

Curriculum Vitae

YangQuan Chen, Ph.D.

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Contact Information

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Home address: 1038 East, 100 South, Logan, Utah 84321, USA. Home phone: (435)750-7390

Education

Ph.D.	Electrical Engineering	Nanyang Technological University, Singapore	1998
M.S.	Automatic Control	Beijing Institute of Technology, China	1989
B.S.	Industrial Automation	Univ. of Science and Technology of Beijing, China	1985

USU Employment History

2000-2002 Research Assistant Professor of Electrical Engineering, ECE Dept. and CSOIS.
2002-2008 Assistant Professor, ECE Dept. of USU. Director of CSOIS (since June 2004)
2008- Associate Professor with tenure, Graduate Coordinator, ECE Dept. of USU.

Other Related Experience

1999-2000 Staff Engineer, Servo Product Dev. Group, Seagate Tech. Int., Singapore Science Park Design Center, Singapore.
1998-1999 Professional Officer, Center for Intelligent Control, National University of Singapore. (<http://www.ece.nus.edu.sg/cic>)
1996-1998 Research Engineer, ECE Dept. of National University of Singapore.
1995-1996 Research Scholar, School of EEE, Nanyang Technological University, Singapore. (<http://www.ntu.edu.sg/eee/>)
1994-1995 Associate Professor, Dept. of Electrical Engineering, Xi'an Institute of Technology
1992-1995 Deputy Dept. Head, Dept. of Electrical Engineering, Xi'an Institute of Technology, China (now Xi'an Technological University <http://www.xatu.edu.cn>)
1988-1994 Lecturer, Dept. of Electrical Engineering, Xi'an Institute of Technology, China
1987-1988 Visiting Researcher, Dept. of Automatic Control, Beijing Institute of Technology, China.

Patents (14)

1. US06,324,890. 12/04/2001. "Method of characterizing and screening voice coil motor pivot friction in a low velocity region"
2. US06,437,936. 08/20/2002. "Repeatable runout compensation using a learning algorithm with scheduled parameters"
3. US06,563,663. 05/13/2003. "Repeatable runout compensation using iterative learning control in a disc storage system"
4. US06,574,067. 06/03/2003. "Optimally designed parsimonious repetitive learning compensator for HDDs having high track density"
5. US06,636,375. 10/21/2003. "Seek in a disc drive with nonlinear pivot friction"
6. US06,654,198. 11/25/2003. "Repeatable run-out error compensation method for a disc drive"

7. US06,661,599. 12/09/2003. "Enhanced adaptive feedforward control to cancel OPR disturbance by shaping the internal mode"
8. US06,674,589. 01/06/2004. "Method for harmonic frequency identification in a disc drive".
9. US06,674,607. 01/06/2004. "Method and apparatus for determining high order polynomials for linearization of position signals".
10. US06,690,534. 02/01/2004. "Method & apparatus for handling multiple resonance freq. in disc drives using active damping".
11. US06,704,159. 03/09/2004. "Automatic acoustic management system for a disc drive"
12. US06,785,073. 08//31/2004 "Identification and cancellation of cage frequency in a hard disc drive"
13. US06,831,804. 12/14/2004 "Method and apparatus for handling resonance effects in disc drives using active damping"
14. US07,599,752. 10/06/2009. "Tuning methods for fractional-order controllers"

Consulting

2002 Seagate Technology International.
2004 Cornice Inc.

Professional Registration

Certified Six Sigma Green Belt (2000, Singapore)

Scientific and Professional Societies Membership

Senior Member, IEEE (Control Systems Society, Systems, Man, and Cybernetics Society, Robotics and Automation Society);

Member of ASME (American Society of Mechanical Engineers), AMA (Academy of Model Aeronautics), ASEE (American Society for Engineering Education), AUVSI (The Association for Unmanned Vehicle Systems International), AWRA (American Water Resources Association).

Teaching

Number of different graduate courses taught at USU: 5+10 (**IS**: independent study course)

- **ECE/MAE7350** **Intelligent Control Systems (3 credits)**
- **ECE/MAE7330** **Nonlinear and Adaptive Control (3 credits)**
- **ECE/MAE7360** **Robust and Optimal Control (3 credits)**
- **ECE/MAE7750** **Distributed Control Systems (3 credits)**
- **ECE6010** **Random Processes in Electronic Systems (3 credits)**
- ECE6930 ST: Machine Vision in Control and Automation (**3 credits, IS**)
- ECE7930 ST: Computational Intelligence (**3 credits, IS**)
- ECE7930 ST: Computational Optimal Control (**3 credits, IS**)
- ECE6930 ST: Advanced Control Designs (**3 credits, IS**)
- ECE6930 ST: Sensor Networks (**3 credits, IS**)
- ECE6930 ST: Fractional Calculus in Modeling, Control & Signal Proc. (**3 cr., IS**)
- ECE7930 ST: Distributed Control of Robotic Networks (**4 credits, IS**)
- ECE6930 ST: Multi Unmanned Aerial Vehicle Systems (**3 credits, IS**)
- ECE6930 ST: Solving Math. Problems in MATLAB
(**3 credits, regular summer'09 course, with D. Xue**)
- ECE6930 ST: Applied Fractional Calculus in Engineering
(**3 credits, regular summer'09 course, with C. Li, Y. Li and D. Xue**)

Number of different undergraduate courses taught at USU: 4+2

- **ECE/MAE5320** **Mechatronics (lab intensive) (4 credits)**
- **ECE3620** **Circuits and Signals (3 credits)**
- **ECE4840** **Design-II (Senior Design) Engineering Design (3 credits)**

- **ECE4850** **Design-III (Senior Design) Engineering Communications (2 credits)**
- PHYX2400 ST: Nanoscience and Technology - Materials Today
(2 credits, regular course, NSF NUE grant)
- PHYX3500 ST: Nanomechanics **(3 credits, regular course, NSF NUE grant)**

Honors and Awards (1999-2009)

- 2009. Associate Editor for IEEE Transactions on Control Systems Technology
- 2009. Retention Award
- 2009. First Prize, 7th AUVSI UAS (Unmanned Aerial Systems) Competition. Wins \$14,000 for First Place Overall
- 2009. Graduate thesis External Examiner. Kuwait University
- 2009. Graduate thesis External Examiner & Oral Examiner, University of Canterbury, New Zealand.
- 2009: May-June. Invited recruitment/academic visits and seminars to 9 Chinese universities.
 - Beijing Institute of Technology (BIT), Beijing, China (5/15)
 - Nantong University (NTU), Jiangsu Province, China (5/21)
 - Hohai University (HHU), Nanjing, Jiangsu Province, China (5/22)
 - Nanjing Institute of Technology (NJIT), Nanjing, Jiangsu Province, China (5/22)
 - Xi'an Technological University (XATU), Xi'an, Shaanxi Province, China (5/26)
 - Xidian University, Xi'an, Shaanxi Province, China (5/26)
 - Northwestern Forest & Agriculture Univ. (NWF&AU), Yangling, Shaanxi Province, China (5/28)
 - South China University of Technology (SCUT), Guangzhou, Guangdong Province, China (6/1)
 - Beijing Jiao Tong University (BJTU), Beijing, China (6/3)
- 2009: June 10. Tutorial Session. Organizer and Speaker. American Control Conference. June 10-12, 2009, St. Louis, MO, USA
- 2009: May 27. Semi-Plenary Speaker. The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009), Xi'an, China.
- 2009: March 13. UC Berkeley Invited Seminar. "Fractional order thinking: from mechatronics to biomechatronics and beyond".
- 2008: Second Prize, 6th AUVSI UAS (Unmanned Aerial Systems) Competition. Wins \$8,000 for 2nd Place Overall, 2nd Place in Mission, Honorable Mention in both Orals and Journal, and Prize Barrels for Autonomous Mission Flight, Autonomous Landing, JAUS and Perfect Identification of the Off-Path Target.
- 2008: Invited Panelist. "*Panel Discussion: What skills do controls engineering graduates need to have for industry?*" 2008 American Control Conference, Seattle, WA, July 2008.
- 2008: Plenary Speaker. The 3rd IFAC Fractional Differentiation and its Applications (FDA08). Ankara, Turkey, 05 - 07 Nov., 2008.
- 2008: Ph.D. student Yan Li won the prestigious FDA08 Young Riemann-Liouville Award.
- 2007: Outstanding Researcher of the Year. Dept. of Electrical and Computer Engineering, Utah State University.
- 2007: Special Invited Talk. The 2nd IEEE Conference on Industrial Electronics and Applications (ICIEA 2007), 23-25 May 2007, Harbin, China.
- 2006: Achievement Award, 2nd IFAC Int. Workshop on Fractional Derivative and its Applications (FDA06), Porto, Portugal.
- 2006: Plenary Speaker, 2nd IFAC Int. Workshop on Fractional Derivative and its Applications (FDA06), Porto, Portugal.
- 2005: 2nd Place. Crossbow Smart Dust Contest, \$2000 Cash Reward and \$500 Travel Allowance.
- 2003: *Automatica* Outstanding Reviewer.
- 2003: Invited Tutorial Lecturer (3 hours). The 1st Int. Summer School on Iterative Learning Control. June. CSOIS, Logan, Utah.
- 1999, 2000: Many Seagate Patent Awards. 1st Seagate TEC Speaker, Seagate Core Employee Award (2000).

Institutional and Professional Service

Institutional:

- Chair, Promotion/Tenure Committee for a faculty member in ECE Dept. (2009)
- Director, CSOIS Center for Self-Organizing and Intelligent Systems (<http://www.csois.usu.edu>) (since June 2004)
- Chair, Electrical Engineering Faculty Search Committee, ECE Dept. of USU (2007),
- Chair of the Graduate Committee, ECE Dept. of USU (2008-)
- Member, Dept. Head Search Committee, ECE Dept. of USU (2007).
- Member, Executive Committee, ECE Dept. of USU (2007-).
- Member of the Electrical Engineering Faculty Search Committee, ECE Dept. of USU (2004, 2006),
- Member of the Graduate Committee, ECE Dept. of USU (2002-2008)
- Judge, USU Graduate Symposium, USU Graduate Student Senate, March 4, 2004; April 15, 2005.
- USU CSSA (Chinese Students and Scholars Association) Faculty Advisory Committee (2003).
- Faculty Mentor (2001-2002) for Vector Floor Theme Hall Program, Jones Hall, Housing and Food Service and College of Engineering.
- Faculty Mentor (2002-2003) for Theme Housing Program, Reeder Hall, Housing and Food Service and College of Engineering.
- Appreciation Letter from the late USU President Kermit L. Hall. "Student Move-in Days". Volunteer helper, for two days, 2003.

Professional:

- Associate Editor, IEEE Transactions on Control Systems Technology (TCST) (2009-)
- Associate Editor, ASME Journal of Dynamic Systems, Measurement and Control (J-DSMC) (2009-)
- Associate Editor, Fractional Calculus and Applied Analysis (FCAA: ISSN 1311-0454) (2009-)
- Associate Editor, Fractional Dynamic Systems (FDS), <http://fds.ele-math.com/> (2009-)
- Associate Editor, International Journal of Mechatronics and Applications (Hindawi) (2009-)
- Founding Co-Editor-in-Chief. International Journal of Cyber-Physical Systems (IJCPS) (2008-)
<http://intechweb.org/journal.php?id=5&content=title&sid=15>
- Associate Editor, Acta Montanistica Slovaca <http://actamont.tuke.sk/eb.html> (2009-)
- Associate Editor, ISA Review Board for American Control Conference of AACC (2004-)
- Associate Editor, IEEE Control Systems Society Conference Editorial Board (2002-)
- ARL Proposal Review, 2009
- NASA Panel Review, 2008
- NSF CISE REU Panel Review, 2009.
- NSF CAREER Panel Review, 2009.
- NSF Panel Review, 2007, 2008, 2009.
- Chilean NSF Proposal Review, 2008.
- Oversea Ph.D. Dissertation External Examiner, 2009, U. of Canterbury, New Zealand.
- Oversea Thesis External Examiner, 2009, Kuwait University.
- Oversea Ph.D. Dissertation External Examiner, 2006, IIT, India.
- Canada NSERC Proposal Review, 2004

2010:

- **General Chair**, IEEE/ASME Int. Conf. on Mechatronics and Embedded Systems and Applications (MESA2010), July 15-17, 2010, Qingdao, China, www.asmemesa.org
- **Program Chair**, International Program Committee. 4th IFAC Int. Workshop on Fractional

Derivative and Applications (FDA2010), Spain.

- IPC member. The 3rd International Symposium on Systems and Control in Aeronautics and Astronautics (ISSCAA 2010, <http://www.isscaa.net/> Harbin, China, June 08-10, 2010
- Member, Organizing Committee. Electrical Power and Energy Conference 2010. (pending)
- IPC member, IEEE ICCA, Xiamen, China, <http://www.ieee-icca.org/>
- IPC Member. IEEE ICNSC, 2010, Chicago, USA. <http://www.ezconf.net/icnsc10/>
- IPC member, IEEE ISNN, 2010, Shanghai, China, <http://isnn2010.sjtu.edu.cn/>
- **Invited Session Co-Chair.** The 22nd CCDC2010. May 26-28, 2010, Xuzhou, China. <http://www.ccdc.neu.edu.cn/>
- **Workshop Co-Chair.** The 8th WCICA, July 6-9, 2010, Jinan, China. <http://www.wcica.info/>
- IPC member. 2010 International Conference on Modeling, Identification and Control, Okayama City, Japan, July 17-19, 2010. <http://www.suri.sys.okayama-u.ac.jp/icmic2010>
- **Workshop Co-Chair.** IEEE ICIA. 2010 IEEE International Conference on Information and Automation, June 20 - 23, 2010, Harbin, Heilongjiang, China. <http://www.icia2010.org/>
- IPC member, ICARCV 2010, Singapore. www.icarcv.org/

2009:

- **Program Chair,** 2009 ASME/IEEE Mechatronic and Embedded Systems and Applications (MESA), San Diego, CA, August 30-Sept. 2, 2009. <http://iel.ucdavis.edu/ mesa/MESA09/>
- **Member, Advisory Committee.** Symposium on Learning Control at IEEE CDC 2009. December 14-15, Shanghai 2009.
- **Organizing Committee.** IFAC Workshop on Networked Robotics. Golden, CO, USA. <http://control.mines.edu/netrob09/>
- **Organizer.** Whole day workshop. “Fractional Calculus Day @ Utah State University”. CSOIS. April 24, 2009. http://mechatronics.ece.usu.edu/foc/event/FOC_Day@USU/2009.html
- IPC member. IEEE CBMS. <http://cviat.ece.ttu.edu/cbms2009/>
- IPC member. IASTED CI 2009
- IPC member, IEEE ICCA, New Zealand, <http://www.ieee-icca.org/>
- IPC member. 2009 Fifth International Conference on Intelligent Sensors, Sensor Networks and Information Processing. Melbourne, Australia, <http://www.issnip.org/2009/>
- **Symposium Co-Chair.** The first Symposium on CPS (Cyber-Physical Systems) at MESA09, San Diego.
- **Symposium Co-Chair.** The first Symposium on Small Unmanned Aerial Vehicle Technologies and Applications (SUAUTA) at MESA09, San Diego.
- **Organizer.** Pre-Conference One-Day Workshop on “Fractional Calculus in Controls and Signal Processing”, 2009 American Control Conference. (www.a2c2.org/) (cancelled)
- **Organizer.** Tutorial Session on “Fractional Calculus in Controls and Signal Processing” during 2009 American Control Conference. (more info: <http://fractionalcalculus.googlepages.com>)
- **Invited Session Co-Chair,** 2009 Int. Conf. on Decision and Control in China (CCDC09), Guilin, China.
- **Track Chair of Mechatronics.** The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009) Xi’an, China. (www.ieeeiciea.org)
- Tutorial/Workshop Co-Chair. IEEE ICMA2009. Changchun, China. (www.ieee-icma.org)
- Member of IPC. The 6th International Conference on Informatics in Control, Automation and Robotics. ICINCO 2009. Milan, Italy. <http://www.icinco.org/cfp.htm>
- Member of IPC. The 2009 IEEE Symposium on Approximate Dynamic Programming and Reinforcement Learning (ADPRL 2009) Nashville, Tennessee, USA, March 30 - April 2, 2009, as part of the SSCI 2009, <http://www.ieee-ssci.org/>

- Member of IPC. Sixth International Symposium on Neural Networks. ISNN2009. Wuhan, China.
<http://www.easychair.org/conferences/?conf=isnn2009>

2008:

- **Technical Program Chair, Members of Executive Committee, Chair of Mechatronics Control**, 2008-2009 ASME/IEEE Mechatronic and Embedded Systems and Applications (MESA) Committee.
<http://iel.ucdavis.edu/mesa/>
- Member, International Program Committee. 3rd IFAC Int. Workshop on Fractional Derivative and Applications (FDA08), Turkey.
- **Technical Program Co-Chair**, 2008 Int. Conf. on Decision and Control in China (CCDC08), Yantai, China.
- **Tutorial/Workshop Co-Chair**, 2008 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM08), Xi'an, China.
- **Tutorial/Workshop Co-Chair**, 2008 IEEE International Conference on Mechatronics and Automation (ICMA08), Japan.
- Member, International Program Committee. The 7th World congress on Intelligent Control and Automation (WCICA'08), Chongqing China during June 25-27, 2008.
- Member, International Program Committee. 2008 IEEE Conference on Soft Computing in Industrial Applications in Muroran, Japan, June 25-27, 2008.
- Member, Program Committee. 2008 IEEE International Conference on Networking, Sensing and Control (IEEE ICNSC'08), Sanya, China.
- Member, Program Committee. IEEE ISIC (International Symposium of Intelligent Control) track of the IEEE MSC2008, San Antonio, TX, USA, October 2008.
- Member, International Program Committee. NSC08 - Conference on Nonlinear Science and Complexity, July 28-31, 2008, Porto, Portugal
- **Track Chair**, The 3rd IEEE Conference on Industrial Electronics and Applications (ICIEA 2008) 3-5 June 2008, Singapore.
- **Co-Organizer**, Invited Session on Iterative Learning Control. *The 10th International Conference on Control, Automation, Robotics and Vision*, ICARCV 2008, Hanoi, Vietnam, 17 - 20 December 2008.

2007:

- **Organizer**. Whole day workshop. "Fractional Calculus Day @ Utah State University". CSOIS. Sept. 3, 2007.
- **Program Chair**, ASME/IEEE Int. Conf. on Mechatronics, Embedded Systems and Applications (MESA07), 9/4-7, 2006, Las Vegas.
- Member, Scientific Committee. Symposium on Applied Fractional Calculus. Badajoz (Industrial Engineering School), Spain, October 15-17, 2007.
- Member, Program Committee. 2007 IEEE International Conference on Automation and Logistics (ICAL 2007), Jinan, Shandong, China, August 18-21, 2007.
- Member, International Program Committee. 8th International Carpathian Control Conference (ICCC). Hotel Patria, Štrbské Pleso, High Tatras, Slovak Republic on May 24-27, 2007.
- Member, Technical Program Committee (TPC). 2007 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2007). Honolulu, Hawaii, USA, April 1-5, 2007.
- Member of the International Program Committee (IPC) for the 20th IEEE International Symposium on Computer-Based Medical Systems, Maribor, Slovenia, June 20-22, 2007.
- Member, International Program Committee. ICINCO 2007. International Conference on Informatics in Control, Automation & Robotics
- **Tutorial and Workshop Co-Chair**. Member, International Program Committee. The 2007 IEEE

International Conference on Robotics and Biomimetics (ROBIO 2007), Sanya, China, December 15 to 18, 2007.

- **Track Chair of Mechatronics.** 2007 IEEE International Conference on Industrial Electronics and Applications, Harbin, China.
- **Special Invited Talk/Discussion.** 2007 IEEE International Conference on Industrial Electronics and Applications, Harbin, China
- **IPC Co-Chair.** 2007 IEEE International Conference on Industrial Electronics and Applications ([IEEE ICMA07](#)), Harbin, China.
- IPC member. 2007 IEEE Int. Symposium on Approximate Dynamic Programming and Reinforcement Learning ([ADPRL07](#)), Hawaii, USA.
- IPC member. IEEE SMCia/07 workshop in Passau, Germany, on August 1 - 3, 2007.
- IPC member. The International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP 2007). November 4-9, 2007 - Papeete, French Polynesia (Tahiti)
- IPC member. IASTED International Conference on Computational Intelligence (CI 2007), Jul 02, 2007 to Jul 04, 2007, Banff, Canada.
- **Review Co-Coordinator.** 2007 ASME Int. Design Engineering Technical Conference and Computers and Information in Engineering (DETC/CIE) Conference. 6th Int. Conf. on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC). MSNDC-14: Fractional Derivatives and Their Applications (FDTA07). Sept. 2007. Las Vegas, NV, USA
- Member, IPC. CSI 2007. 10th Int. Conf. on Computer Science and Informatics with 8th Joint Conf. on Information Sciences (JCIS 2007) July 18 - 24, 2007, Salt Lake City, Utah.

2006:

- IPC member, The International Conference on Wireless Algorithms, Systems and Applications ([WASA06](#)), Xi'an China;
- **Award Committee Chair**, IEEE Mountain Workshop on Adaptive & Learning Systems ([SMC/ALS06](#)), Utah State Univ., Logan, 7/24-26/2006
- Member, Program Committee, 2006 IEEE Symposium on Computer-Based Medical Systems, Marriott Salt Lake City – City Center, Salt Lake City, Utah, USA, June 22-23, 2006. <http://CBMS2006.ece.byu.edu>
- Member, Program Committee, IEEE Int. Conf. On Networking, Sensing & Control (ICNSC06) Ft. Lauderdale, Fl., U.S.A. April 23-25, 2006
- **Tutorial and Workshops co-Chair.** IEEE Int. Conf. on Information Acquisition (ICIA06), August 20 - 23, 2006, Shandong University, China.
- **Program co-Chair**, The 2006 IEEE Int. Conf. on Mechatronics & Automation, June 25-28, 2006 (ICMA06) Luoyang, Henan Province, China.
- Member, IPC, the 2nd IFAC Workshop on Fractional Differentiation and its Applications, 19-21 July, 2006, Porto, Portugal.
- **Plenary Speaker**, the 2nd IFAC Workshop on Fractional Differentiation and its Applications, 19-21 July, 2006, Porto, Portugal.
- Member, IPC, 9th Int. Conf. on Control, Automation, Robotics and Vision, ICARCV'06, Singapore, 5-8 Dec. 2006.

2005:

- **Organizer.** Whole day workshop. "Fractional Calculus Day @ Utah State University". CSOIS. April 19, 2005.
- Member, IPC. 7-th Computational Intelligence and Natural Computing (CINC05) with 8th Joint Conf. on Information Sciences (JCIS 2005) July 21 - 26, 2005, Salt Lake City, Utah.
- Member, IPC. CSI 2005. 8th Int. Conf. on Computer Science and Informatics with 8th Joint Conf. on Information Sciences (JCIS 2005) July 21 - 26, 2005, Salt Lake City, Utah.
- Member, TPC for Track 8: "Theory, Design and Implementation of Circuits & Systems". 2005

ICCCAS , Hong Kong, China.

- **Tutorials/Workshops Co-Chair.** IEEE Int. Conf. on Information Acquisition (IEEE ICIA 2005), Hong Kong/Macau, China. July 9 to 10 and the regular conference program at the Chinese University of Hong Kong from July 11 to 13, 2005.
- Member, International Program Committee; Invited Session co-Chair, 2005 IEEE ICMA05, July 29-August 1, Niagara Falls, Ontario, Canada.
- **Co-Chair, Special/Organized Sessions**, 2005 IEEE/RSJ IROS05. August 2-6, 2005, Edmonton, Alberta, Canada.

2004:

- **Reviewer Committee**, IFAC Int. Workshop on Fractional Derivative and Applications (FDA04), July 19-21, 2004, Bordeaux, France.
- Member, Technical Program Committee (TPC). 2004 International Conference on Communications, Circuits and Systems (ICCCAS04), June 28-June 30, 2004, Chengdu, Sichuan, China.
- Member, International Program Committee (IPC), IEEE Int. Conf. Computational Cybernetics 2004 (ICCC04), Austria.
- Session Chair. Geometric and Computational Methods in Control American Control Conference 2004.

2003:

- Member, International Program Committee (IPC), IEEE CIAC2003, Hong Kong, China; IEEE CIRA2003, Kobe, Japan.
- Session Chair and Session co-Chair. ASME DETC 2003. VIB. Chicago; Session co-Chair. IEEE CDC2003 (Program), Hawaii, USA.
- **Founding Member** of ASME subcommittee “*Fractional Dynamics*”. (2003, Chicago)
- **Co-organizer and Instructor**, Tutorial Workshop on “Fractional order calculus in control and robotics” at IEEE CDC’02, Las Vegas, NE, USA.
- Co-organizer, Invited Sessions on “Iterative Learning Control – Design & Applications”. 17th IEEE ISIC’02, Oct. 27-30, Vancouver, Canada.
- Reviewer, NSERC funding proposal, Canada, 2001. South Africa Science Foundation proposal review, 2005.
- Co-organizer, International Mini-Symposium on Iterative Learning Control, CSOIS, Utah State University, Logan, Nov. 2001.
- Member, IPC, IEEE CIRA 2001, July 29 - August 1, 2001, Banff, Alberta, Canada
- **Panelist**, “Panel discussions on iterative learning control”, The 3rd Asian Control Conference, Shanghai, China, July 2000.
- Co-organizer, Multiple Invited Sessions on “Iterative Learning Control” in the ICARCV’2000. Dec. 2000, Singapore.

Reviewers for many journals and international conferences.

Session chair/co-chair for many international conferences.

Professional Development Activities

- June 13, 2009. Workshop in honor of Professor B. Ross Barmish after American Control Conference. St. Louis, MO, USA.
- Dec. 8, 2008, Tutorial Workshop on *Modeling, Estimation and Control in Neuroscience* Organized by Sridevi Sarma (MIT, USA), The 44th IEEE Conference on Decision and Control, Cancun, Mexico. (very gainful, techniques around Deep Brain Stimulation)
- May 19-20, 2004. 5th Annual Edison Conference and Innovation Showcase. University of Utah, SLC.
- May 3-6, 2004. “Road Scholar”. USU President Hall’s Road Scholars 2004 Tour. South East Utah.
- March 2003. NSF Junior Faculty Travel Grant for NSF Career Workshop at Tempe, Arizona.
- June 2003. Travel grant from NCAR (National Center for Atmospheric Research), Junior Faculty Forum, Boulder, CO. <http://www.asp.ucar.edu/ecsa/announce.html>

- ❑ June 2002, Course Design and Development Workshop. Office of Instructional Support, Utah State University.
- ❑ Dec. 2001, Tutorial Workshop on *Networked Autonomous and Semi-autonomous Vehicles*, The 40th IEEE Conference on Decision and Control, Hyatt Regency Grand Cypress Resort in Orlando, Florida. (Given by UC Berkeley PATH people, interesting talks)
- ❑ March 2000-July 2000, **DFSS** – Design for Six Sigma Green Belt Certification Training (80 hours), Seagate Technology International.

Grants

(\$425K+\$437K=\$862K external PI, \$330K external co-PI, \$504K internal PI. Total: \$1.69M).

(\$862K+\$285K=\$1.047M external PI, \$330K external co-PI, \$608K internal PI. Total: \$1.985M).

- NSF Junior Faculty Travel Grant for NSF Career Workshop at Tempe, Arizona. March 2003. \$700.
- Travel grant from NCAR (National Center for Atmospheric Research), Junior Faculty Forum. June 2003, Boulder, CO. <http://www.asp.ucar.edu/ecsa/announce.html> \$2,000.
- PI. NRC Twinning Grant \$16,000. (2003-2005)
- PI. USU NFRG \$10,100. (2003-2004)
- PI. SDL Skunkworks Research Initiative Fund. \$15,000. (2003-2004)
- PI. Private grant, \$3,000. (2003-2004)
- co-PI. NSF NUE (Nano Undergraduate Education) Grant, \$100,000. (2004-2006)
- co-PI. National Science Foundation Workshop grant \$16K (2004-2005). US - French Workshop on Fractional Derivatives and Their Applications (Award No.: 0425093)
- An industry contract, \$51K (2004)
- PI: USURF TCO Tech. Bridge Grant. \$13,910 (2005-2005)
- PI: CURI \$20,000. (2005-2006)
- PI. SDL Skunkworks Research Initiative Fund. \$17,000. biosensor (2005-2006)
- PI. SDL Skunkworks Research Initiative Fund. \$17,000. temperature uniformity (2005-2006)
- PI. DesignJug. \$12K. (2005)
- PI. NSF DDDAS/SEP. \$42K. (2006-2007)
- PI: NSF MAS-net REU site. \$229K (2006-2009)
- PI: NSF IREE grant. \$29K (2006-2007)
- PI: NSF SBIR grant subcontract from Wavelength Electronics; \$15K (2006)
- Co-PI: NIH R15 grant \$245K (2006-2009)
- PI: UWRL seed grant \$32.7K (2006-2007)
- PI: UWRL UAV project \$127K (2006-2007)
- PI: DOI “Water 2025” project \$60K (2007-2008) (with UWRL matching)
- PI: UWRL UAV Remote Sensing \$88K (2007-2008)
- PI: NASA Applied Information Systems Research Program AIST Award NNG06GE95G “*Adaptive Algorithms for Optimal Classification and Compression of Hyperspectral Images*” \$436.710K (2006-2010) (Note: PI transferred from Dr. Tamal Bose on July 2007)
- PI: UWRL UAV Remote Sensing \$104 K (2008-2009)
- PI: NSF MAS-net REU grant \$282K (2009-2012)
- PI: AUVSI Competition grant from EAFB \$6K (2009-2010)

Longer-term Visiting Scholars Hosted by me at CSOIS since 2002 (40)

- France (5): Christophe Tricaud, Theodore Ndaza, Nicolas Monégier; Thomas SAQUER; Corentin Chéron;
- Slovakia (2): Igor Podlubny, Tomas Skovranek
- China (21): Tengyun Zhao; Zhian Wang; Jinping Ni; Shengyuan Xu; Xia Zhao; Wen Chen; Yan Li; Bin Wang; Ying Luo; Yongshun Jin, Sheng Hu, Wei Sun, Yingtao Zhang, Chunyang

Wang, Hongguang Sun, Xiaona Song, Changpin Li, Dingyu Xue; Yu Shang, Dali Chen, Jinlu Han

- Germany (5): Fernando Buck; Florian Zwetti; Marc Baumann; Daniel Kaplanek; Norman Wildmann
- Finland (1): Sakari Kettunen
- Spain (3): Ángel Rodríguez Castaño; Concha Monje; Inés Tejado Balsera
- Poland (1): Dariusz Ucinski;
- Sweden (2): Kenneth Holmstrom; Fredrik Hellman

Graduate Theses On-Going:

- 4 Ph.D. dissertations (Haiyang Chao; Christophe Tricaud; Jinlu Han; Austin Jensen)
- 3 MS Plan-A theses (Dee Long; Joshua Adams; Calvin Coopmans)
- 1 MS Plan-B report (Abe Clemens – Sant Innovation Fellowship)

Graduate Theses Completed at Utah State University:

(Total 16: 2 Ph.D. dissertations, 11 MS Plan-A theses, 3 MS Plan-B reports; * female graduate students)

1. 2005. Pengyu Chen. “*Pattern Formation in Mobile Wireless Sensor Networks*”, Master of Science Thesis.
2. 2005. Zhongmin Wang. “*Distributed Control of Distributed Parameter Systems Using Mobile Actuator and Sensor Networks*”, Master of Science Thesis.
3. 2005. Jinsong Liang. “*Control of Linear Time-Invariant Disturbed Parameter Systems - From Integer Order To Fractional Order*”, Master of Science Thesis.
4. 2005. Yan Shi. “*An Electrochemical Chip Prototype Using Square Wave Polarography Voltammetry and a Survey on Wireless Power Transmission*”, Master of Science Plan-B Report.
5. **2006. Hyo-Sung Ahn. “*Robust and Adaptive Learning Control Design in the Iteration Domain*” Ph.D. Dissertation.**
6. 2006. Yashodhan Tarte. “*Detection, Identification, and Compensation of Nonlinearities and an Experimental Verification Platform for Nonlinear Controllers*”, Master of Science Thesis.
7. 2006. Kenton Fife. “*Vision-Based Road Detection and Tracking for an Autonomous Vehicle Platform*”, Master of Science Plan-B Report
8. **2007. Zhen Song. “*Optimal Observation Problems Involving Wireless Sensor Networks*” Ph.D. Dissertation.**
9. 2007. William K. Bourgeois. “*Engineering Swarms for Mobile Sensor Networks*”, Master of Science Thesis.
10. 2007. Rongtao Sun. “*Fractional Order Signal Processing: Techniques and Applications*”, Master of Science Thesis.
11. 2007. Tripti Bhaskaran*. “*Practical Tuning Method for Fractional Order Proportional and Integral Controllers*”, Master of Science Thesis.
12. 2008. Elizabeth Lee*. “*Monitoring of indoor relative humidity levels in residential dwellings: a sensor network application.*” Master of Science Plan-B Report.
13. 2008. Varsha Bhambhani*. “*Optimal Fractional Order Proportional and Integral Controller for Processes with Random Time Delays.*” Master of Science Thesis.
14. 2008. Shelley Rounds*. “*Distributed Control for Robotic Swarms Using Centroidal Voronoi Tessellations.*” Master of Science Thesis.
15. 2009. Austin Jensen. “*gRAID: A GEOSPATIAL REAL-TIME AERIAL IMAGE DISPLAY FOR A LOW-COST AUTONOMOUS MULTISPECTRAL REMOTE SENSING PLATFORM (AggieAir).*” Master of Science Thesis.
16. 2009. Shayok Mukhopadhyay. “*Fractional Order Modeling & Control: Development of Analog Strategies for Plasma Position Control of the STOR-1M Tokamak.*” Master of Science Thesis.

Workshops and Short Courses Offered/Organized:

1. Blas M. Vinagre and YangQuan Chen. 2002. "Lecture Notes for the Tutorial Workshop on Fractional Order Calculus in Control and Robotics at IEEE CDC2002 Las Vegas". Unpublished. Distributed at the IEEE CDC Tutorial Workshop. Las Vegas, Dec. 2002. (316 PDF pages)
2. 06/13/2003. "[Parsimonious ILC and RC: Seagate Experience](#)" (Tutorial Lecture) at the first [Iterative Learning Control](#) International Summer School at [Utah State University](#) (See other presentations and photos [here](#)) (half day)
3. YangQuan Chen. "Task-Oriented Mobile Actuator and Sensor Networks". IEEE/RSJ IROS2005 Full Day Tutorial Workshop slide set. August 2, 2005. Edmonton (with Hairong Qi and Kevin L. Moore) (A Full Day)
4. FOC Day @ USU, April 19, 2005. "Fractional Order Calculus Day at Utah State University". Full day workshop. http://mechatronics.ece.usu.edu/foc/event/FOC_Day@USU/
5. YangQuan Chen. Iterative Learning Control: from Academia to Industry – An expository tutorial. IEEE ICMA2005 Half Day Tutorial Workshop slide set, Niagara Falls, Canada, July 29, 2005. (with Hyosung Ahn and Kevin L. Moore) (Half day)
6. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Fractional Order Calculus and Its Applications in Mechatronic System Controls](#)" (Half day)
7. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Cooperative Control and Consensus Building for Multiple Autonomous Vehicles](#)" (Half day)
8. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Iterative Learning Control: Algebraic Analysis and Optimal Design](#)" (all slides are [here](#)) (Half day)
9. Dec. 2006. IEEE CDC2006, Industrial Tutorial Session on "Iterative learning control and repetitive control in hard disk drive industry". San Diego, California, USA (2 hours)
10. December 8, 2006. Friday 9AM-5PM. International Mini-Workshop on DDDAS (Dynamic Data Driven Application Systems) "Optimal measurement and control of distributed parameter systems using mobile actuator and sensor networks". <http://mechatronics.ece.usu.edu/mas-net/dddas/> Full day workshop.
11. FOC Day @ USU, Sept. 3, 2007. "Fractional Order Calculus Day at Utah State University". Full day workshop.
12. Tutorial Session "Applied Fractional Calculus in Controls", 2009 American Control Conference, June 10-12, 2009, St. Louis, Missouri, USA. <http://fractionalcalculus.googlepages.com/>
13. Pre-conference Workshop. "Applied Fractional Calculus in Controls and Signal Processing", 2009 American Control Conference, June 10-12, 2009, St. Louis, Missouri, USA. <http://fractionalcalculus.googlepages.com/> (cancelled, also by IEEE CDC2009)
14. FOC Day @ USU, April 24, 2009. "Fractional Order Calculus Day at Utah State University". Full day workshop. (Dr. Bruce J. West's visit, 3 seminars given).

Invited Seminar/Talks:

- June 1999. "An overview of iterative learning control research," Dept. of Electrical Engineering, Univ. of Alaska at Fairbanks;
- June 1999. "Aerodynamic drag curve identification: optimal dynamic fitting and iterative learning approaches," Dept. of Electrical Engineering, Univ. of Alaska at Fairbanks;
- April 2000. "Frictional force on the high precision servo control". First Seagate Singapore TEC Symposium, Singapore;
- July 2000. "Perspectives in Iterative Learning Control", 3rd Asian Control Conference, Shanghai, China.
- April 2001. "Fractional order calculus and its applications in systems control - an overview", Department of Electrical Engineering, Univ. of Alberta, Canada.

- May 2001. "Fractional order calculus and its applications in signal processing and systems control - an overview", Department of Electrical Engineering, Univ. of Calgary, Canada.
- June 14, 2001. "Iterative Learning Control": From Academia to Industry". Dept. of Electrical and Computer Engineering, The University of Windsor, Canada.
- June 14, 2001. "Fractional order calculus and its applications in systems control - an overview." Dept. of Electrical and Computer Engineering, The University of Windsor, Canada.
- 11/6/2003. USU Department of Mathematics [Colloquium](#): Fractional-order Calculus, Fractional-order Filter and Fractional-order Control: An Overview & Some Recent Developments. ([PDF slides](#))
- 06/13/2003. [Parsimonious ILC and RC: Seagate Experience](#) (Tutorial Lecture) at the first [Iterative Learning Control](#) International Summer School at [Utah State University](#) (See other presentations and photos [here](#))
- 06/17/2003. [Some Servo Patents for Low Cost High TPI Hard Disk Drives](#) [abstract/bio](#). The Colorado Center for Information Storage, the University of Colorado, Boulder
- 03/05/2003. USU [ECE6800](#) Seminar by [Dr YangQuan Chen](#) on FOC. Fractional order calculus, fractional order filter and fractional order control: an over view and some recent developments. Check [here](#) for PDF slides.
- 03/28/2003. Une proposition pour la synthèse de correcteurs PI d'ordre non entier. YangQuan Chen (Utah State University, USA), Concepción A. Monje, Blas M. Vinagre (Universidad de Extremadura, Espagne). (Slides [PDF](#)) [Action thématique "Les systèmes à dérivées non entières"](#) - [LAP](#) - [ENSEIRB](#), Bordeaux.
- 10/17/2003. Réalisation analogique de l'opérateur de dérivation non entière. C. Tricaud (ENSEIRB – Université Bordeaux 1) and YangQuan Chen (Utah State University, USA). (Slides [PDF](#)) [Action thématique "Les systèmes à dérivées non entières"](#) - [LAP](#) - [ENSEIRB](#), Bordeaux.
- May 19, 2004. The Innovation Showcase, [The Edison Conference](#), Univ. of Utah, SLC. ([Program.pdf](#), see Booth #44)
- 07/22/2004. "Fractional Future?" A Panel Discussion at the 2004 NSF Sponsored Joint US-France Workshop, Bordeaux, France.
- 08/17/2004. "Mobile actuator and sensor networks for diffusion boundary determination and zone control", Invited talk (75 minutes) at the Institute of Intelligent Machines of Chinese Academy of Sciences (IIM of CAS) in Hefei, the capital city of Anhui Province, China.
- 08/19/2004. "Iterative Learning Control: from Academia to Industry". Invited Seminar (75 minutes) at the Department of Automatic Control, Southeast University, Nanjing, the capital city of Jiangsu Province, China.
- 08/20/2004. "Fractional order control" (75 minutes) Invited Seminar at Institute of Robotics and Artificial Intelligence, Northeastern University, Shenyang, capital city of Liaoning Province, China.
- 2/25/05. ECE Dept. IAC meeting, presentation of "CSOIS: Past, Present, and Future cum MAS-net". Lab tour/Demo.
- 4/5/2005. [ECE6800](#) seminar. [Task Oriented Mobile Actuator and Sensor Networks \(TOMAS-net\)](#)
- 9/28/2005. Fractional Order Control. San Diego Section of IEEE Control Systems Society.
- 10/20/2005. About CSOIS. USU VPR and State of Utah UStar delegate.
- 11/4/2005. USU Dept. of Civil and Environmental Engineering, Transportation Research Seminar Series. "Task Oriented Mobile Actuator and Sensor Networks".
- March 14, 2006. "Non-Integer-Order Calculus, Dynamic Systems, Control and Signal Processing - An Introduction". The Engineering Division Seminar on Automation and

Sensing, Colorado School of Mines.

- March 16, 2006. "Interlaced Distributed Control and Distributed Measurement with Mobile Actuator/Sensor Networks (MAS-net): An example of DDDAS". The Center for Automation, Robotics, and Distributed Intelligence (CARDI), Colorado School of Mines.
- June 16, 2006. "HDD servo - All smart ideas tried?!", Seagate SHK Design Center. Minneapolis, MN. (During ACC2006)
- July 6, 2006. ""Interlaced Distributed Control and Distributed Measurement with Mobile Actuator/Sensor Networks (MAS-net): An example of DDDAS". Robotics Center, Beijing Institute of Technology, China.
- July 7, 2006. "Non-Integer-Order Calculus, Dynamic Systems, Control and Signal Processing - An Introduction". Dept. of Automatic Control, Beijing Institute of Technology, China.
- July 21, 2006. "Ubiquitous fractional order controls". IFAC FDA06 Plenary lecture. ([slides](#), [12 pages plenary article](#)) Porto, Portugal.
- May 2007. Special Invited Talks. "Fractional Order Calculus and Its Applications in Mechatronics and Power Electronics - An Introduction". The 2nd IEEE Conference on Industrial Electronics and Applications (ICIEA 2007) 23-25 May 2007, Shangri-la Hotel, Harbin, China. <http://iciea2007.cipsterdesign.com/>
- Fall 2007. USU ECE Colloquium. "An Overview of Fractional Order Signal Processing (FOSP) Techniques".
- March 2008. Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net)" Worcester Polytechnic Institute.
- March 2008. Invited Seminar. "Fractional Order Thinking at The Edge - from Mechatronics to Biomechatronics to Bioengineering." Computer Engineering Division, UC Santa Cruz.
- Sept. 2008. USU ECE Colloquium. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)".
- Nov. 2008. Plenary Lecture "Fractional Order Signal Processing - Techniques, Applications and Urgency" 3rd IFAC Workshop on Fractional Differentiation and its Applications, Ankara, Turkey, 05 - 07 November, 2008.
- Nov. 2008. Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)". ECE Dept. of University of New Orleans, New Orleans, Louisiana, USA.
- 2009: Jan. 13. ECE 6800 Graduate Colloquium. "Fractional Order Motion Controls and Fractional Order Networked Control Systems". Utah State University.
- 2009: March 13. UC Berkeley Invited Seminar. "Fractional order thinking: from mechatronics to biomechatronics and beyond".
- 2009: May 27. Semi-Plenary Speaker. The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009), Xi'an, China.
- 5/21/2009: Invited Seminar. "Towards fractional order thinking and engineering." Nantong University (NTU), Jiangsu Province, China.
- 5/21/2009: Invited Seminar. "Towards fractional order thinking and engineering." Hohai University (HHU), Nanjing, China. Part of the "Mini-symposium on Fractional Dynamics" Organized by Prof. Wen Chen.
- 5/22/2009: Invited Seminar. "Towards fractional order thinking and engineering." Nanjing Institute of Technology (NJIT), Nanjing, China.
- 5/22/2009: Invited Seminar. "Iterative Learning Control: A Tutorial and from Academia to Industry." Nanjing Institute of Technology (NJIT), Nanjing, China.
- 5/26/2009: Invited Seminar. "Towards fractional order thinking and engineering." Xi'an Technological University (XATU), Xi'an, China.
- 5/26/2009: Invited Seminar. "Fractional Order Signal Processing - Techniques, Applications and

- Urgency". Xidian University, Xi'an, China.
- 5/28/2009. Invited Seminar. "An Overview of USU Unmanned Aerial Vehicle Research Program". Northwestern Forest & Agriculture Univ. (NWF&AU), Yangling, Shaanxi Province, China.
 - 5/28/2009. Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)". Northwestern Forest & Agriculture Univ. (NWF&AU), Yangling, Shaanxi Province, China.
 - 6/1/2009: Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)". South China University of Technology (SCUT), Guangzhou, China.
 - 6/3/2009. Invited Seminar. "Iterative Learning Control: A Tutorial and What's Next." Beijing Jiao Tong University (BJTU), Beijing, China.
 - 6/21/2009. Invited Presentation. "YangQuan Chen, Ph.D." - King Abdullah University of Science and Technology (KAUST), Saudi Arabia.
 - 7/10/2009. Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)". UT Dallas Erik Jonsson School of Engineering and Computer Science.
<http://www.ee.utdallas.edu/events/chen.html>
 - 11/5/2009. Invited Seminar. "Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)". Dept. of Mechanical Engineering, University of Nevada Las Vegas.

Publications

(2000-2009): Please see <http://yangquan.chen.googlepages.com/> or (* indicates corresponding author, + student coauthor)

Theses: (3)

1. Yangquan Chen, "*High-order Iterative Learning Control: Convergence, Robustness and Applications*," **Ph.D. Dissertation**, December 1997. School of Electrical and Electronic Engineering, Nanyang Technological University (NTU), Singapore.
2. Yangquan Chen, "*Flying Vehicle Simulation Studies and Identification of Aerodynamic Coefficients From Range Test Data*," **Master of Engineering Thesis**, April 1988. Department of Automatic Control, Beijing Institute of Technology (BIT), Beijing, China.
3. Yangquan Chen, "*Special Purpose Microcomputer Hardware Design for Industrial Process Control*", **Bachelor of Engineering Thesis**. June 1985. Department of Automation, University of Science and Technology of Beijing (USTB), Beijing, China.

Monographs and Textbooks (11):

1. Concepción A. Monje, YangQuan Chen, Blas Vinagre, Dingyu Xue and Vicente Feliu (2010). "*Fractional Order Systems and Controls - Fundamentals and Applications.*" Advanced Industrial Control Series, Springer-Verlag (Invited book project, contracted, copyedit due Dec. 2009, ~375 pages)
2. Zheng Song, YangQuan Chen, Chellury Ram Sastry and Nazif Cihan Tas (2009). "*Optimal Observation for Cyber-Physical Systems: A Fisher Information Matrix Based Approach.*" Springer-Verlag, 2009. (ISBN: 978-1-84882-655-7, July 2009, 170 pages)
3. Dingyu Xue* and YangQuan Chen (2008). "*Solving Applied Mathematical Problems with MATLAB*". (ISBN : 978-1420082500) Chapman & Hall/CRC Press. Nov. 2008. (448 pages)
4. Dingyu Xue* and YangQuan Chen (2008). "*Solving Advanced Applied Mathematical Problems Using Matlab (2nd edition)*". (ISBN : 978-7302186182) Tsinghua University Press, Beijing, China, Oct. 2008. (442 pages in Chinese)
5. Hyo-Sung Ahn+, Kevin L. Moore*, and YangQuan Chen (2007). "*Iterative Learning Control: Robustness and Monotonic Convergence in the Iteration Domain*". Springer-Verlag,

- Communications and Control Engineering Series, 2007, [ISBN: 978-1-84628-846-3](#). (203 pages)
6. Dingyu Xue, YangQuan Chen* and Derek Atherton (2007). “*Linear Feedback Control – Analysis and Design with Matlab*”. SIAM Press, 2007, ISBN: 978-0-898716-38-2. (348 pages) (Book review in IEEE Control Systems Magazine, Jan. issue of 2009)
 7. Dingyu Xue* and YangQuan Chen (2007). “*Solving Control Related Mathematical Problems Using Matlab*”. (ISBN: 9787302152972) Tsinghua University Press, Beijing, China, 2007. (474 pages in Chinese, <http://www.china-pub.com/computers/common/info.asp?id=37025>)
 8. Dingyu Xue* and YangQuan Chen (2004). “*Solving Advanced Applied Mathematical Problems Using Matlab*”. (ISBN 7-302-09311-3/O.392) Tsinghua University Press, Beijing, China, August 2004. (419 pages in Chinese)
 9. Dingyu Xue* and YangQuan Chen (2002). “*System Simulation Techniques and Applications Based on MATLAB/Simulink*”. Tsinghua University Press. 2002. (ISBN7-302-05341-3/TP3137) (www.tup.tsinghua.edu.cn) (435 pages in Chinese)
 10. Yangquan Chen* and Changyun Wen (1999), “*Iterative Learning Control: Convergence, Robustness and Applications*,” Springer-Verlag, Lecture Notes Series on Control and Information Science, vol. LNCIS-248, 1999, 199 pages, ISBN: 1-85233-190-9.
 11. Yonggao Shi* and Yangquan Chen (1995), “*Plastic Belt for Projectiles*,” Science & Technology Press of Shanxi Province, 1995, in Chinese, 162 pages, ISBN 7-5369-2277-9.

Edited Books (2)

1. Blas M Vinagre* and YangQuan Chen (2002). “*Fractional Calculus Applications in Automatic Control and Robotics*”. **Lecture Notes Prepared for The Tutorial Workshop at the IEEE International Conference on Decision and Control (CDC)**, Dec. 9 2002, Las Vegas, USA. (316 PDF pages) <http://mechatronics.ece.usu.edu/foc/cdc02tw/cdrom/Lectures/book.pdf>.
2. Chen, XQ, Chen, YQ and Chase, JG (2009). “Mobile Robots: State of the Art in Land, Sea, Air, and Collaborative Missions,” **I-Tech Publishing**, Vienna, Austria, ISBN 978-3-902613-39-4.

Refereed Book Chapters and Book Chapter Papers: (22)

1. Christophe Tricaud+ and YangQuan Chen*. “*Data-Driven Parameter Estimation of Distributed Systems Using Networked Mobile Sensors*.” **DDAS book chapter**. Invited and Accepted. **Springer-Verlag**. Editor: Dr. Darema, Frederica [fdarema@nsf.gov]
2. Yan Li+* and YangQuan Chen. “*Stability analysis of fractional order universal adaptive stabilization*”. A chapter in “**New Trends in Nanotechnology and Fractional Calculus Applications**”, Springer, 2009. (to appear, proofread)
3. Ying Luo+, YangQuan Chen* and Hyo-Sung Ahn. “*Fractional Order Adaptive Control for Cogging Effect Compensation*” A chapter in “**New Trends in Nanotechnology and Fractional Calculus Applications**”, Springer, 2009. (to appear, proofread)
4. Christophe Tricaud+ and YangQuan Chen*. “*Optimal Real-Time Strategies for Estimation of Distributed Parameter Systems Using Networked Mobile Sensors and Actuators*” Chapter-10 of “**Mobile Robots: State of the Art in Land, Sea, Air, and Collaborative Missions**,” Edited by X.Q. Chen, Y.Q. Chen, and J.G. Chase, **I-Tech Publishing**, Vienna, Austria, ISBN 978-3-902613-39-4. (2009)
5. X.Q. Chen*, Y.Q. Chen, and J.G. Chase. “*Mobiles Robots – Past, Present and Future*”. Chapter-1 of “**Mobile Robots: State of the Art in Land, Sea, Air, and Collaborative Missions**,” Edited by X.Q. Chen, Y.Q. Chen, and J.G. Chase, **I-Tech Publishing**, Vienna, Austria, ISBN 978-3-902613-39-4. (2009)
6. YangQuan Chen.* “*Robustness of Networked Boundary Control of Damped Wave Equations*”, a Chapter in “*Networked Control Systems: Theory and Applications*”, Fei-Yue Wang and Derong Liu editors, Springer, pp. 261-274, ISBN: 1848002149, 2008.
7. Jinsong Liang+, Weiwei Zhang, YangQuan Chen*, Igor Podlubny. “*Robustness of Fractional Order Boundary Control of Time-Fractional Wave Equations with Delayed Boundary*

- Measurement Using the Smith Predictor*". In "Advances in Fractional Calculus: Theoretical Developments and Applications in Physics and Engineering." J. Sabatier, J. Machado and O. Agrawal Editors. Springer-Verlag. August 2007. ISBN: 978-1402060410. pages: 61-76. (552 pages in total)
8. Dingyu Xue, YangQuan Chen*. "Sub-Optimum H2 Pseudo-Rational Approximations to Fractional Order Linear Time Invariant Systems". In "Advances in Fractional Calculus: Theoretical Developments and Applications in Physics and Engineering." J. Sabatier, J. Machado and O. Agrawal Editors. Springer-Verlag. August 2007. ISBN: 978-1402060410. pages: 543-552. (552 pages in total)
 9. Jinsong Liang+, YangQuan Chen*, Blas M. Vinagre and Igor Podlubny. "Identifying Diffusion-Wave Constant, Fractional Order and Boundary Profile Of A Time-Fractional Diffusion-Wave Equation From Noisy Boundary Measurements". a chapter in "Fractional Derivatives an Their Applications. Part 3: Systems analysis, implementation and simulation, systems identification and control." Editors: A. Le Mehauté, J. A. Tenreiro Machado, J. C. Trigeassou and J. Sabatier. UBooks, Augsburg, Germany, 2005. pp. 517-532. ISBN 3-86608-026-3.
 10. YangQuan Chen*, Kevin L. Moore, Blas M. Vinagre and Igor Podlubny. "Robust PID Controller Autotuning with A Phase Shaper ". A chapter in "Fractional Derivatives an Their Applications . Part. 3: Systems analysis, implementation and simulation, systems identification and control." Editors: A. Le Mehauté, J. A. Tenreiro Machado, J. C. Trigeassou and J. Sabatier. UBooks, Augsburg, Germany, 2005. pp. 687-706. ISBN 3-86608-026-3.
 11. Jinsong Liang+, YangQuan Chen*, Blas M. Vinagre and Igor Podlubny. "Fractional Order Boundary Stabilization Of A Time-Fractional Wave Equation ". A chapter in "Fractional Derivatives an Their Applications . Part. 3: Systems analysis, implementation and simulation, systems identification and control." Editors: A. Le Mehauté, J. A. Tenreiro Machado, J. C. Trigeassou and J. Sabatier. UBooks , Augsburg, Germany, 2005. pp. 597-614. ISBN 3-86608-026-3.
 12. C. A. Monje, B. M. Vinagre*, Y.Q. Chen, V. Feliu, P. Lanusse and J. Sabatier. "Optimal tunings for fractional $PI^\lambda D^\mu$ ". A chapter in "Fractional Derivatives an Their Applications. Part. 3: Systems analysis, implementation and simulation, systems identification and control." Editors: A. Le Mehauté, J. A. Tenreiro Machado, J. C. Trigeassou and J. Sabatier. UBooks , Augsburg, Germany, 2005. pp. 675-686. ISBN 3-86608-026-3.
 13. Dingyu Xue and YangQuan Chen*. "Iterative Learning Control of Uncertain Discrete-time Nonlinear Feedback Systems With A Control Saturater". A chapter in "Intelligent Systems at the Service of Mankind", Volume 2, Editors: Wilfried Elmenreich, J. Tenreiro Machado, Imre J. Rudas. UBooks , Augsburg, Germany, 2005. ISBN 978-3866080522.
 14. J. Ignacio Suarez, Blas M. Vinagre*, José Eugenio Naranjo and YangQuan Chen. "Validation of the Model of an Unmanned Autonomous Vehicle Used in Path-Tracking Tasks". A chapter in "Intelligent Systems at the Service of Mankind", Volume 2, Editors: Wilfried Elmenreich, J. Tenreiro Machado, Imre J. Rudas. UBooks , Augsburg, Germany, 2005. ISBN 978-3866080522.
 15. Zhen Song+, Pranav Sukthankar+, YangQuan Chen*, Jason Gu. "Control of Two Coupled Inverted Penduli by Progressive Fuzzy Logic Fusion ". A chapter in "Intelligent Systems at the Service of Mankind", Volume 2, Editors: Wilfried Elmenreich, J. Tenreiro Machado, Imre J. Rudas. UBooks , Augsburg, Germany, 2005. ISBN 978-3866080522.
 16. Ivo Petr^a_v^s, YangQuan Chen* and Blas M. Vinagre. "Robust stability test for interval fractional order linear systems". Chapter 53, in Vincent D. Blondel and Alexander Megretski (Editors). "Unsolved problems in the mathematics of systems and control". Princeton University Press. Jul. 2004. Problem 6.5, Chapter 6, pp. 208-210. ISBN: 978-0-691-11748-5.
 17. J. I. Su^a_{rez}, B. M. Vinagre*, A. J. Calder^o_n, C. A. Monje and Y. Q. Chen. "Using Fractional Calculus for Lateral and Longitudinal Control of Autonomous Vehicles". Chapter in the Lecture Notes in Computer Science (LNCS). Springer Verlag. Vol.. 2809: Franz R. Pichler,

- Moreno-Diaz, R. et al. (Eds.) Part - Autonomous and Control System "Computer Aided Systems Theory- [EUROCAST 2003](#)". Feb. 2003. pp. 337-348. ISBN 978-3-540-20221-9.
18. YangQuan Chen* and Adam L. Schwartz. "RIOTS_95 -- a MATLAB Toolbox for Solving General Optimal Control Problems and Its Applications to Chemical Processes". Chapter in Rein Luus Editor, "Recent Developments in Optimization and Optimal Control in Chemical Engineering", Transworld Research Publishers. 2002. pp. 229-252. ISBN 81-7736-088-4.
 19. J.-X. Xu*, T. H. Lee and Yangquan Chen, "Knowledge learning techniques and applications in discrete time control systems," in vol. III, Chapter 30, pp. 943-976, C. T. Leondes, (ed.), "Knowledge Based Systems Techniques and Applications," Academic Press, 2000. ISBN: 978-0124438750.
 20. J.-X. Xu*, T. H. Lee, C. C. Hang and Yangquan Chen, "Developments in Learning Control Systems," M. M. Gupta and N. K. Sinha (ed.), "Soft Computing and Intelligent Systems: Theory and Practice," Chapter 10, pp. 217-253, IEEE Press, 1999. ISBN 978-0126464900.
 21. Huifang Dou, Zhaoying Zhou, Yangquan Chen*, Jian-Xin Xu and Jimmy J. Abbas, "Robust Control of Functional Neuromuscular Stimulation System by Discrete-time Iterative Learning," in Z. Bien and Jian-Xin Xu (ed.), "Iterative Learning Control - Analysis, Design, Integration and Applications," pp. 351-370, Kluwer Academic Press, 1998. ISBN: 978-0792382133.
 22. Yangquan Chen*, Jian-Xin Xu and Tong Heng Lee, "High-order Iterative Learning Control of Discrete-time Uncertain Nonlinear Systems Using Current Iteration Tracking Error," in Z. Bien and Jian-Xin Xu (ed.), "Iterative Learning Control - Analysis, Design, Integration and Applications," pp. 83-103, Kluwer Academic Press, 1998. ISBN: 978-0792382133.

Refereed Book Reviews (2)

1. YangQuan Chen* and Yi Zhang. Book review on "Computational Intelligence in Control Engineering", Robert E. King, Marcel Dekker Inc., NY, 1999, 295pp. *International Journal of Robust and Nonlinear Control*. Vol. 14, No. 12, pp. 1081-1083. August 2004.
2. Y. Q. Chen*, "Book Review: *Iterative Dynamic Programming* by Rein Luus", the book was published on January 27, 2000 by CRC Press, ISBN: 1584881488, Hardcover, 344 pages. *The International Journal of Robust and Nonlinear Control*, vol. 11. no. 14, pp.1397-1398, 2001.

Refereed Journal Papers (112 total: 87 in English, 25 in Chinese):

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50. "Tips for SP-ZAP Learning Gain Tuning on U6", 11 September 2000 (1 pages).
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52. "An Investigation of SP-ZAP improvement rate 1-sigma variations". 13 Sept. 2000. (3 pages)
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55. Memo on SP-ZAP table gain (TG). 20 Sept. 2000. (3pages)

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More references:

To: My Promotion and Tenure Committee
Via: Todd Moon, Dept. Head.
From: YangQuan Chen
RE: External P/T Reviewer List
Date: Sept. 1, 2007

In this file, I will list 8 external reviewers with an explanation on the nature of acquaintance and possible research areas that they can remark. When possible, I will include a short biography or resume for your information.

Summary list

- Prof. Richard L. Magin, Professor & Head, Dept. of Bioengineering, **Univ. of Illinois Chicago**. IEEE Fellow.
- Prof. Yu-Chi Ho, Gordon McKay Professor of Systems Engineering, Emeritus; T. Jefferson Coolidge Professor of Applied Mathematics, Emeritus; School of Engineering and Applied Sciences; **Harvard University**. IEEE Life Fellow. Member of National Academy of Engineering.
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- Gang Tao, Professor of Electrical Engineering, **Univ. of Virginia**, IEEE Fellow.