing systems.

1997-2000 **Research Assistant**, Computer Integrated Manufacturing Laboratory, **University of Toronto**, Canada
- Supervised research associates and students including tasks assignment in the Discrete-Event system control research group.
- Developed novel approaches for the control of flexible manufacturing systems.
- Implemented algorithms for control using high level languages.
- CIMLab manager:
  - Maintained computer network, Purchased software/hardware

1998-2000 **Teaching Assistant**, Dept. of Mechanical and Industrial Engineering, **University of Toronto**, Canada
- Tutored undergraduate and graduate students in manufacturing and control courses.
- Administered and graded assignments, quizzes and exams

1994-1996 **Associate Professor**, Computer Science Department, **ITESM - Mexico City campus**, Mexico
- Established collaborative research projects with the University of Texas, NSF, and CONACyT.
- Introduced new courses into the curricula.
- Reviewed robotic books for their translation into Spanish.
- Developed novel fuzzy logic navigational systems for mobile robots and dexterous manipulators.
- Contributed to the overall teaching and research missions of the Department.

1994 **Assistant Professor**, Mechanical Engineering Department, **Univ. Autonoma Metropolitana**, Mexico
- Contributed to the overall undergraduate teaching and research activities of the Department.

1993 **Research Assistant**, Dept. of Mechanical and Aerospace Eng., **Illinois Institute of Technology**, Chicago, IL, USA
- Designed neural network architectures to predict and control the flowfield over unsteady airfoils for their application in combat aircrafts.

1991-1992 / summer 1993 **Research and Teaching Assistant**, Department of Energy, **Univ. Autonoma Metropolitana**, Mexico
- Managed hardware and software equipment in the computer laboratory.
- Performed advisory duties in the use/purchase of computer hardware/software for research projects.
- Designed and constructed/implemented direct drive industrial robot arms.

1991-1992 **Research Fellow**, R&D **Center for Alternative Energy Sources** (CIEDAC), Mexico
- Developed and tested solar energy equipment.
- Conducted assessment (analytical and experimental) of novel solar panels.
- Gathered and analyzed field data regarding solar energy.

OTHER PROFESSIONAL ACTIVITIES:

2012 **Founder and CEO**: 4Front Robotics.
2009-2011 **Member** of the Technical Program Committee for ICAS 2010 and 2011.
2007 **P.Eng. APEGA:** Professional Engineer status in Alberta (Sept. 11, 2007 – present)
2006 **Member-board of directors:** Canadian Centre for Unmanned Vehicle Systems (Jan. 2006 – 2011)
2005-2007 **Secretary**: IEEE Southern Alberta Section (January 2005 – Dec 2007)
2004-2011 **Founder and Director** Autonomous Reconfigurable/Robotic Systems Laboratory - Univ. of Calgary. The AR^{2}S-Lab performs R&D work in the area of unmanned vehicle systems.
2003 **Founder Member and Group Leader**, DES (discrete event systems) R&D - Univ. of Calgary, performing R&D work towards on discrete event systems applied to intelligent reconfigurable systems.
2003 **Member of the Intl Program Committee**, Robotics and Applications Intl Conf., Salzburg, Austria.
2003 **Member of the Intl Program Committee**, Neural Networks & Computational Intelligence, Mexico.
2003 **Session Chair**, 19th Canadian Congress on Applied Mechanics, Calgary, Alberta, June 1-5, 2003
2002-2003 **Member of the Intl Program Committee**, Information and Knowledge Sharing Intl Conf., USA.
2000-2002 **Member of the Intl Program Committee**, IASTED Intl Conf. on Control and Applications.
1999 **Volunteer**, IEEE Intl Conf. on Robotics and Automation, Assistant manuf. control session organizer.
1999 **Session Chair**, Intl Symp. on Computational Intelligence in Robotics and Automation, Monterey, CA.
1998 **Session Chair and Referee**, 4th World Congress on Expert Systems, Mexico City, December 1998.

ADDITIONAL SKILLS:

Engineering:

- Computer Integrated Manufacturing, Robot and CNC Programming, Manufacturing Process Control, Programmable Logic Controllers, Mobile Swarm Robotics

Computing:

- **Programming**: C, C++, HTML, Python, PLC Ladder Logic, Java, Pascal
- **Engineering software**: Mathematica, Matlab, MathCAD, Orcad, I-DEAS, LabView, V-Rep
- **Operating systems**: Windows, DOS, UNIX, Macintosh Systems, Sun O/S, and ROS
- **Design software**: Solidworks, AutoCAD, ANSYS
- **Work software**: Microsoft Word, Microsoft Excel, Power Point

Languages:

- Fluent in Spanish and English
- Basic knowledge of Swedish

Interpersonal:

- Excellent problem solving and analytical skills and strong written and oral communication skills
- Strong management and leadership skills

PROFESSIONAL MEMBERSHIPS:

- **Member**: Institute of Electrical and Electronics Engineers (IEEE)
- **Member**: IEEE Robotics and Automation Society
- **Member**: IEEE Systems, Man and Cybernetics
- **Secretary**: IEEE Southern Alberta Section (2005)
- **Founder**: Asociación Metropolitana de Estudiantes de Ingenieria Mecánica (AMEIM)
- **Member**: Association for Unmanned Vehicle Systems International (AUVSI)
- **Member**: Unmanned Vehicle Systems Canada (UVS-Canada)

ACTIVITIES AND INTERESTS:

Mountain cycling, weight lifting, swimming, traveling and amateur astronomy

SUPERVISED GRADUATE STUDENTS:

(number in parenthesis indicate current graduate students under my supervision**):**

Post-doc-fellows: 3 (1) *PhD: 8 (6)* *MSc: 26 (6)* *BSc:* 19 (3)

FOUNDED START-UP COMPANIES:

(by graduate students & collaborators based on our R&D work**)**

4Front Robotics Ltd.: Develops highly maneuverable unmanned vehicles and robot navigation systems for complex confined spaces. www.4frontrobotics.com

ComplexSys: Provides engineering services and turn-key solutions to develop autonomous systems with R&D mechanical, electrical and software solutions. www.complexsys.ca

RXrobots: Provides humanoid robots for pediatric care using developed distraction mechanisms and human-robot interaction architectures. http://www.rxrobots.com

Cubit Engineering Inc.: Provides R&D engineering services and robotic engineering applied to oil and gas systems, inspection, maintenance, and repairs. https://cubitengcom.wordpress.com/

TOTAL RESEARCH GRANTS OBTAINED: (in the last 6 years): ~$6,300,000 CDN:

Examples of recent R&D grants received:

Engage grants (4 separate grants):	(2013-2018)	$100,000
NSERC Discovery Grant:	(2015-2020)	$145,000
SSE Core Research Equipment Initiative:	(2016)	$164,424
Near Earth Space Technologies (NEST) program:	(2017-2020)	$200,000
NSERC Create program (*PI: Dr. El-Sheimy*)	(2017-2022)	$1,650,000
Research Tools and Instruments:	(2017)	$150,000
NSERC CRD with Atlantis (*PI: Dr. Johansen*)	(2019-2023)	$3,849,299
Shastri Indo-Canadian Institute:	(2019-2020)	$20,000

PUBLICATIONS:

	Count (1995-2019)	Citation Count (2011-2018)
Refereed Journal Articles	43 (2 submitted)	435
Refereed Conference Articles	100 (2 submitted)	678
Books and Book Chapters	4	37
Magazine Articles	4	13
Total	**151 (4)**	**1163**

Citation count based on Google Scholar and other references.

Journal Papers:

J1. Kamal A., and **Ramirez-Serrano A.**, "An Integrated methodology for Aircraft Concept Development with Applications to Transitional Aircraft", AIAA *Journal of Aircraft*, January 26, 2019 (Submitted)

J2. Ospina D., and **Ramirez-Serrano A.**, "Sensorless In-hand manipulation by an under-actuated robot hand", *Journal of Mechanisms and Robotics*, Sept. 2018. (Submitted).

J3. Kamal A., and **Ramirez-Serrano A.**, "Sizing Methodology for Tiltrotor Aircraft using Integrated Performance Constraints", *Journal of Aircraft*, May, 2018.

J4. Gress, G., and **Ramirez-Serrano, A.**, "Enabling passive hover stability in bicopters using lift-propeller gyroscopic properties", *Journal of American Institute of Aeronautics and Astronautics* (AIAA), Vol. XX, No. YY, Year 2017, pp. ZZ-ZZ, (Under review).

J5. Kamal A., and **Ramirez-Serrano A.**, "Design methodology for hybrid (VTOL+Fixed wing) unmanned aerial vehicles", *Aeronautics and Aerospace Open Access Journal*, 2018, 2(3), pp. 165-176.

J6. Wilson G., **Ramirez-Serrano A.**, and Sun Q., "Geometric Based Tire Vertical Force Estimation and Stiffness Parameterization for Automotive and Unmanned Vehicle Applications", *Journal of Vehicle System Dynamics*, 2016. Mmanuscript ID is NVSD-2016-0199.R2.

J7. Bagheri, P., **Ramirez-Serrano, A.**, and Pieper, J.K., "*Adaptive Nonlinear Robust Control of a Novel Unconventional Unmanned Aerial Vehicle*", J. of Control and Intelligent Systems, Vol. 43, No. 1, 2015.

J8. Wilson G., and **Ramirez-Serrano A.**, "Terrain Roughness Identification for High-Speed UGVs", *Intl Journal of Automation and Control Research*, V.1, Year 2014, pp. 11-21.

J9. Ning X., Yuan J., Yue X., and **Ramirez-Serrano A.**, "Induced generalized Choquet aggregating operators with linguistic information and their application to multiple attribute decision making based on the intelligent computing", *Intl Journal of Intelligent and Fuzzy Systems*, vol. 27, no. 3, 2014, pp. 1077-1085, 2014

J10. Ning X., Yalan W., Yuan J., and **Ramirez-Serrano A.**, "Designing advanced structural composites based on mechanical performances analysis of the variable topology spacecrafts", *Intl Journal of Polymer Composites,* vol. 35, no. 10, 2014.

J11. Wilson G., and **Ramirez-Serrano A.**, "Speed Selection based on Terrain Interaction Force Prediction for UGVs in Rough Unknown Terrain", *Intl Journal of Field Robotics*.

J12. Jansen, F., and **Ramirez-Serrano, A.**, "Extended MPC Strategy for Manoeuvring Unmanned Vehicles in Restricted 3D Environments", *Canadian Aeronautics and Space Journal (CASJ).*

J13. Jansen, F., and **Ramirez-Serrano, A.**, "Extended MPC Strategy for Manoeuvring Unmanned Vehicles in Restricted 3D Environments", *International Journal of Navigation and Observation.*

J14. Beran, T.N., and **Ramirez-Serrano, A.**, "Child Meets Robot: Applications of Humanoid Robotics in a Physiotherapy Environment with Young Patients", *Physiotherapy Canada, special edition use of technology for pain*, 2012.

J15. Beran, T.N., **Ramirez-Serrano, A.**, Susan M. Kuhnm S.M., and Vanderkooi, O., "Humanoid Robotics in Health Care: An exploration of children's and parents' emotional reactions", *Journal of Health Physchology*, October18, 2013.

J16. Beran, T.N., **Ramirez-Serrano, A.**, Susan M. Kuhn S.M., and Vanderkooi, O., "Reducing Children's pain and distress towards Flu Vaccinations: A Novel and effective application use of Humanoid Robotics", *Vaccine Journal*, Elsevier, No. 31, pp.2772-2777, April 2013.

J17. M. Kuhlmann, E.C. Fear, **A. Ramirez-Serrano**, and S. Federico, "Mechanical Model of the Breast for the Prediction of Deformation during Imaging", J. of Medical Engineering and Physics, V.35, pp. 470-478, 2013.

J18. El-Kabbany A.S. and **Ramirez-Serrano A.**, "Effect of number of wheels on high speed UGV traversability: Online terrain assessment approach", *Int. J. of Automotive technology (IJAT)*, Vol. 14, No. 2, pp. 249-257, April, 2013.

J19. Beran, T.N., **Ramirez-Serrano, A.**, Kuhn S.M., and Vanderkooi, O., "Robotics in health care: Reducing child distress during flu vaccinations", *Paediatrics and Chile Health*, Vol.17, pp. 28A. June/July 2012.

J20. Amiri N., **Ramirez-Serrano A.** and Davies R., "Integral Backstepping Control of an Unconventional Dual-Fan Unmanned Aerial Vehicle", *J. of Intelligent and Robotic Systems*, 2012.

J21. Liu, C, **Ramirez-Serrano, A.** and Yin, G., "An optimum design selection approach for product customization development", *J. of Intelligent Manufacturing*, Vol.23, Issue 4, pp. 1433-1443, 2012.

J22. C. Coza, C. Nicol, C.J.B. Macnab, and **A. Ramirez-Serrano**, "Adaptive Fuzzy Control for a Quadrotor helicopter Robust to Wind Buffeting", *J. of Intelligent and Fuzzy Systems*, Vol.22, pp. 267-283, 2011.

J23. Hosseini Z., **Ramirez-Serrano A.** and Martinuzzi R.J., "Ground/Wall Effects on a Tilting Ducted Fan" *Int. J. of Micro Air Vehicles*, Vol. 3, No. 3, Sept 2011.

J24. Beran T.; **Ramirez-Serrano A.**; Kuzyk R.; Fior M.; and Nugent S., "Understanding how Children Understand Robots: Animism in the 21st Century", *Intl Journal of Human-Computer Studies (IJHCS)*, V.69, Issue 7-8, pp. 539-550, July 2011.

J25. C. Nicol, C.J.B. Macnab, **A. Ramirez-Serrano**, "Robust Adaptive Control of a Quadrotor Helicopter", *IFAC Journal of Mechatronics*, Vol 21, No. 6, pp. 927-938, September 2011.

J26. Fior, M., Nugent, S., Beran, T.N., **Ramirez-Serrano, A.**, and Kuzyk, R., "Children's Relationships with Robots: Robot is Child's New Friend", *Journal of Physical agents*, Vol. 4, No. 3, pp. 9-17, Sept. 2010.

J27. Beran, T.N., **Ramirez-Serrano, A.**, Kuzyk, R., Nugent, S. and Fior, M., "Would Children Help a Robot in Need?", *International Journal of Social Robotics*, Vol. 3, No. 1, pp. 83-92, 2011.

J28. El-Kabbany A.S. and **Ramirez-Serrano A.**, "Terrain Roughness Assessment for High Speed UGV Navigation in Unknown Heterogeneous Terrains", *Intl J. on Information Acquisition*, Vol. 7, No. 2, pp. 165-176, 2010.

J29. El-Kabbany, A.S., Davies, K.A., **Ramirez-Serrano, A.**, **"**Terrain Assessment for High Speed USAR Reconfigurable Robots", *J. of Advanced Robotics: Special Issue on Disaster Response Robotics*, Vol. 23, No. 9, July 2009.

J30. Liu, C, **Ramirez-Serrano, A.** and Yin, G., "Customer-driven Product Design and Evaluation Method for Collaborative Design Environments", *J. of Intelligent Manufacturing*, Vol. 22, Issue 5, pp. 751-764, 2011.

J31. Hubert Liu, **Alejandro Ramirez-Serrano** and Giovanni Cosimo Pettinaro, "Mobile Robot Localization in Quasi-Dynamic Environments", *Journal of Industrial Robot*, Vol. 35, Issue 3, pp. 246-258, 2008.
J32. G.C. Pettinaro and **A. Ramirez-Serrano**, "Design and Control of a Portable VTOL System for Indoor Reconnaissance Tasks", *Journal of Intelligent and Robotic Systems*.
J33. C. Coza, C.J.B. Macnab, and **A. Ramirez-Serrano**, "An Adaptive-Fuzzy Control for a Quadrotor Helicopter Robust to Wind Buffeting", *The International Journal of Robotics Research.*
J34. H. Liu, **A. Ramirez-Serrano** and G.C. Pettinaro, "A Probabilistic Framework for Robot Self Localization in Quasi-Dynamic Environments", *IEEE Transactions on Systems, Man and Cybernetics - Part A (Humans and Systems)*.
J35. S. Zho, **A. Ramirez-Serrano** and R. W. Brennan, "Cooperative Multi-Agent Reconfigurable Manufacturing Environments", *International Journal of Manufacturing Technology and Management*, Special issue on "Intelligent Industrial Automation", 2005.
J36. Scott Olsen, James Wang, **Alejandro Ramirez-Serrano**, and Robert W. Brennan, "Contingencies-based Reconfiguration of Distributed Factory Automation", Elsevier *International Journal of Robotics and Computer Integrated Manufacturing* (RCIM), Special issue Flexible Automation and Intelligent Manufacturing Edited by L. Wang, F., Vol./Issue 21/4-5, pp. 379-390. 2005.
J37. **Ramirez-Serrano A.** and Benhabib B., "Supervisory Control of Functionally Expandable Flexible-Manufacturing Workcells", *International Journal of Flexible Manufacturing Systems*, Vol. 15, No. 3, pp. 241-272, July 2003.
J38. **Ramirez-Serrano A.** and B. Benhabib, "Supervisory Control of Reconfigurable Flexible-Manufacturing Workcells – Temporary Addition of Resources", *International Journal of Computer Integrated Manufacturing*, Vol. 16, No. 2, pp. 93-111 March 2003.
J39. **A. Ramirez-Serrano**, S.C. Zhu, S.K.H. Chan, S.S.W. Chan, M. Ficocelli and B. Benhabib, "A Hybrid PC/PLC Architecture for Manufacturing-System Control - Theory and Implementation", *Journal of Intelligent Manufacturing*, Vol. 13, No. 4, pp. 261-281, August 2002.
J40. **Ramirez-Serrano A.**, Sriskandarajah C., and Benhabib B., "Automata-Based Modeling and Control Synthesis for Manufacturing Workcells with Part-Routing Flexibility", *IEEE Transactions on Robotics and Automation*, Vol. 16, No. 6, pp. 807-823, December 2000.
J41. **Ramirez-Serrano A.** and Benhabib B., "Supervisory Control of Multi-Workcell Manufacturing Systems with Shared Resources", *IEEE Transactions on Systems, Man and Cybernetics: Part B, Cybernetics*, Vol. 30, No. 5, pp. 668-683, October 2000.
J42. **Ramirez-Serrano A.**, S.C. Zhu and Benhabib B., "Moore Automata for the Supervisory Control of Robotic Manufacturing Workcells", *Journal of Autonomous Robots*, Vol. 9, No. 1, pp. 59-69, July 2000.
J43. Boumedine M. and **Ramirez-Serrano A.**, "Fuzzy Knowledge-Based Controller Design for Autonomous Robot Navigation", *Journal of Expert Systems with Applications*, Vol. 14, No. 1/2, pp. 179-186, January/February 1998.

Enhanced state estimation of IMU sensors deployed in challenging GPS-denied spaces under magnetic and shock disturbances

Conference Papers:

C1. Liu H., Park S., and **Ramirez-Serrano, A.,** "Enhanced state estimation of IMU sensors deployed in challenging GPS-denied spaces under magnetic and shock disturbances", XXX, YYY, MM/DD, 2019 (under preparation)
C2. Dalman, B. Johansen, C., and **Ramirez-Serrano, A.,** "Multidisciplinary design optimization of a small-scale supersonic UAV using SUAVE", CASI /IASC AERO19 Conference, Laval, QC, Canada, May 14-16, 2019 (accepted)
C3. Staples, M. and **Ramirez-Serrano, A.,** "Control of a two link aerial manipulator using an adaptive CMAC controller", IEEE/RSJ Intl. Conf. on Intelligent Robots and Systems (IROS), Macao, China, November 3-8, 2019 (Submitted)

C4. Kamal A., and **Ramirez-Serrano A.**, "Design of a Highly maneuverable hybrid UAV with new maneuver and control capabilities", AIAA Aviation and Aeronautics forum and exposition, June 17-21, 2019, Callas, TX, USA (accepted)

C5. Kamal A., and **Ramirez-Serrano A.**, "Systematic Approach to Conceptual Design Selection for Hybrid UAVs using Structured Design Methods", AIAA Science and Technology Forum and Exposition, January 7-11, 2019, San Diego, CA, USA

C6. Yayari M.R., Gupta K.G., Mehrandezh M., and **Ramirez-Serrano A.**, "Optimal Real-Time Trajectory Control of a Pitch-Hover UAV with a Two Link Manipulator", Intl. Conf. on Unmanned Aircraft Systems (ICUAS), June 12-15, 2018, Dallas, TX, USA.

C7. Kamal A., and **Ramirez-Serrano A.**, "Development of a Preliminary Design Methodology for Transitional UAV", AIAA Science and Technology Forum and Exposition, January 8-12, 2018, Gaylord Palms, Kissimmee, Florida, USA.

C8. Ospina D., and **Ramirez-Serrano A.**, "Influence of fingertip and object shapes on the manipulation ability of under-actuated hands", IEEE Intl Conf. on Intelligent Robots and Systems, Sept. 24-28, 2017, Vancouver, BC, Canada.

C9. Wilson G., **Ramirez-Serrano A.**, and Sun Q., "Tire force estimation for navigation of UGVs deployed in a-priori unknown off-road terrains", IEEE Intl Conf. on Intelligent Robots and Systems, Sept. 24-28, 2017, Vancouver, BC, Canada.

C10. Wang, J. and **Ramirez-Serrano, A.**, "Autonomous locomotion mode transition of a track-legged quadruped robot's step negotiation", IEEE Intl Conf. on Robotics and Automation, May 29 - June 3, 2017, Marina Bay Sands Convention Centre, Singapore.

C11. Wang, J. and **Ramirez-Serrano, A.**, "Locomotion Mode Transition Study of a Hybrid Quadruped Robot", IEEE/RSJ Int. Conf. on Intelligent Robots & Systems, Deajeon, Oct 9-14, 2016.

C12. Staples, M. and **Ramirez-Serrano, A.,** "CMAC Robust Sliding Mode Control of Aerial Robotic Manipulators", IEEE/ASME Intl. Conf. on Advanced Intelligent Mechatronics (AIM), Banff, Alberta, Canada, July 12–15, 2016.

C13. Ospina, D., and **Ramirez-Serrano, A.**, "Modeling and simulation of in-hand manipulation by a minimalistic underactuated robot hand", IEEE/ASME Intl. Conf. on Advanced Intelligent Mechatronics (AIM), Banff, Alberta, Canada, July 12–15, 2016.

C14. Wang, J., **Ramirez-Serrano, A.**, and Davies. K., "Locomotion Mode Transition Study of Ground Hybrid Robots", Intl. Conf. on Climbing and Walking Robots and Support Technologies for Mobile Machines (CLAWAR), London, UK, September 12-14, 2016.

C15. Wang, J., and **Ramirez-Serrano, A.**, "Stair-climbing Gait Design and Energy Evaluation Simulation of a Legged-tracked Quadruped Robot", IEEE/ASME Intl. Conf. on Advanced Intelligent Mechatronics (AIM), Banff, Alberta, Canada, July 12–15, 2016.

C16. Majnoon, M., Samsami, K., Mehrandezh, M., and **Ramirez-Serrano, A.**, "Mobile-target Tracking via Highly-maneuverable VTOL UAVs with EO Vision", Conference on Computer and Robot Vision, Victoria, BC, Canada, June 1-3, 2016.

C17. Majnoon, M., Samsami, K., Mehrandezh, M., and **Ramirez-Serrano, A.**, "Dynamic Modeling and Vision-based Mobile-target Tracking for a Rotary-wing UAV with Tilting Rotors", Proc. CSME Intl. Congress, Kelowna, BC, Canada, June 26-29, 2016.

C18. Davies K., and **Ramirez-Serrano A.**, "Performance Analysis of a Nonlinear Model Predictive Control for Safe, Semi-Autonomous Aerial Vehicle Flight in Confined Spaces", *IEEE Intl. Conf. on Robotics and Automation*, Seattle, Washington, USA, May 26-30, 2015.

C19. Wilson G., **Ramirez-Serrano A.**, and Sun, Q. "Vehicle state prediction for outdoor autonomous high-speed off-road UGVs", *IEEE Intl. Conf. on Robotics and Automation*, Seattle, Washington, USA, May 26-30, 2015.

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