Curriculum Vitae
John Anderson

Professor
Department of Computer Science
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Education

Ph.D., Computer Science, University of Manitoba, 1995
    Thesis: **Constraint Directed Improvisation for Everyday Activities**
    Advisor: Dr. M. Evans
M.Sc., Computer Science, University of Manitoba, 1989
B.Sc., Computer Science, University of Manitoba, 1987

CHERD University Management Course, 2012.

Research Interests

Artificial Intelligence
    Multi-Agent Systems: Coordination, Collaboration, and Control
    Learning in Social Settings
    Distributed Intelligent Systems
    Real Time Intelligent Systems
Mobile Robotics
    Multi-Robot Systems: Coordination, Team Formation, Formation-Controlled Movement
    Intelligent Control in Robot Systems
    Mixed-Reality Robotics
Computer Science Education
    Applying AI and Robotics to CS Education

Professional Employment

July, 2018-June, 2023	Head, Computer Science (Second term, position not taken up due to medical leave)
July, 2012 – June,2017	Head, Computer Science (First Term)
Sept., 2010 – June, 2012	Associate Head (Graduate), Computer Science
Sept., 2009 – Sept. 2010	Graduate Chair, Computer Science
April, 2009 – Present	Professor, Computer Science
March, 2003 – March, 2009	Associate Professor, Computer Science
July, 1999 – March, 2003	Assistant Professor (Tenure-Track), Computer Science, University of Manitoba
July, 1997 – July, 1999	Instructor, University of Manitoba
July, 1995 – July, 1997	Assistant Professor (Term), Computer Science, U. Manitoba

Sept., 1995	Director, Shad Valley Manitoba 1996
July, 1995	Computer Science Faculty, Shad Valley Manitoba
July, 1990 – June, 1995	Sessional Lecturer, Computer Science, U. Manitoba
July, 1989 - July, 1990	Full-Time Lecturer, Computer Science, U. Manitoba

Notable Awards

2nd prize, IEEE Humanoid Application Challenge, IEEE International Conference on Robotics and Systems (IROS 2018) September 2018 - $4,000. The theme for this year's Application Challenge was Robot Magic and our team built a robust entertainment robot that included speech and gesture recognition and a generic approach to representing magic tricks that allowed for a full multi-event performance. The value cited is the approximate retail of a new SEED Robotics fully articulated hand for the DARwIn-OP3 robot plus student travel funding to the conference in Madrid.

1st prize, IEEE Humanoid Application Challenge, IEEE International Conference on Robotics and Systems (IROS-2017) September 2017 - $14,000. The theme for this year's Application Challenge was Robot Magic and our team built a robust entertainment robot that included speech and gesture recognition and a generic approach to representing magic tricks that allowed for a full multi-event performance. The value cited is the approximate retail of a new DARwIn-OP3 robot plus travel funding to the conference.

Double 4th place overall, FIRA HuroCup, Taichung, Taiwan, (along with two 1st, and one 2nd place in individual event results), August, 2018. We fielded two teams (small and middle size) in the 2017 HuroCup, which involves multiple events using the same robots, emphasizing breadth in control, and placed fourth in the world in both leagues, from a cumulative point total across all events. We placed first in the triple jump and first in moving target archery, both new events, in the middle size league , and also captured a range of placements in other events to reach a successful total.

Double Best Paper awards, second and third place out of 146 accepted papers (one with Amirhosseinmemar, et al. the other with Kyle Morris et al.), International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA-AIE), May, 2018.

1st place, Technical Challenge, RoboCup Humanoid League., Montreal, June 2018. This year we had a joint team with NTNU in Taiwan (Jacky) and our previous collaborators Amirkabir University in Iran. Our lab was in charge of the technical challenge event, which this year which consisted of four individual events (push recovery, high jump, high kicks, and goal kicks). After overcoming a number of hardware glitches such as worn servo motors, we came in first in push recovery, goal kick, and high jump; which resulted in our best score ever.

Double First overall, AUTCup 2018, Tehran, March 2018. We competed in FIRA events in Iran and won both size leagues overall. This was especially challenging as even with support from our friends at Amirkabir University we could only send three students to do this work, as our funding was already committed to RoboCup and FIRA and travel costs were high. Beating Jacky Baltes' Taiwan team here was an added treat though.

4th place overall, FIRA HuroCup, Kaohsiung Taiwan (along with two 1st, and one 2nd place in individual event results), August, 2017. We fielded two teams (small and middle size) in the 2017 HuroCup, which involves multiple events using the same robots, emphasizing breadth in control, and placed fourth in the world in the middle size league, from a cumulative point total across all events. We placed first in the long jump in the middle size league, setting a new world record, and also captured first and second place trophies in archery in both small and middle size leagues.

3rd place x 2, RoboCup Humanoid League July 2017. Our joint team with Amirkabir University in Iran captured 3rd place in the soccer competition in the RoboCup Humanoid League. We also took 3rd place in the technical challenges (push recovery, high jump, high kicks).

Best Paper award (with my former student Geoff Nagy, now a Ph.D. student at UBC), Canadian AI Conference, Edmonton, May, 2017.

3rd place, FIRA HuroCup, Beijing, China (along with 1st, 2nd and 3rd place individual event results), December, 2016
We fielded two teams (small and middle size) in the 2016 FIRA HuroCup, which involves multiple events using the same robots, emphasizing breadth in control. Our team placed third in the world in the middle size league, from a cumulative point total across all events (these included second place in the long jump and third in the marathon). We also placed first in the long jump in the small size division.

1st and 3rd place, RoboCup Humanoid League July 2016
Our team captured 3rd place in the soccer competition in the Humanoid League Teen Size and 1st place in the technical challenge in the same league. This was a joint team with Amirkabir University in Iran.

2nd Prize, IEEE Humanoid Application Challenge, IEEE International Conference on Robotics and Systems (IROS-2016) October 2016 - $3,750.00
The IEEE Humanoid Application Challenge (previously known as the DARwIn-OP Application Challenge) awards robotics equipment to the entries best advancing humanoid robotics research. The value cited is the approximate retail value of this equipment plus travel award.

President's Award, International Robot Competition, Korea, November 2015.
Our team won the President's award (sponsored by South Korean President Park Gyeun-Hye) for the Best Humanoid Robot at the competition.

2nd and 3rd Place RoboCup Humanoid League July 2015
Robocup 2015 was in Hefei, China, and we entered a teen-size (<140 cm) team jointly with Amirkabir University in Iran. This was a team-based effort with Jacky Baltes and our students here. We placed third in soccer (i.e. the overall event), and second place in the technical challenge.

4th place overall, Robocup Teen-size Humanoid League July 2014
1st place technical challenge, Robocup Teen-size Humanoid League July 2014

3rd place technical challenge, Robocup Kid-size Humanoid League July 2014
Robocup 2014 was in Joao Pessoa, Brazil, and concentrates on soccer and soccer-related skills. We placed fourth overall in the world with larger-sized (<140cm) robots. In addition to soccer there are particular technical challenges, and we placed first in this in the same league (as well as third in the smaller sized league). This is the first year we did very well with larger size (harder to control, with many more logistical problems) robots. This was also joint work with Amirkabir University in Iran, marking an important international collaboration.

1st Place, FIRA HuroCup World Cup, August 2013
Our team won the 1st Place in the HuroCup All-Round World Cup Competition in Shah Alam, Malaysia. The HuroCup requires the use of the same physically unaltered robot in a diverse array of events designed to advance research in humanoid robotics, and we were competing along with 45 other teams from all over the world. This was a very important achievement: we have been competing at FIRA for ten years and have never managed to do well enough in such broad range of events to pull off a win. Some of that has been because our main focus is on the research rather than our ultimate ranking among teams, and this result is both down to the quality of our students and the culmination of our maturing research in the areas of vision, robot motion, and collaborative intelligent systems. This award got us an enormous amount of media attention, including having the students that went named to a "top 100 most interesting people in Winnipeg" list.

3rd Place technical challenge, RoboCup Kid-size Humanoid League June 2013. RoboCup 2013 was in Eindhoven, Netherlands, shortly before the FIRA event noted earlier. Our team did not make the finals, but we did well in the field in the real-time technical challenges related to robotic motion and won an award for this.

Best Paper award (with my former student Tyler Gunn, now working at Google), Fourth International Conference on Ambient Systems, Networks, and Technology, Halifax 2013.

Student-Teacher Recognition Award/ITS Certificate of Teaching Excellence, 2012

1st Place DARwIn-OP Application Challenge at the IEEE International Conference on Robotics and Automation, St. Paul, 2012 (part of autonomous agents lab team including J. Baltes and our students) – award included DARwIn-OP Humanoid Robot and software. This was our skating robot project.

Technical Merit Award, AAAI-2007 robotics exhibition, for mixed-reality robotics. AAAI (along with its sister conference IJCAI) is the premiere international conference in artificial intelligence.

Grants Received

March, 2018: **$12,000.00** ($4,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $4000.00 - University of Manitoba Travel and Sponsorship Fund. Funding for team travel to the FIRA robotics competition in Taiwan.

March, 2017: **$10,000.00** ($4,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $2000.00 - University of Manitoba Travel and Sponsorship Fund). Funding for team travel to the Fira Conference and competition in Taiwan.

April, 2017: (**$20,000.00** annually x 5 years) - Dynamic Heterogeneous Multi-robot Team Management in Dangerous Domains. National Science and Engineering Research Council Discovery Grants Program (Third Renewal)

March, 2017: **$12,000.00** ($4,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $4000.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the FIRA robotics competition in Taiwan.

January, 2017: **$US 4000.00** – Travel funding from Amirkabir University, Iran, for travel to the 2018 AUTCup Robotics Competition, March 2018 ($3000 US + value in kind thorough complimentary accommodation)

March, 2016: **$8,500.00** ($3,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Leipzig, Germany.

March, 2015: **$8,500.00** ($3,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Hefei, China.

March, 2014: **$8,500.00** ($3,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Joao Pessoa, Brazil.

March, 2013: **$8,500.00** ($3,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Eindhoven, Netherlands.

February, 2013: **$550,000.00** (over three years) Data Mining Algorithms for Advanced Persistent Cyber-Threat Detection. Canadian Safety and Security Program, Defence Research and Development Canada. Academic Partner (along with R. McLeod, ECE). PI: Colin Gilmore, TRTech. February, 2013.

March, 2012: **$8,500.00** ($3,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Mexico City.

July, 2011: **$31,000.00** - Research and Development of RobotApps: a framework for robotic application development through modular components. $31,000. National Science and Engineering Research Council Engage Grants Program and Cogmation Robotics.

June, 2011: **$7,500.00** ($2,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Istanbul.

June, 2010: **$7,500.00** ($2,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $1,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Singapore.

June, 2009: **$8,500.00** ($2,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $2,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Graz, Austria.

March 2009: **$19,000.00** (annually x 5 years) - Flexible team formation and task allocation for multi-robot systems in complex domains. National Science and Engineering Research Council Discovery Grants Program (Second Renewal; extended to 2016)

June, 2008: **$8,500.00** ($2,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $2,500.00 - University of Manitoba Travel and Sponsorship Fund, jointly with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Suzhou, China.

February, 2008: **$7,000.00**. Equipment: Hokuyo Long-range (30m) laser rangefinder. This amount is estimated from the cost of existing high-end units at the time, since the model was not at that time commercially available. Hokuyo International.

July, 2007: **$2,000.00** (AAAI, with J. Baltes). Travel grant to participate at the Association for the Advancement of Artificial Intelligence Robotics Exhibition, Vancouver, 2007 (we were offered a similar grant for an invited demo at AAMAS in Lisbon in 2007, but had to decline due to teaching and other scheduling constraints). AAAI Travel Grants Program.

June, 2007: **$8,500.00** ($2,000.00 – Department of Computer Science; $4,000.00 - Faculty of Science, $2,500.00 - University of Manitoba Travel and Sponsorship Fund, with J. Baltes). Funding for team travel to the RoboCup Conference and competition in Atlanta, Georgia.

April, 2007: **$4,000.00** (jointly with J. Baltes). Equipment: twenty Citizen MicroRobot and assorted support equipment. This amount is estimated, as these products are not sold commercially, based on the price of a later edition. Citizen Corp. of Japan.

November, 2006: **$25,000.00** (jointly with J. Baltes, D. Yergens). Funding for prototype development of a Derived Intelligence Medical Messaging System, in order to facilitate a patent application. Intellectual Property Mobilization Grant, University of Manitoba Technology Transfer Office.

June, 2006: **$9,000.00** ($1,000.00 - RoboCup – Travel Grants Program; $4000.00 - Faculty of Science, $1,000.00 – Department of Computer Science, $2,500.00 – University of Manitoba Travel and Conference Sponsorship Program. $500 – Pepsi Contingency Fund, jointly with J.

Baltes) Funding for team travel to the RoboCup Conference and Competition in Bremen, Germany and the FIRA Conference and Competition in Dortmund, Germany.

January, 2006: **$40,000.00** (jointly with J. Baltes, through funding allocated throughout the Department). General funding for lab equipment. Western Diversification Fund.

June, 2005: **$11,500.00** ($2,000.00 - RoboCup Travel Grants Program, $4000.00 - Faculty of Science, $1,000.00 – Department of Computer Science, $2,500.00 – University of Manitoba Travel and Sponsorship Program, jointly with J. Baltes) Funding for team travel to the RoboCup Conference and Competition in Osaka, Japan.

September, 2004: **$38,000.00** (jointly with N. Sepehri, R. Postuma). Autonomous Abdominal Palpation/Ultrasound Imaging: Challenges in Fundamentals and Application to Appendicitis Diagnosis in Space. IRIS-PRECARN Corp, CSA/IRIS Collaborative Research Grants Program.

July, 2004: **$10,000.00** ($3,000.00 - RoboCup – Travel Grants Program, $4000.00 - Faculty of Science, $1,000.00 – Department of Computer Science, $2,000.00 – University of Manitoba Travel and Sponsorship Program, jointly with J. Baltes) Funding for team travel to the RoboCup Conference and Competition in Lisbon, Portugal.

July, 2004: **$3,000.00** (AAAI, jointly with J. Baltes). Travel grant to participate at the 2004 Association for the Advancement of Artificial Intelligence Robotics Exhibition, San Jose, CA. AAAI Travel Grants Program.

April, 2004: **$18,000.00** annually (x 5 years) Decentralized Multi-Agent Exploration for Complex Dynamic Domains. National Science and Engineering Research Council Discovery Grants Program (First Renewal)

July, 2003: **$1,500.00** (jointly with J. Baltes). Funding for travel to IJCAI-03 in Acapulco for participation in Robotic Rescue Competition. IJCAI Travel Grants Program.

July, 2003: **$16,000.00** ($5,000.00 - RoboCup – Travel Grants Program, $4000.00 - Faculty of Science, $4,000.00 - Faculty of Engineering, $2,000.00 – University of Manitoba Travel and Conference Sponsorship Fund, $1,000.00 – Department of Computer Science, jointly with J. Baltes) Funding for team travel to the RoboCup Conference and Competition in Padua, Italy.

January, 2003: **$6,500.00** (jointly with J. Baltes) "Robotic Rescue Testbed for Research and Education". Winnipeg Foundation – Post-Secondary Education Grants.

September, 2002: **$5000.00**, (Intel - Academic Relations Program, jointly with J. Baltes) Equipment funding through donation of XScale 450 development board for embedded systems. These boards were at the time Intel's cutting-edge development board and only twelve were made available under this program. The others went to Universities such as Carnegie-Mellon, the Georgia Institute of Technology, Stanford, and Berkeley.

July, 2002: **$3,500.00** (AAAI –Travel Grants Program, jointly with J. Baltes). Funding for travel to AAAI-02 in Edmonton for participation in Robotic Rescue Competition.

March, 2002: **$59,125.00** (National Science and Engineering Research Council International Opportunity Fund, M. Ulieru, University of Calgary, Principal Investigator, along with myself and 24 other co-applicants). Funding for the Canadian Global Agents Integration Network – GAIN. This involves seed funding for the development of Canadian GAIN in the form of support for development of further funding applications and to fund a meeting between the collaborators of Canadian GAIN in May, 2002.

June, 2000: **$438,361.52** for heterogeneous computing and networking equipment (collaborative grant with Drs. Toulouse, Ehikioya, and Eskicioglu, University of Manitoba), to be used in distributed simulation of multi-agent systems. Source: Canada Foundation for Innovation, Province of Manitoba, University of Manitoba.

April, 2000: **$17,000.00** annually (x 4 years) for investigation of Real-Time Implicit Coordination in Multi-Agent Systems. National Science and Engineering Research Council Research Grants Program (now known as the Discovery Grants Program).

Jan, 2000: **$4,100.00** for investigation of Constraint-Directed Intelligent Control in Cooperative Multi-Robot Systems. University of Manitoba Research Grants Program.

July, 1999: **$30,000.00.** Startup equipment for mobile robotics laboratory. Faculty of Science, University of Manitoba.

I have also received funding in most years to support NSERC/Faculty of Science summer students in my laboratory.

Publications

Indices: h-index 16, g-index 22

Refereed Journals

1. Morris, Kyle, Vladyslav Samonin, John Anderson, Meng Cheng Lau and Jacky Baltes. "A Robust Interactive Entertainment Robot for Robot Magic Performances (Extended Version). Submitted to *Applied Intelligence Journal*, November, 2018, in revision.

2. Hosseinmemar, A., Anderson, J., Baltes, J., Lau, M.C., and Lun, C.F., Closed-Loop Push Recovery for an Inexpensive Humanoid Robot (Extended version), *Applied Intelligence Journal*, in press.

3. Baltes, J., Tu, K-Y, Sadeghnejad, S., and Anderson, J. (2017). HuroCup: Competition for Multi-Event Humanoid Robot Athletes. *Knowledge Engineering Review*, 32(1):1-14.

4. Baltes, J., Bagot, J., Sadeghnejad, S., Anderson, J., and Hsu, C-H. (2016). Full-Body Motion Planning for Humanoid Robots using Rapidly Exploring Random Trees. *KI - Künstliche Intelligenz*, pp 1-11.

5. Gunn, T., and Anderson, J. (2015). Team Formation and Task Allocation in Robotic Urban Search and Rescue, International Journal of Computer and System Sciences 81(3): 553-567.

6. Iverach-Brereton, C., Baltes, J., Anderson, J., Winton, A., and Carrier, D. (2014). Gait Design for an Ice Skating Humanoid Robot. *Robotics and Autonomous Systems*, 62(3):306-318.

7. Allen, J., Anderson, J., and Baltes, J. (2012). Vision-Based Imitation Learning in Heterogeneous Multi-Robot Systems: Varying Physiology and Skill. *International Journal of Automation and Smart Technology* 2(12):147-161.

8. Anderson, J., Baltes, J., and Cheng, C..T. (2011). Robotics Competitions as Benchmarks for AI Research. *Knowledge Engineering Review* 26(1):11-17.

9. McKinnon, B., Cheng, C.T., Anderson, J., and Baltes, J. (2010). Point, Line Segment, and Region-Based Stereo Vision for Robotics. *International Journal of Automation Austria* (IJAA), 18(special issue):7-42.

10. Karpenko, M., Sepehri, N. and Anderson, J. (2007). Decentralized Coordinated Motion Control of Two Hydraulic Actuators Handling a Common Object. *ASME Journal of Dynamic Systems, Measurement and Control* 129,729-741.

11. Wegner, R., and Anderson, J. (2006). Agent-based Support for Balancing Teleoperation and Autonomy in Urban Search and Rescue. *International Journal of Robotics and Automation*, 21(2),120-128.

12. Anderson, J., and Baltes, J. (2006). An Agent-Based Approach to Introductory Robotics using Robotic Soccer. *International Journal of Robotics and Automation* 21(2),141-152.

13. Baltes, J., and Anderson, J. (2005). Introductory Programming Workshop for Children Using Robotics. *International Journal of Human-Friendly Welfare Robotic Systems*, 6(2),17-26.

14. Strachan, L., Anderson, J., Sneesby, M., and Evans, M. (2000). Minimalist User Modelling in a Commercial Setting. *International Journal of User Modelling and User Adapted Interaction* 10(2-3),109-146.

15. Anderson, J., and Evans, M. (1995). A Generic Simulation System for Intelligent Agent Designs**.** *Applied Artificial Intelligence*, 9(5),527-562.

16. Anderson, J., and Evans, M. (1994). Intelligent Agent Modelling for Natural Resource Management**.** *International Journal of Mathematical and Computer Modelling*, 20(8),109-119.

17. Evans, M., Anderson, J., and Crysdale, G. (1992). Achieving Flexible Autonomy in Multi-Agent Systems using Constraints**.** *Applied Artificial Intelligence*, 6(1),103-126.

Books/Proceedings

1. Tzuu-Hseng S., Tu, K.-Y., Tsai, C., Hsu, C., Tseng, C., Vadakkepat, P., Baltes, J., Anderson, J., Wong, C., and Jesse, N., (Eds.). *Next Wave In Robotics* (FIRA RoboWorld Congress 2011), Volume 212 of Communications in Computer and Information Science, 2011. Springer-Verlag, Heidelberg. DOI:10.1007/978-3-642-23147-6

2. Vadakkepat, P., Kim, J.-H., Jesse, N., Al Manum, A., Kiong, T., Baltes, J., Anderson, J., Verner, I., and Ahlgren, D. (Eds.). *Trends in Intelligent Robotics* (FIRA RoboWorld Congress 2010), volume 103 of Communications in Computer and Information Science, 2010. Springer-Verlag, Heidelberg. ISBN: 978-3-642-15810-0

3. Kim, J.-H., Ge, S., Vadakkepat, P., Jesse, N., Al Manum, A., Puthusserypady, K., Rueckert, U., Sitte, J., Witkowski, U., Nakatsu, R., Braunl, T., Baltes, J., Anderson, J., Wong, C., Verner, I., and Ahlgren, D. (Eds.). *Advances in Robotics* (FIRA RoboWorld Congress 2009), volume 5744 of Image Processing, Computer Vision, Pattern Recognition, and Graphics, 2009. Springer-Verlag, Heidelberg. ISBN: 978-3-642-03983-6

4. Kim, J.-H., Ge, S., Vadakkepat, P., Jesse, N., Al Manum, A., Puthusserypady, K., Rueckert, U., Sitte, J., Witkowski, U., Nakatsu, R., Braunl, T., Baltes, J., Anderson, J., Wong, C., Verner, I., and Ahlgren, D. (Eds.). *Progress in Robotics* (FIRA RoboWorld Congress 2009), volume 44 of Communications in Computer and Information Science, 2009. Springer-Verlag, Heidelberg. ISBN: 978-3-642-03986-7

5. Soh, L-K. and Anderson, J. (Eds.). Forming and Maintaining Coalitions and Teams in Adaptive Multiagent Systems: Papers from the 2004 AAAI Workshop, AAAI Press (AAAI-TR WS-04-06). 2004.

Refereed Book Chapters

1. Anderson, J. (2018). Humanoid Multi-Robot Systems. In P. Vadakkepat and A. Goswami (Eds)., *Humanoid Robotics: A Reference*, Springer-Verlag, in press.

2. Baltes, J., Tu, K.-Y., and Anderson, J. (2013) Options and Pitfalls in Embedded Systems Development for Intelligent Humanoid Robots. *In Intelligent Robotics Systems: Inspiring the NEXT*, pp. 77-89. Springer Berlin Heidelberg, 2013.

3. Wiebe, N., and Anderson, J. (2009). Local Methods for Supporting Grounded Communication in Robot Teams. In Liu, D., Wang., L, and Chen, K. (Eds.), *Design and Control of Intelligent Robotic Systems*. Chapter 14, pp. 279-301. Springer-Verlag, Heidelberg. ISBN: 978-3-540-89933-4

4. Baltes, J., and Anderson, J. (2009). Advancing Artificial Intelligence through Minimalist Humanoid Robotics. In Liu, D., Wang., L, and Chen, K. (Eds.), *Design and Control of Intelligent Robotic Systems*. Chapter 17, pp. 355-376. Springer-Verlag, Heidelberg. ISBN: 978-3-540-89933-4

5. Wurr, A., and Anderson, J. (2006). Stigmergic Navigation for Multi-Agent Teams in Complex Environments. In Abraham, A., Grosan, C., and Ramos V. (Eds.), *Stigmergic Optimization.* pp. 85-116. Springer-Verlag, Heidelberg. ISBN: 978-3-540-34690-6

6. Anderson, J. (2001). Providing a Broad Spectrum of Agents in Spatially-Explicit Simulation Models. In Gimblett, R. (Ed.). In*tegrating GIS and Agent based modeling techniques for Understanding Social and Ecological Processes*. pp. 21-58. Oxford University Press. ISBN: 0-19-0514336-1

Invited Book Chapters

1. Baltes, J., and Anderson, J. (2007). Intelligent Global Vision for Teams of Mobile Robots. Invited book chapter in Kolski, S. (Ed.), *Mobile Robots: Perception & Navigation.* pp. 165-186. Mammendorf, Germany: pro literature Verlag. ISBN: 3866112831

Refereed Conference Proceedings

1. Morris, K. J., Samonin, V., Anderson, J., Lau, M.C., and Baltes, J., Robot Magic: A Robust Interactive Entertainment Robot, *Proceedings of the 31st International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems*, Montreal, June 2018 **(Best Paper Award**, 3rd prize + invitation for longer journal version above).

2. Hosseinmemar, A., Anderson, J., Baltes, J., Lau, M.C., Lun, C.F., and Audu, A.-R., Closed-Loop Push Recovery for an Inexpensive Humanoid Robot, *Proceedings of the 31st International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems*, Montreal, June 2018 **(Best Paper Award**, 2nd prize + invitation for longer journal version above).

3. Morris, K. J., Anderson, J., Lau, M.C., and Baltes, J., Interaction and Learning in a Humanoid Robot Magic Performance. In *Proceedings of the AAAI Spring Symposium on Integrated Representation, Reasoning, and Learning in Robotics*, Stanford, March 2018.

4. Nagy, G., and Anderson, J., Active Team Management Strategies for Multi-robot Teams in Dangerous Environments. In *Advances in Artificial Intelligence: 30th Canadian Conference on Artificial Intelligence*, Edmonton, AB, pp. 385-396, May 2017 (**Best Paper Award**).

5. Nagy, G., and Anderson, J., Active Recruitment Mechanisms for Heterogeneous Robot Teams in Dangerous Environments. In *Advances in Artificial Intelligence: 29th Canadian Conference on Artificial Intelligence*, Victoria, British Columbia, pp. 276-281, June 2016.

6. Hosseinmemar, A., Baltes, J., Anderson, J., Lau, M.C., and Wodi, H.B., Alternative Control for Teleoperation Robots Using a Set-and-Leave Approach. *8th International Conference on Advanced Humanoid Robotics Research*, Beijing, China, December 2016.

7. Iverach-Brereton, C., Baltes, J., and Postnikoff, B., Carrier, D., and Anderson, J. Fuzzy Logic Control of a Humanoid Robot on Unstable Terrain. Proceedings of RoboCup-2015, Hefei, China, July 2015

8. Nagy, G., Young, J., and Anderson, J. (2015). Are Tangibles Really Better? Keyboard and Joystick Outperform TUIs for Remote Robotic Locomotion Control. In *Proceedings*

of the 10th ACM/IEEE International Conference on Human-Robot Interaction, Portland, OR, March 2015.

9. Baltes, J., Hosseinmemar, A., Jung, J., Sadeghnejad, S., and Anderson, J (2014). Practical Real-Time System for Object Counting based on Optical Flow. In *Proceedings of the 3rd International Conference on Robot Intelligence Technology and Applications*, Beijing, China, November 2014.

10. Lau, M.C., Cheng, C.T., Baltes, J., and Anderson, J. Drawing Pressure Estimation Using Torque Feedback Control Model of A 4-DOF Robotic Arm. In *Proceedings of the 3rd International Conference on Robot Intelligence Technology and Applications*, Beijing, China, November 2014.

11. Nagy, G., Anderson, J., and Baltes, J. (2014) An Event-Driven Operating System for Servomotor Control. In *Proceedings of Robocup-2014*, Joao Pessoa, Brazil, July 2014.

12. Baltes, J., Iverach-Brereton, C., and Anderson, J. (2013). Human Inspired Control of a Small Humanoid Robot in Highly Dynamic Environments, or Jimmy Darwin Rocks the Bongo Board. In *Proceedings of the 2nd International Conference on Robotics Applications and Intelligence*, Denver, CO, December, 2013.

13. Baltes, J., Iverach-Brereton, C., and Anderson, J. (2013). Sensor Filtering for Balancing of Humanoid Robots in Highly Dynamic Environments. In *Proceedings of the 2013 CACS International Automatic Control Conference (CACS 2013)*, Sun Moon Lake, Nantou, Taiwan, December 2013.

14. Gunn, T. and Anderson, J. (2013). Effective Task Allocation for Evolving Multi-robot Teams in Dangerous Environments. In *Proceedings of the IEEE/WIC/ACM International Conference on Intelligent Agent Technology*, Atlanta, GA, November 2013.

15. Baltes, J., Iverach-Brereton, C., and Anderson, J. (2013). Human Inspired Control of a Small Humanoid Robot in Highly Dynamic Environments. In *Proceedings of the 8th Workshop on Humanoid Soccer Robots*, IEEE Humanoids 2013 Conference, Atlanta, GA, November 2013.

16. Gunn, T., and Anderson, J. (2013) Dynamic Heterogeneous Team Formation for Robotic Urban Search and Rescue. In Proceedings of the 4th International Conference on Ambient Systems, Networks and Technologies, Halifax, June 2013 (Best Paper Award).

17. de Denus, M., Anderson, J., and Baltes, J. (2013). Distributed Formation Control of Heterogeneous Robots with Limited Information. In Sven Behnke, Manuela Veloso, Arnoud Visser, and Rong Xiong, editors, Proceedings of RoboCup-2013: Robot Soccer World Cup XVII, Eindhoven, Netherlands, June 2013

18. Lau, M. C., Baltes, J., Anderson, J., and Durocher, S. (2012), A Portrait Drawing Robot Using A Geometric Graph Approach: Furthest Neighbour Theta-Graphs. In *Proceedings of the 11th IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2012)*, Kaohsiung, Taiwan, July 2012.

19. Baltes, J., Cheng, C.T., Lau, M.C., and Anderson, J. (2011). Cost Oriented Automation Approach to Upper Body Humanoid Robot. In *Proceedings of the 18th IFAC World Congress*, Milan, Italy, September 2011.

20. Baltes, J., Iverach-Brereton, C., Cheng, C.T., and Anderson, J. (2011). Threaded C and FreezerOS. *In Proceedings of FIRA 2011, CCIS 212,* Kaohsiung, Taiwan, pages 170-177, August 2011.

21. Baltes, J., Cheng, C.T., Seo, S., Lau, M.C., and Anderson, J. (2011) Learning of Facial Gestures Using SVMs. In *Proceedings of the 3rd International Conference on Advanced Humanoid Robotic Research*, Kaohsiung, Taiwan, August, 2011.

22. Baltes, J., Cheng, C.T., Bagot, J., and Anderson, J. (2011). Vision-Based Obstacle Run for Teams of Humanoid Robots (Demonstrated System). *In Proceedings of the 10th International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS-11)*, Taipei, Taiwan, May, 2011, pp. 1319-1320.

23. de Denus, M., Anderson, J., and Baltes, J. (2011). Flexible Multi-Robot Formation Control: Partial Formations as Physical Data Structures. In *Proceedings of the AAAI Spring Symposium on Multi-Robot Systems and Physical Data Structures*, Stanford, CA, March, 2011, pp. 4-9.

24. Allen, J., and Anderson, J. (2010). Heterogeneous Imitation Learning from Demonstrators of Varying Physiology and Skill. In *Proceedings of the International Conference on Machine Learning and Applications (ICMLA-2010)*, Washington, DC, December, 2010, pp. 105-112. IEEE Press.

25. Allen, J., Anderson, J., and Baltes., J. (2010). Imitation Learning from Humanoids in a Heterogeneous Setting. In *Proceedings of the Second International Conference on Advanced Humanoid Robotics Research, FIRA RoboWorld Congress*, Bangalore India, September, 2010.

26. Baltes, J, and Anderson, J (2010). Leveraging Mixed Reality Infrastructure for Robotics and Applied AI Instruction. *Proceedings of AAAI-10* (*Educational Advances in AI papers)*, pp., Atlanta, July 2010.

27. Allen, J., and Anderson, J., (2010). Imitation Learning with Broadly Heterogeneous Robots. *Proceedings of the 10th International Workshop on Adaptive and Learning Agents, International Conference on Autonomous Agents and Multi-Agent Systems*, Toronto, May, 2010.

28. Schor, D., Kinsner, W., and Anderson, J. (2010). A Study of Optimal Topologies in Swarm Intelligence. *Proceedings of the 23rd Canadian Conference on Electrical and Computer Engineering*, Calgary, May, 2010.

29. Baltes, J, and Anderson, J. (2010). Complex AI on Small Embedded Systems: Humanoid Robotics Using Mobile Phones**.** In Hoffman, G., (Ed.), *Proceedings of the AAAI Spring Symposium on Intelligence in Embedded Systems*, Stanford, CA, March 2010.

30. de Denus, M., Anderson, J., and Baltes, J. (2010). Heuristic Formation Control in Multi-Robot Systems Using Local Communication and Limited Identification. In Baltes, J., Lagoudakis, M., Naruse, T., and Shiry, S. (Eds), *RoboCup-2009: Robot Soccer World Cup XIII*, Heidelberg: Springer-Verlag.

31. Baltes, J., Byagowi, A., Anderson, J., and Kopacek, P., Teen Sized Humanoid Robot: Archie. *Proceedings of the First International Conference on Advanced Humanoid Robotics Research, FIRA RoboWorld Congress*, Incheon, Korea, August, 2009 (pp. 34-40).

32. Anderson, J., and Baltes, J. (2009). Using Mixed Reality to Facilitate Education in Robotics and AI. In *Proceedings of the 22nd International FLAIRS Conference*, Sanibel, FL, May 2009.

33. Gunn, T., Irani, P., and Anderson, J. (2009). An Evaluation of Techniques For Selecting Moving Targets. In *Proceedings of the 27th International Conference on Human Factors in Computing Systems (Extended Abstracts - CHI EA '09)*, Boston, April 2009, pp. 3329-3334.

34. Anderson, J., Baltes, J., and Tu, K.-Y. (2009). Improving Robotics Competitions for Real-World Evaluation of AI. *Proceedings of the AAAI Spring Symposium on Experimental Design for Real-World Systems*. Stanford, CA, March 2009.

35. Baltes, J., Mayer, N.M., Anderson, J., Tu, K-Y., and Liu, A. The Humanoid Leagues in Robot Soccer Competitions. In *Proceedings of the IJCAI Workshop on Competitions in Artificial Intelligence and Robotics*, Pasadena, California, pages 9-16, July 2009. AAAI Press.

36. McGrath, S., Baltes, J., and Anderson, J. (2009). Model-Free Active Balancing for Humanoid Robots. In Iocchi, L., Matsubara, H., Weitzenfeld, A., and Zhou, C. (Eds.) *RoboCup 2008: Robot Soccer World Cup XI*. Heidelberg: Springer-Verlag.

37. McKinnon, B., Baltes, J., and Anderson, J. (2009). Stereo-Vision Based Control of a Car using Fast Line-Segment Extraction. In Iocchi, L., Matsubara, H., Weitzenfeld, A., and Zhou, C. (Eds.) *RoboCup 2008: Robot Soccer World Cup XI*. Heidelberg: Springer-Verlag.

38. McGrath, S., Baltes, J., and Anderson, J. (2008). Active Balancing Reflexes for Small Humanoid Robots. In *Proceedings of the 17th International Federation of Automatic Control World Congress (IFAC-2008)*. Seoul, Korea July.

39. Bagot, J., Anderson, J., and Baltes, J. (2008). Vision-Based Multi-Agent SLAM for Humanoid Robots. In *Proceedings of the 5th International Conference on Computational Intelligence, Robotics and Autonomous Systems (CIRAS 2008)*. Linz, Austria, June.

40. Anderson, J., and Baltes, J. (2008). Robotics and AI as a Motivator for the Attraction and Retention of Computer Science Undergraduates in Canada. In *Proceedings of the AAAI Spring Symposium on Using AI to Motivate Greater Participation in Computer Science* (pp. 1-6). AAAI Spring Symposium Series, Stanford, CA, March.

41. Wiebe, N., and Anderson, J. (2007). A Local Approach to Developing Grounded Spatial References in Multi-Robot Systems. In *Proceedings of the 2007 IEEE International Conference on Intelligent Robots and Systems (IROS-2007)* (pp. 1357-1364). San Diego, CA, October.

42. Allen, J., and Anderson, J. (2007). A Vision-Based Approach to Imitation Using Heterogeneous Demonstrators. In Geib, C. and Pynadath, D. (Eds.), *Proceedings of the AAAI Workshop on Plan and Intent Recognition* (pp. 9-16). Vancouver, Canada, July. AAAI Press.

43. Anderson, J., and Baltes, J. (2007). A Mixed Reality Approach to Undergraduate Robotics Education. In Holte, R., and Howe, A. (Eds.), *Proceedings of AAAI-07(Robot Exhibition Papers)* (pp. 1979-1980). Vancouver, Canada, July. AAAI Press.

44. Anderson, J., and Baltes, J. (2007). A Pragmatic Global Vision System for Educational Robotics. In *Proceedings of the 2007 AAAI Spring Symposium on Robots and Robot Venues: Resources for AI Education* (pp. 1-6). Stanford, March.

45. Baltes., J., and Anderson, J. (2006). DAODAN: An Affordable Research Platform for Humanoid Robotics. In *Proceedings of the Fourth International Conference on Autonomous Robots and Agents (ICARA)* (pp. 69-74). Palmerston North, New Zealand, December.

46. Baltes, J., and Anderson, J. (2006). The Keystone Scavenger Team. In Gil, Y., and Mooney, R. (Eds.), *Proceedings of AAAI-06 (Robot Exhibition Papers)* (pp. 1958-1959). Boston, July.

47. Karpenko, M., Anderson, J., and Sepehri, N. (2006). Coordination of Hydraulic Manipulators by Reinforcement Learning. In *Proceedings of the 2006 American Control Conference* (pp. 3221-3226). Minneapolis, MN, June.

48. Baltes, J., and Anderson, J. (2006). Abarenbou and DaoDan: Affordable Research Platforms for Humanoid Robotics. In *Proceedings of the Invited Workshop on Artificial Intelligence and Humanoid Robotics, 29th Annual German Conference on Artificial Intelligence (KI-2006).* Bremen, Germany, June.

49. Baltes, J., and Anderson, J. (2006). Affordable Platforms for HuroSot. In *Proceedings of the 2006 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6 pp.). Dortmund, Germany, June.

50. Baltes, J., and Anderson, J. (2006). DaiGuardRS - an affordable platform for research into humanoid robotic soccer. In *Proceedings of the 37th International Symposium on Robotics (ISR/Robotik-2006)* (VDI Berichte 1956:59-160). Munich, Germany, May.

51. McKinnon, B., Baltes, J., and Anderson, J. (2006). A Region-Based Approach to Stereo Matching for Urban Search and Rescue. In Noda, I., Jacoff, A., Bredenfeld, and Y. Takahashi, Y. (Eds.), *RoboCup 2005: Robotic Soccer World Cup IX* (pp. 452-463). Heidelberg: Springer-Verlag.

52. Gauthier, M., and Anderson, J. (2005). Peer instruction for a Teleautonomous USAR System. In *Proceedings of the Third International Conference on Computational Intelligence, Robotics, and Autonomous Systems (CIRAS)* (6 pp.). Singapore, December.

53. Furgale, P., Anderson, J., and Baltes, J. (2005). Real-time Vision-Based Pattern Tracking Without Predefined Colors. In *Proceedings of the Third International Conference on Computational Intelligence, Robotics, and Autonomous Systems (CIRAS)* (6 pp.). Singapore, December.

54. Liu, T., Baltes, J., and Anderson, J. (2005). ArchAngel, a flexible and intuitive architecture for intelligent mobile robots. In *Proceedings of the Third International Conference on Computational Intelligence, Robotics, and Autonomous Systems (CIRAS)* (6 pp.). Singapore, December.

55. McGrath, S., Anderson, J., and Baltes, J. (2005). Improving cooperation in spatially distributed agents. In *Proceedings of the Third International Conference on Computational Intelligence, Robotics, and Autonomous Systems (CIRAS)* (6 pp.). Singapore, December.

56. van de Vijsel, M., and Anderson, J. (2005). Increasing Realism in Coalition Formation. In *Proceedings of the Third International Conference on Computational Intelligence, Robotics, and Autonomous Systems (CIRAS)* (6 pp.). Singapore, December.

57. Baltes, J., McGrath, S., and Anderson, J. (2005). The Use of Gyroscope Feedback in the Control of Walking Gaits for a Small Humanoid Robot. In Nardi, D., Riedmiller, M., and Sammut, C. (Eds.), *RoboCup-2004: Robot Soccer World Cup VIII* (pp. 628-635). Heidelberg: Springer Verlag, 2005.

58. Baltes, J., and Anderson, J. (2005). Interpolation Methods for Global Vision Systems. In Nardi, D., Riedmiller, M., and Sammut, C. (Eds.), *RoboCup-2004: Robot Soccer World Cup VIII* (pp. 434-442). Springer Verlag, Berlin, 2005.

59. Schärer, S., Baltes, J., and Anderson, J. (2004). Practical Ego-Motion Estimation for Mobile Robots**.** In *Proceedings of the 2004 IEEE Conference on Robotics, Automation, and Mechatronics* (pp. 921-926). Singapore, December.

60. Baltes, J., and Anderson, J. (2004). Introductory Programming Workshop for Children Using Robotics. In *Proceedings of the Fifth Annual Symposium on Robotics Education*. Daejon, Korea, December.

61. McGrath, S., Baltes, J., and Anderson, J. (2004). Active Balancing Using Gyroscopes for a Small Humanoid Robot. In Mukhopadhyay, S., and Sen Gupta, G. (Eds.), *Proceedings of the Second International Conference on Autonomous Robots and Agents (ICARA)* (pp. 470-475). Palmerston North, NZ, December.

62. Anderson, J., Tanner, B., and Baltes, J. (2004). Reinforcement Learning from Teammates of Varying Skill in Robotic Soccer. In *Proceedings of the 2004 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6 pp.). Busan, Korea, December.

63. McGrath, S., Baltes, J., and Anderson, J. (2004). Active Balancing in a Small Humanoid Robot. In *Proceedings of the 2004 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6 pp.). Busan, Korea, December.

64. Schärer, S., McKinnon, B., Baltes, J., Anderson, J., Wegner, R., Keystone Rescue Techniques. (2004). In Crabbe, F., Smart., W., and Tejada, S., *Proceedings of the 2004 AAAI Mobile Robot Competition and Exhibition* (27-33). San Jose, CA, July.

65. Anderson, J. , Tanner, B., and Baltes, J. (2004). Dynamic Coalition Formation in Robotic Soccer. In *Proceedings of the AAAI-04 Workshop on Forming and Maintaining Coalitions and Teams in Adaptive Multi-Agent Systems,* (pp. 1-10). San Jose, CA, July.

66. van de Vijsel, Michael, and Anderson, J. (2004). Coalition Formation in Multi-Agent Systems Under Real-World Conditions. In *Proceedings of the AAAI-04 Workshop on Forming and Maintaining Coalitions and Teams in Adaptive Multi-Agent Systems* (pp. 54-60). San Jose, CA, July.

67. Wegner, R. , and Anderson, J. (2004). Balancing Robotic Teleoperation and Autonomy in Urban Search and Rescue Environments. In *Proceedings of the 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04)* (pp. 16-30). London, ON, May.

68. Wurr, A., and Anderson, J. (2004). Multi-Agent Trail Making for Stigmergic Navigation. In *Proceedings of the 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04)* (pp. 422-428). London, ON, May.

69. Anderson, J., and Baltes, J. (2004). Agent-Based Control in a Global-Vision Robotic Soccer Team. In *Proceedings of the Agents Meet Robots Workshop, 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04)* (pp. 60-68). London, ON, May.

70. Wegner, Ryan, and Anderson, J. (2004). An Agent-Based Approach to Balancing Teleoperation And Autonomy for Robotic Search and Rescue. In *Proceedings of the Agents Meet Robots workshop, 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04)* (pp. 1-15). London, ON, May.

71. Baltes, J., Sklar, E., and Anderson, J. (2004). Teaching with RoboCup. In *Proceedings of the AAAI Spring Symposium on Accessible Hands-on Artificial Intelligence and Robotics Education* (pp. 146 – 152). Stanford, CA, March.

72. Camorlinga, S., Barker, K., and Anderson, J. (2004). Multiagent Systems for Resource Allocation in Peer-to-Peer Systems. In *Proceedings of the ACM Winter International Symposium on Information and Communication Technologies* (pp. 1-6). Cancun, MX, January.

73. Anderson, J., Baltes, J., Livingston, D., Sklar, E., and Tower, J. (2004). Toward an Undergraduate League for RoboCup. In by Polani, D., Browning, B., Bonarini. A., and Yoshida, K. (Eds.), *RoboCup-2003: Robot Soccer World Cup VII* (pp. 670-677). Heidelberg: Springer-Verlag.

74. Baltes, J., and Anderson, J. (2003). Identifying Robots Through Behavioral Analysis. In *Proceedings of the Second International Conference on Computational Intelligence, Robotics, and Autonomous Systems* (5pp). Singapore, December.

75. Baltes, J., McGrath, S., and Anderson, J. (2003). Stabilizing Walking Gaits using Feedback from Gyroscopes. In *Proceedings of the Second International Conference on Computational Intelligence, Robotics, and Autonomous Systems* (6pp). Singapore, December.

76. Baltes, J., and Anderson, J. (2003). Learning Orientation Information for Robotic Soccer Using Neural Nets. In *Proceedings of the 2003 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6pp). Vienna, Austria, October.

77. Baltes, J., McGrath, S., and Anderson, J. (2003). Feedback Control of Walking for a Small Humanoid Robot. In *Proceedings of the 2003 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6pp). Vienna, Austria, October.

78. Wegner, R., Anderson, J., and Baltes, J. (2003). Blending Autonomy and Teleoperation for Intelligent Control of Multiple Mobile Robots in Urban Search and Rescue Environments. In *Proceedings of the 2003 Federation of International Robotic-soccer Association (FIRA) Robot World Congress* (6pp). Vienna, October.

79. Baltes, J., and Anderson, J. (2003). Flexible Binary Space Partitioning For Robotic Rescue. In *Proceedings of the 2003 IEEE International Conference on Intelligent Robots and Systems (IROS)* (pp. 3144- 3149). Las Vegas, October.

80. Baltes, J., and Anderson, J. (2003). The Keystone Rescue Robotic Rescue Team. In *Proceedings of the AAAI Mobile Robot Competition, 2003 International Joint Conference on Artificial Intelligence* (pp 30-35). Acapulco, July.

81. Anderson, J., Tanner, B., and Wegner, R., (2002). Peer Reinforcement in Homogeneous and Heterogeneous Multi-Agent Learning. In *Proceedings of the IASTED International Conference on Artificial Intelligence and Soft Computing* (ASC2002) (pp. 13-18). Banff, AB, July.

82. Anderson, J., Wegner, R., and Tanner, B. (2002). Exploiting Opportunities through Dynamic Coalitions in Robotic Soccer. In *Proceedings of the AAAI International Workshop on Coalition Formation in Dynamic Multi-Agent Environments* (pp. 59-67). Edmonton, AB, July.

83. Baltes, J., and Anderson, J. (2002). A Pragmatic Approach to Robotic Rescue: The Keystone Fire Brigade. In *Proceedings of the AAAI-02 Mobile Robot Competition* (pp. 38-43). Edmonton, AB, July.

84. Anderson, J., and Wurr, A. (2002). Dimensions of Teleautonomy in Mobile Agents. In *Proceedings of the IASTED International Conference on Artificial Intelligence and Soft Computing* (ASC2002) (pp. 1-6). Banff, AB, July.

85. Groner, T., and Anderson, J. (2001). Efficient Multi-Robot Localization and Navigation Through Passive Cooperation. In *Proceedings of the 2001 International Conference on Artificial Intelligence* (IC-AI'2001, regular session) (pp. 84-89). Las Vegas, NV, June.

86. Anderson, J. (2001). Natural Integration of External Advice in an Architecture for Real-Time Intelligent Agents. In *Proceedings of the IASTED International Conference on Artificial Intelligence and Soft Computing (ASC2001)* (pp. 377-382). Cancun, Mexico, May.

87. Anderson, J. (2000). Agent Breadth in a Tool for Distributed Multi-Agent System Development. In *Proceedings of the OOPSLA Workshop on Experiences with Autonomous Mobile Objects and Agent-Based Systems* (pp. 1-8). Minneapolis, MN., October.

88. Anderson, J. (2000). A Generic Distributed Simulation System for Intelligent Agent Design and Evaluation. In *Proceedings of the 10th International Conference on AI, Simulation, and Planning in High Autonomy Systems* (pp. 36-44). Tucson, AZ, March.

89. Anderson, J. (1998). Tool-Level Support for Agent Breadth in Spatially-Explicit Simulation Models. In *Proceedings of the Twelfth Annual Conference on Geographic Information Systems* (GIS-98). Toronto, ON, October.

90. Anderson, J. (1997). Waffler: A Constraint-Directed Approach to Intelligent Agent Design. In *Proceedings of the AAAI-97 Workshop on Constraints and Agents* (pp. 70-75). July.

91. Strachan, L., Anderson, J., Sneesby, M., and Evans, M. (1997). Pragmatic User Modelling in a Commercial Software System. In Jameson, A., Paris, C., and Tasso, C (Eds.), *User Modeling: Proceedings of the Sixth International Conference, UM97* (pp. 189-200). Vienna, New York: Springer Wien, July.

92. Anderson, J. (1997). Supporting Intelligent Agents in Individual-Based Ecosystem Models. In *Proceedings of the Eleventh Annual Conference on Geographic Information Systems* (GIS-97) (pp. 3-6). Vancouver, BC, February.

93. Anderson, J., and Evans, M. (1996). Real-Time Satisficing Agents for Complex Domains. In *Proceedings of the Ninth Florida AI Symposium* (pp. 96-100). Key West., Fl, May.

94. Anderson, J., and Evans, M. (1996). Constraint-Directed Improvisation. In *Proceedings of the Eleventh Biennial Canadian Society for the Computational Studies of Intelligence Conference (AI-96)* (pp. 1-13). Toronto, On, May.

95. Anderson, J., and Evans, M. (1996). Constraint-Directed Reasoning as a Basis for Real-Time Planning. In *Proceedings of the Second International Workshop on Constraint-Based Reasoning* (pp. 40-49). Key West, FL., May.

96. Barker, K., Evans, M., and Anderson, J. (1992). Quantification of Autonomy in Multi-Agent Systems. In *Proceedings of the AAAI Workshop on Cooperation Among Heterogeneous Agents* (pp. 1-6). San Jose, CA, , July.

97. Anderson, J., and Evans, M. (1991). An Architecture for Reactive and Strategic Planning. In *Proceedings of the Fourth UNB AI Symposium* (pp. 195-207). Fredericton, NB, September.

98. Evans, M., and Anderson, J. (1991). Flexible Task Allocation in Heterogeneous Cooperative Systems. In *Proceedings of the AAAI Workshop on Cooperation Among Heterogeneous Intelligent Systems*, p. 14-26. Anaheim, CA July.

99. Evans, M., and Anderson, J. (1990). Constraint-Directed Intelligent Control in Multi-Agent Problem Solving. In Zeigler, B., and Rozenblit, J. (Eds.), *AI, Simulation, and Planning in High Autonomy Systems* (pp. 42-90). Los Alamitos, CA: IEEE Computer Society Press.

100. Evans, M., and Anderson, J. (1989). A Constraint-Based Architecture for Multi-Agent Problem Solving. In *Proceedings of the Ninth Workshop on Distributed Artificial Intelligence* (pp. 1-24). Eastsound, WA, September.

Other Conference Proceedings

In addition to a highly ranked conference (the RoboCup Symposium), RoboCup also separately publishes papers on CD, describing the technical components of accepted entrants. These are refereed by having gone through a rigorous qualification process based on demonstrated perrformance (video) in addition to a paper review. I do not want these to be confused with RoboCup Symposium papers, so I place them separately here.

1. A. Hosseinmemar, M.C. Lau, J. Anderson, C.F. Lun, Z. Wang, S. Sadeghnejad, A. Setayeshi, and J. Baltes (2018). AMN United Humanoid Teen Size Team Description Paper. Proceedings of *RoboCup 2018 (Team Description Papers)*, Montreal, Canada, June 2018.

2. Ramezani, S., N. Pourmohammadi, P. Yarahmadi, A. Arvadi, F. Fallah, A. Hosseinmemar, J. Santos, K. Morris, M.C. Lau, J. Anderson, J. Baltes, and S. Sadeghnejad (2017). AUTMan Humanoid Teen Size Team Description Paper. In *Proceedings of RoboCup-2017 (Team Description Papers)*. Nagoya, Japan, July 2017

3. Ramezani, S., and Heydari, M., and Shamshirdar, F., and Behjou, S., and Ahmadi, M., and Karimi, M., and Azari, B., and Sadeghnejad, S., and Hosseinmemar, A., and Anderson, J., and Baltes, J. (2015). AUT-UofM Humanoid Teen Size Team Description Paper. In *Proceedings of RoboCup-2015 (Team Description Papers)*. Hefei, China, July 2015

4. Tamiz, M., et al. (including Anderson, J.). (2014). AUT-UofM Humanoids. In *Proceedings of RoboCup-2014 (Team Description Papers)* (8 pp). Joao Pessoa, Brazil, July 2014.

5. Baltes, J., Iverach-Brereton, C., Carrier, D., and Anderson, J. (2013). The Snobots: Jennifer, Jimmy, and Jeff. In Sven Behnke, Manuela Veloso, Arnoud Visser, and Rong Xiong, editors, *RoboCup-2013 Proceedings (Team Description Papers)* (6 pp.), Eindhoven, Netherlands, July 2013.

6. Baltes, J., Liu, S., and Anderson, J. (2009). Humanoid Robots: Storm, Rogue, and Beast. In *Proceedings of RoboCup-2009 (Team Description Papers)* (6 pp). Graz, Austria, July, 2009.

7. Anderson, J., Baltes, J, de Denus, M., Allen, J., and Troniak, D. (2008). Keystone Mixed Reality. In *Proceedings of RoboCup-2008 (Team Description Papers)* (8pp.). Suzhou, China, July, 2008.

8. Baltes, J., Bagot, J., and Anderson, J. (2008). Humanoid Robots: Storm, Rogue, and Beast. In *Proceedings of RoboCup-2008 (Team Description Papers)* (8pp.). Suzhou, China, July, 2008.

9. Baltes, J., McCann, S., and Anderson, J. (2006) Humanoid Robots: Abarenbou and DaoDan. In *Proceedings of RoboCup-2006 (Team Description Papers)* (12pp.). Bremen, Germany, July, 2006.

10. Baltes, J., Anderson, J., McKinnon, B., and Schärer, S. (2005). The Keystone Fire Brigade 2005. In *Proceedings of RoboCup-2005 (Team Description Papers)* (12pp.). Osaka, Japan, July, 2005.

11. Baltes, J., and Anderson, J. (2005). Humanoid Robots: Hiro and DaiGuard-RS. In *Proceedings of RoboCup-2005 (Team Description Papers)* (12pp.). Osaka, July, 2005.

12. Baltes, J., Anderson, J., Schärer, S., and Wegner, R. (2004). The Keystone Fire Brigade 2004. In *Proceedings of RoboCup-2004 (Team Description Papers)* (10 pp.). Lisbon, Portugal, July, 2004.

13. Baltes, J., McGrath, S., and Anderson, J. (2004). Tao-Pie-Pie: Humanoid Robot. In *Proceedings of RoboCup-2004 (Team Description Papers)* (9 pp.). Lisbon, Portugal, July, 2004.

Other Publications

Anderson, J., and Baltes, J. (2008). *Ergo User's Manual*, http://robocupvideo.sourceforge.net

Anderson, J., and Baltes, J. (2002). *Doraemon User's Manual*, http://robocupvideo.sourceforge.net

Anderson, J. (2000). Distributed Simulation as a Tool for Artificial Intelligence Research, *Canadian Artificial Intelligence*, March, 2000.

Other Research Contributions

The robotics work listed above relies upon a large array of hardware and software developed by the co-authors of the various papers and others acknowledged in these papers. This involves everything from control and computer vision packages, to motion recording and playback and interface software. While this hardware and software design and implementation is primarily to support the research listed above, these are also research contributions in their own right. All hardware and software design for the robotics work performed in our shared laboratory is considered open-source, and is freely useable by other researchers. Several current packages are always available for download via our website.

Undergraduate Teaching Experience (with typical class sizes)

These are all presented in the University's current numbering system except where courses have no current equivalent. Because class sizes have varied significantly over the twenty-one years I have been teaching, I have attempted to average my personal experience over this time.

COMP 4510/20/60 Undergraduate Honors Project/Undergraduate Industrial Project	1-3 students	Fall 95,96,01,03, Winter 98,99,00,01,02,04,05,06, 07
COMP 4200 Expert Systems	60 students	Winter 95,98,99,00,01
COMP 4190 Artificial Intelligence	30 students	Fall 89, 96,97,98 Summer 90, 93
COMP 3440 Concepts of Programming Languages	40 students	Fall 03,05
COMP 3430 Operating Systems	100 students	Fall 98, Summer 02
COMP 3370 Computer Organization	50 students	Summer 91
COMP 3190 Introduction to Artificial Intelligence	80 students	Fall 95,01,02,03,04, 05,06,07,09,10,11,12,14, 15,16,17
74.310 Concepts of Imperative Programming Languages	50 students	Summer 98, 00, Winter 02
74.348 Non-Imperative Programming Language Concepts	60 students	Summer 99, 01, Winter 00, Summer 01

COMP 2150 Object Orientation	100 students	Winter 03, 04 (two sections),06,07,08,09,10, 11,12
COMP 2140 Data Structures	60 students	Fall 06
74.206 Discrete Structures & Programming	80 students	Summer 97
74.120 Introduction to Computer Science	100 students	Fall 91, Summer 92
COMP 1010 Introductory Computer Science I	180 students	Summer 93-4-5-6 Fall 94, 96, 97
COMP 1020 Introductory Computer Science II	175 students	Winter 97,98,99, Winter 02,05
74.123 Elementary Computer Science	30 students	Fall/Winter 89, 90
COMP 1260 Introductory Computer Usage I	180 students	Fall 92-3-4-5-6 Winter 94,95,99 Summer 94-5
COMP 1270 Introductory Computer Usage II	150 students	Winter 92-3-4-5-6-7-8 Summer 96, 98
74.111 Computer Science (for Engineers)	125 students	Winter 90

In addition to these, I have regularly substituted for COMP 4360 and COMP 4190 when it is given by others.

Completed Teaching Effectiveness Course, Centre for Higher Education Research and Development, University of Manitoba, 1990

Graduate Teaching Experience

COMP 7950 Multi-Agent Systems	8 students	Winter 00,01,03,08 Summer 02,fall 04,09

Graduate Students Supervised

Completion years are noted; where no completion year exists, the student is currently in progress. As Graduate Chair, I also supervised all Pre-M.Sc. students in the department, as well as any students that become temporarily supervisorless – these are not listed below. The graduate chair also supervises all coursework M.Sc. students – these are distinguished below to separate them from thesis students. In addition to these, I have supervised many more undergraduate research students.

Meng Cheng Lau, Post Doctoral Fellow
Amirhossein Hosseinmemar, Ph.D.
Fred Comeau, Ph.D.
Seth Fiawoo, M.Sc.
Sibendu Sarkar, M.Sc. (moved to coursework program Sept/18)
Ganesh Masurkar, M.Sc. (moved to coursework program Sept/17)
Meng Cheng Lau, Ph.D. 2014 (co-supervised with J. Baltes)
Ryan Wegner, Ph.D., 2012
Geoff Nagy, M.Sc. 2016

Ashik Rabbani, M.Sc. (coursework)
Michael de Denus, M.Sc. 2013
Chad Peters, M.Sc. 2013 (co-supervised with J. Baltes)
Tyler Gunn, M.Sc., 2011
Michael Gauthier, M.Sc., 2011 (coursework)
Shane Yanke, M.Sc., 2011 (coursework)
Kamal Abdellateef, M.Sc., 2011 (coursework)
Sharmin Khan, M.Sc., 2011 (coursework)
Adam Hrychyk, M.Sc. (moved to industry 2011)
Srikanth Sritharan (coursework – transferred to thesis M.Sc. 2012)
Akash Singh, M.Sc., (coursework)
Jaskirat Khehra, M.Sc., (coursework)
Harshit Arora, M.Sc., (coursework)
Infanully Rahmathulla, M.Sc., (coursework)
Bhavdeep Pabla, M.Sc., (coursework)
Sayani Roy, M.Sc., (coursework)
Amandeep Kaur Sarai, M.Sc., (coursework)
Inderjeet Singh, M.Sc., (coursework)
Robin Raja Samson, M.Sc. (coursework)
Jashanpreet Oberoi, M.Sc. (coursework)
Jeff Allen, M.Sc., 2009
Michael Gauthier, M.Sc. (left thesis, moved to industry, 2009, returned to CW, 2010)
Ahmed Kamal Abdellateef, M.Sc. (left thesis, moved to industry, 2009, returned to CW, 2010)
Richard Galka, M.Sc. (moved to industry in 2007)
Nathan Wiebe, M.Sc., 2006
Michael van der Vijsel, M.Sc., 2005
Quaiser Ahsan, Ph.D. (co-supervised with J. Baltes, moved to industry in 2005)
Zimpi Komo, M.Sc. (co-supervised with P. Graham, 2003)
RyanWegner M.Sc., 2003
AlfredWurr, M.Sc., 2003
Guy Kolaski (moved to industry in 2003)
Tim Groner (moved to industry in 2001)

Graduate Student Committees

I have also served as a committee member for the following graduate students (computer science students, unless otherwise noted). Where no completion year exists the student is currently in progress).

Ali Yazdanpanah Goharrizi (Electrical and Computer Engineering, internal examiner)
Maryam Salimi, Ph.D. (Electrical and Computer Engineering, internal examiner)
Stephen Howell, Ph.D. (Electrical and Computer Engineering, internal examiner)
Kumara Mundunkotwua, Ph.D. (Electrical and Computer Engineering, committee member, internal examiner, 2018)
Mansoor Alghooneh, Ph.D. (Mechanical Engineering, committee member, internal examiner, 2015)
Ehsan Tara, Ph.D. (Electrical and Computer Engineering, committee member, internal examiner, 2012)

Mohammed Shorfuzzaman, Ph.D. (committee member, internal examiner, 2012)
Marek Laskowski, Ph.D. (Electrical and Computer Engineering, committee member, internal examiner, 2010)
Andre Laplume, Ph.D. (Asper School of Business, committee member, internal examiner, 2010)
Chris Iverach-Brereton, M.Sc. 2015
Jon Bagot, M.Sc., 2014
Alan Nagelberg, M.Sc. (Electrical and Computer Engineering, committee member, external examiner, 2013)
Maryam Salimi, M.Sc. (Electrical and Computer Engineering, committee member, external examiner, 2012)
David Sanders, M.Sc. (Electrical and Computer Engineering, committee member, external examiner, 2010)
Brian McKinnon, M.Sc. (committee member, internal examiner, 2009)
Adam Chevrefils, M.Sc. (Electrical & Computer Engineering, external examiner, 2008)
Sara McGrath, M.Sc. (committee member, internal examiner, 2007)
Xiao-Wen Terry Liu, M.Sc. (committee member, internal examiner, 2006)
Danny Liu, M.Sc. (committee member, internal examiner, 2006)
Shawn Schärer, M.Sc. (Electrical and Computer Engineering, committee member, external examiner, 2006)
Derek Ross, M.Sc. (Electrical and Computer Engineering, committee member, external examiner, 2006).
Kevin Robbins, M.Sc. (Mechanical and Industrial. Engineering, committee member, external examiner, 2006).
Sergio Camorlinga, Ph.D. (committee member, internal examiner, 2005)
Myrna Donald, M.Sc. (Interdisciplinary Studies, committee member, internal examiner, 2005)
Ian Scatliff, M.Sc. (committee member, internal examiner, 2004)
Deepti Mathur, M.Sc. (Human Ecology, external examiner, 2001)
Markian Hlynka, M.Sc. (committee member, internal examiner, 1999)
Douraid Ibrahim, M.Sc. (committee member, internal examiner, 1999)

University, Faculty, and Departmental Committees

University of Manitoba Board of Governors (2015-present)
Executive Committee, University of Manitoba Board of Governors (2015-present)
Presidential Advisory Committee, Vice-President (Administration) Search (2016-17)
Chair, University Discipline Committee of the Board of Governors, University of Manitoba (2009-2012)
University Discipline Committee of the Board of Governors, University of Manitoba (2008-present)
University of Manitoba Strategic Planning Committee 2014-15
Outcomes Working Group, University of Manitoba Strategic Planning Committee, 2015-16
University of Manitoba IT Transformation, representative for Science 2014-16
University of Manitoba IT Transformation, board member, 2014-16
President's Review Committee of the Vice-President (Research and International) 2013
CIO Search Committee, 2015

University of Manitoba Senate (2008-present)
University of Manitoba Senate Executive (2010-present)
University of Manitoba Senate Committee on Rules and Procedures (2008-present)
University of Manitoba Senate Committee on Academic Review (2013-present)
University of Manitoba Awards Committee (2006-2007)
University of Manitoba Research Grants Committee (2001-2004)

Faculty of Science Local Discipline Committee (2006-present)
Faculty of Science Committee on Student Standing (2000-present)
Faculty of Graduate Studies Council (2006-2009)

Head, Computer Science (2012-17, 2018 until March, currently on medical leave and looking forward to resuming my second term at some point – includes voting membership on every departmental committee, Chairship of two of these, and nonvoting membership on Faculty tenure and promotion committees for CS)
Chair, Faculty of Science Hiring Committee for Computer Science, 2012, 2013, 2014, 2015, 2016
Associate Head (Graduate) (2010-12)
Chair, Computer Science Graduate Studies Committee (2009-2012)
Computer Science Graduate Studies Committee (2000-2006 and 2007-present)
Computer Science Graduate Appeals Committee (2006-2007)
Computer Science Promotion Committee (2006, 2009, 2010)
Computer Science Tenure Committee (2004, 2005)
Computer Science Undergraduate Curriculum Review Committee (1999-2002, 2004-2006)
Computer Science Industrial Liaison Committee (2000-2004)
Computer Science Hiring Committee (2000, 2001, 2002, 2003, 2011)

Other University Service

Shad Valley Manitoba – Program Assistant, 1992-1995, Computer Science Faculty 1995, appointed director 1996.

Developed and ran the *Exploring Science and Technology* program, Faculty of Science, 1996 and 1997.

I participate in a range of mentorship activities in terms of teaching and student supervision. As Grad chair, I gave recruiting seminars for graduate students each year, as well as speaking occasionally outside the department. Myself and my graduate students are often tapped for outreach activities, and I also give regular interviews and commentary to the media on items related to artificial intelligence and robotics.

Other Professional Activities (selected, post-2004)

Reviewer, 2019 IEEE International Conference on Robotics and Automation
Editorial Board, Advances in Robotics Research: An International Journal
Editorial Board, ICTACT Journal on Soft Computing (IJSC)
Editorial Board, International Journal of Applied Mathematics and Engineering Sciences

Organizing Committee, RoboCup 2018, Montreal, Quebec (until Mid 2017)

Program Committee, 2018 International Conference on Machine Learning and Applications
Program Committee, 2017 International Conference on Machine Learning and Applications
Program Committee, 2016 International Joint Conference on Artificial Intelligence
Program Committee, 2016 International Conference on Machine Learning and Applications
Program Committee, 2016 International Conference on Advanced Humanoid Robotics Research
Program Committee, International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS), Istanbul Turkey 2015
Program Committee, Robot Vision Symposium, 7th Pacific Rim Symposium on Image and Video Technology (PSIVT-RV), 2015
Technical Committee Member, 2015 IEEE Information Technology, Electronics and Mobile Communication Conference
Program Committee, 2015 International Conference on Advanced Humanoid Robotics Research
Program Committee, 2015 International Conference on Machine Learning and Applications
Program Committee, 28th IEEE Canadian Conference on Electrical and Computer Engineering, Halifax, May 2015
General Co-Chair, 6th International Conference on Advanced Humanoid Robotics Research, Beijing China November 2014
Program Committee, International Conference on Machine Learning and Applications, Detroit MI, December 2014
Program Committee, 5th International Conference on Advanced Humanoid Robotics Research, Shah Alam, Malaysia, August 2013
Program Committee, AI-13 (Canadian AI Conference), May 2013
Program Committee, International Conference on Machine Learning and Applications, Miami, Fl, December 2013
Program Committee, FIRA RoboWorld Congress 2013, Shah Alam, Malaysia, August 2013
Program Committee, 25th IEEE International Conference on Tools with Artificial Intelligence, Washington, DC, November 2012.
Co-Chair, 4th International Conference on Advanced Humanoid Robotics Research, Bristol, UK, August 2012
Program Committee, FIRA RoboWorld Congress 2012, Bristol UK August 2012
Program Committee, IEEE International Conference on Automation and Logistics, Zhengzhou, China, August, 2012
Program Committee, 24th IEEE International Conference on Tools with Artificial Intelligence, Athens, Greece, November 2012.
Program Committee, International Conference on Machine Learning and Applications, Boca Raton, Fl, December 2012
Program Chair, 3rd International Conference on Advanced Humanoid Robotics Research, Kaohsiung, Taiwan, 2011
Program Chair, 2nd International Conference on Advanced Humanoid Robotics Research, Bangalore, India, 2010
Program Committee, 2011 RoboCup Symposium, Istanbul
Demonstrations Program Committee, 2011 International Conference on Autonomous Agents and Multi-Agent Systems, Taipei

Program Committee, 23rd IEEE International Conference on Tools with Artificial Intelligence, Boca Raton, FL.
Program Committee, IEEE International Conference on Automation and Logistics, Chongqing, China, 2011
Program Committee, International Conference on Machine Learning and Applications, Honolulu, 2011
Program Committee, International Conference on Machine Learning and Applications, Washington, DC., 2010
Program Committee, 2010 RoboCup Symposium, Singapore.
Program Committee, Third International Symposium on Unmanned Aerial Vehicles (UAV-10), Dubai.
Reviewer, IEEE Computational Intelligence Magazine, February 2012
Reviewer, IEEE International Symposium on Industrial Electronics, Hangzhou, China, May 2012
Reviewer, IEEE International Conference on Robotics and Automation, Karlsruhe, Germany, 2013
Reviewer, IEEE International Conference on Robotics and Automation, Hong Kong, June 2014
Reviewer, Knowledge Engineering Review, 2016
Reviewer, Journal of Field Robotics, 2014, 2015
Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2011, 2015
Reviewer, IFAC World Congress, Milan, Italy, 2011
External Referee, Full Professor Promotion, University of Western Ontario, 2011
Program Committee, 23rd International FLAIRS Conference, Daytona, Fl., 2010
Reviewer, IEEE/ASME Transactions on Mechatronics, 2010
Reviewer, IEEE-RAS International Conference on Humanoid Robots, Nashville, 2010
Reviewer, American Control Society Conference, 2010
Reviewer, IEEE Industrial Electronics Society Conference, 2010
Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2010
Session Chair, 10th International Workshop on Adaptive and Learning Agents, International Conference on Autonomous Agents and Multi-Agent Systems, Toronto, May, 2010
Reviewer, NSERC Discovery Grants, 2011, 2010, 2009, 2008
Program Chair, 1st International Conference on Advanced Humanoid Robotics Research, Incheon, Korea, 2009
Program Committee, 2009 RoboCup Symposium, Graz, Austria.
Program Committee, International Conference on Machine Learning and Applications, 2009
Program Committee, IEEE International Conference on Automation and Logistics, 2009
Reviewer, IEEE International Conference on Robotics and Systems, 2009
Reviewer, IEEE Control Systems Society Conference, 2009
Reviewer, CFI Leaders Opportunity Fund Grants, 2009
Reviewer, IEEE International Conference on Robotics and Automation, 2009
Reviewer, IEEE International Conference on Mechatronics, 2009
Judge, 2009 Canada-Wide Science Fair
2008 Rules Working Group, Microrobot Competition, RoboCup 2008
Qualification Co-Chair, Microrobot Competition, RoboCup 2008

Program Committee, 2008 IEEE International Conference on Machine Learning and Applications
Program Committee, 2008 IEEE International Conference on Automation and Logistics
Reviewer, 2008 IEEE Industrial and Electronics Society Conference
Reviewer, 2008 IEEE International Conference on Decision and Control
Reviewer, 2008 IEEE International Conference on Emerging Technologies and Factory Automation
Reviewer, 2008 IEEE International Conference on Robotics and Systems
Reviewer, NSERC collaborative health care research project grants, 2008
Program Committee, 2007 International Conference on Autonomous Agents and Multi-Agent Systems, Hawaii
Program Committee, 2007 International Conference on Machine Learning and Applications
Reviewer, IEEE Control Systems Society Conference 2007
Reviewer, 33rd Annual Conference of the IEEE Industrial Electronics Society
Invited Member, Physical Visualization Working Group, RoboCup, 2007
Reviewer. International Journal of Intelligent and Robotic Systems, 2007
Organizer, IROS-2007 invited session, *Complex Motion Planning for Humanoid Robot*s
Reviewer, Team Proposals, Physical Visualization Subleague, RoboCup-2007
Program Committee, 2007 International Conference on Autonomous Agents and Multi-Agent Systems, Hawaii
Program Committee, 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Beijing
Program Committee, IEEE International Conference on Machine Learning and Applications
Program Committee, IEEE International Conference on Advanced Information Networking and Applications (AINA-07), Niagara Falls, Canada
Program Committee. International Workshop on Intelligent Agents in Wireless Sensor Networks (IA-WSN) at 2006 IEEE / WIC / ACM International Conference on Intelligent Agent Technology, Hong Kong
Reviewer. International Journal of Intelligent Control and Systems, 2005
Associate Editor, IEEE International Conference on Control Systems (CCA-05), Toronto, 2005
Program Committee, IEEE International Conference on Robotics and Systems (IROS), Edmonton, AB, 2005
Reviewer. International Journal of Robotics and Automation, 2004
Co-Chair, Workshop on Forming and Maintaining Coalitions and Teams in Adaptive Multi-Agent Systems, Nineteenth National Conference on Artificial Intelligence, San Jose, CA, July, 2004
Program Committee, Joint Workshop on Multi-Agent and Multi-Agent-Based Simulation, Third International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'2004), New York.
Program Committee, Agents Meet Robots Workshop, 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04), London, ON, May 2004
Program Committee, Agents Meet Robots Workshop, 17th Conference of the Canadian Society for the Computational Studies of Intelligence (AI-04), London, ON, May 2004

IEEE Senior Member
AAAI Member