Jongeun Choi

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Education

Ph.D. in Mechanical Engineering, May 2006, University of California at Berkeley.
Committee: Professors Roberto Horowitz (Chair), Andrew Packard and David Brillinger.

M.S. in Mechanical Engineering, May 2002, University of California at Berkeley.

B.S. in Mechanical Design and Production Engineering, College of Engineering, 1998, Yonsei University at Seoul, South Korea.

Research Interests

Adaptive, distributed and robust control and statistical learning algorithms, with applications to mobile robotic sensors, environmental adaptive sampling, neuromusculoskeletal systems, energy efficient automotive systems, and biomedical problems.

Positions

Department of Mechanical Engineering, Michigan State University
Assistant Professor, August 2006-present.
Adjunct Professor, July 2006-August 2006.

Department of Electrical and Computer Engineering, Michigan State University
Assistant Professor, May 2008-present.

Department of Mechanical Engineering, University of California at Berkeley
Postdoctoral Researcher under Professor Roberto Horowitz, May 2006-June 2006.
Research Assistant under Professor Roberto Horowitz, 2003-2006.
Research Assistant under Professor Roberto Horowitz and Professor Arunava Majumdar, August 2000-2003.

Teaching Areas

Linear systems and control, nonlinear systems and control, stochastic control systems, adaptive control, random vibrations, parameter estimation, system identification, learning algorithms, and research-related graduate-level topics.

Teaching Experience

Michigan State University

- ME/ECE851 Linear Systems and Control, graduate course for ME and ECE students, Fall 2010.
- ME/ECE859 Nonlinear Systems and Control, graduate course ME and ECE students, Spring 2008, Spring 2010.
- ME451 Control Systems, undergraduate required course for ME students, Spring 2007, Fall 2008, Spring 2010, Spring 2011, Fall 2011, Spring 2012.
- ME481 ME Design Projects, undergraduate required course for ME students (one design team), Fall 2006, Spring 2009.
- ME490 Independent Study, undergraduate course (one ME student), Fall 2007.

University of California at Berkeley

- ME107B-Mechanical Engineering Laboratory, PID Control of a Drive Position Servo System Section, *Instructor (Graduate Student Instructor)*, Spring 2004-Fall 2005.
- ME232-Advanced Control Systems I, *Teaching Assistant*, Received the **highest scores from Pi Tau Sigma teaching assistant evaluations** among all teaching assistants for mechanical engineering graduate classes in Fall 2003.
- ME134-Automatic Control Systems, *Teaching Assistant*, Spring 2002.

Awards and Honors

- **Best Student Paper Award Finalist** (with Yunfei Xu, Ph.D. student) at the 2011 ASME Dynamic Systems and Control Conference (DSCC), October 31-November 2, 2011, Arlington, VA, USA.
- **Faculty Early Career Development Award (CAREER)**, the National Science Foundation, 2009.
- **Best Presentation in Session Award** at the 2008 American Control Conference, Seattle, June 11-13, 2008, Washington, USA.
- **IRGP New Faculty Award** at Michigan State University, 2006.
- **Best Student Paper Award Finalist** (with Roberto Horowitz) at the 2005 American Control Conference, June 8-10, 2005, Portland, Oregon, USA.
- Received the **highest scores from Pi Tau Sigma teaching assistant evaluations** among all teaching assistants for mechanical engineering graduate classes in Fall 2003, for ME232-Advanced Control Systems I, University of California at Berkeley.
- **Grant-In-Aid**, from Services for International Students and Scholars, University of California at Berkeley, 2003.
- **Dean's Best Honor Prize**, Yonsei Univ., Seoul, Korea, 2nd Semester 1996.
- **Dean's Best Honor Prize**, Yonsei Univ., Seoul, Korea, 1st Semester 1996.
- **Dean's Honor Prize**, Yonsei Univ., Seoul, Korea, 2nd Semester 1993.
- **Dean's Honor Prize**, Yonsei Univ., Seoul, Korea, 1st Semester 1993.

Awarded Funding

- National Institutes of Health (NIH), Supplement to "Systems Science Center for Musculoskeletal CAM Therapies," $351,650 (Dr. Choi's portion: $63,297), 9/1/2011-8/31/2012, PD/PI: Jacek Cholewicki, Co-PIs: N. Peter Reeves, *Jongeun Choi*, Clark J. Radcliffe, Lisa A. DeStefano, Jacob J. Rowan, Timothy J. Francisco, Pramod K. Pathak.
- National Science Foundation (NSF), CMMI, Control Systems Program, "Research Experiences for Teachers (RET) Supplement" to "CAREER: Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," $10,000, 8/31/2011-08/16/2012, Jongeun Choi (PI).
- National Institutes of Health (NIH), "Systems Science Center for Musculoskeletal CAM Therapies," $4,166,269 (Dr. Choi's portion: $541,610), 10/1/2010-8/31/2015, PD/PI: Jacek Cholewicki, Co-PIs: N. Peter Reeves, *Jongeun Choi*, Clark J. Radcliffe, Lawrence W. Mysliwiec, Lisa A. DeStefano, Jacob J. Rowan, Timothy J. Francisco, Pramod K. Pathak.
- National Science Foundation (NSF), CMMI, Control Systems Program, "Graduate Research Supplement" to "CAREER: Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," $41,000, 8/16/2010-08/15/2011, Jongeun Choi (PI).
- National Science Foundation (NSF), CBET, Thermal transport processes program, "Student Travel Support for 2010 Inverse Problems Symposium, June 6-8, at Michigan State University," $10,000 (Choi's portion: $2,500), Kirk Dolan (PI) and Jongeun Choi (Co-PI).
- National Science Foundation (NSF), CMMI, Control Systems Program, "Graduate Research Supplement" to "CAREER: Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," $39,729, 8/16/2009-8/15/2010, Jongeun Choi (PI).
- National Science Foundation (NSF), CMMI, Control Systems Program, "CAREER: Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," $400,000, 1/15/2009-12/31/2013, Jongeun Choi (PI).
- Michigan State University, Intramural Research Grant Program (IRGP) New Faculty Award (ranked first), "Cooperatively Learning Mobile Agents (CoLMAs) for Chemical Plume Tracing," $40,000, July 2007-December 2008, Jongeun Choi (PI).

Publications

Journal Papers

J26 Yunfei Xu, *Jongeun Choi*, Sarat Dass, and Tapabrata Maiti, "Efficient Bayesian Spatial Prediction with Mobile Sensor Networks Using Gaussian Markov Random Fields," submitted for publication.

J25 Mahdi Jadaliha, Yunfei Xu, *Jongeun Choi*, Nicholas S. Johnson and Weiming Li, "Gaussian process regression for sensor networks under localization uncertainty," submitted for publication.

J24 Mahdi Jadaliha and *Jongeun Choi*, "Environmental Monitoring using Autonomous Aquatic Robots: Sampling Algorithms and Experiments," submitted for publication.

J23 Nicholas S. Johnson, Azizah Muhammad, Henry Thompson, *Jongeun Choi* and Weiming Li, "Sea lampreys orient toward a source of a synthesized pheromone using odour-conditioned rheotaxis" submitted for publication.

J22 Yunfei Xu and *Jongeun Choi*, "Stochastic Adaptive Sampling for Mobile Sensor Networks using Kernel Regression," submitted for publication.

J21 *Jongeun Choi*, Joonho Lee, Yunfei Xu and Songhwai Oh, "Navigation Strategies for Swarm Intelligence using Spatio-Temporal Gaussian Processes," submitted for publication.

J20 Mahdi Jadaliha, Joonho Lee and *Jongeun Choi*, "Adaptive Control of Multi-Agent Systems for Finding Peaks of Unknown Fields," *Journal of Dynamic Systems, Measurement, and Control*, accepted for publication 2012.

J19 Yunfei Xu and *Jongeun Choi*, "Spatial Prediction with Mobile Sensor Networks Using Gaussian Processes with Built-in Gaussian Markov Random Fields," *Automatica*, accepted for publication, 2012.

J18 Yunfei Xu, *Jongeun Choi*, Sarat Dass and Taps Maiti, "Sequential Bayesian Prediction and Adaptive Sampling Algorithms for Mobile Sensor Networks," *IEEE Transactions on Automatic Control*, In print, 2011, DOI: 10.1109/TAC.2011.2179430.

J17 Andrew White, Zhen Ren, Guoming Zhu and *Jongeun Choi*, "Mixed $\mathcal{H}_2/\mathcal{H}_\infty$ Observer-Based LPV Control of a Hydraulic Engine Cam Phasing Actuator," *IEEE Transactions on Control Systems Technology*, In print, 2011.

J16 Yunfei Xu, *Jongeun Choi* and Songhwai Oh, "Mobile Sensor Network Navigation Using Gaussian Processes With Truncated Observations," *IEEE Transactions on Robotics*, Volume 27, Issue 6, December 2011, Pages 1118-1131, DOI: 10.1109/TRO.2011.2162766.

J15 Andrew White, *Jongeun Choi*, Ryozo Nagamune and Guoming Zhu, "Gain-Scheduling Control of Port-Fuel-Injection Processes," *Control Engineering Practice*, Volume 19, Issue 4, April 2011, Pages 380-394, DOI: 10.1016/j.conengprac.2010.12.007.

J14 Yunfei Xu and *Jongeun Choi*, "Adaptive Sampling for Learning Gaussian Processes using Mobile Sensor Networks," *Special Issue on Adaptive Sensing, Sensors*, 2011, Volume 11, Issue 3, March 2011, Pages 3051-3066, DOI:10.3390/s110303051.

J13 Andrew White, Jung-Wuk Hong, Soonsung Hong and *Jongeun Choi*, "Parameter Estimation for Wavelet Transformed Ultrasonic Signals," *NDT & E International*, Volume 44, Issue 1, January 2011, Pages 32-40, DOI: 10.1016/j.ndteint.2010.09.003.

J12 Andrew White, Guoming Zhu and *Jongeun Choi*, "Hardware-In-the-Loop Simulation of Robust Gain-Scheduling Control of Port-Fuel-Injection Processes," *IEEE Transactions on Control Systems Technology*, Volume 19, Number 6, November 2011, Pages 1433-1443, DOI: 10.1109/TCST.2010.2095420.

J11 *Jongeun Choi* and L. Guy Raguin, "Robust optimal design of diffusion-weighted magnetic resonance experiments for skin microcirculation," *Journal of Magnetic Resonance*, Volume 206, Issue 2, October 2010, Pages 246-254, DOI: 10.1016/j.jmr.2010.07.014.

J10 *Jongeun Choi* and Jung-Wuk Hong, "Characterization of Wavelet Coefficients for Ultrasonic Signals," *Journal of Applied Physics*, Volume 107, Issue 11, June 2010, Pages 114909-114909-6; DOI: 10.1063/1.3429087 (6 pages).

J9 Richard Conway, *Jongeun Choi*, Ryozo Nagamune and Roberto Horowitz, "Robust Track-Following Controller Design in Hard Disk Drives based on Parameter Dependent Lyapunov Functions," *IEEE Transactions on Magnetics*, Volume 46, Issue 4, April 2010, Pages 1060-1068, DOI: 10.1109/TMAG.2009.2037952.

J8 Yunfei Xu, *Jongeun Choi*, N. Peter Reeves and Jacek Cholewicki, "Optimal Control of the Spine System," *Journal of Biomechanical Engineering*, Volume 132, Issue 5, 25 March 2010, (10 pages) DOI: 10.1115/1.4000955.

J7 Ryozo Nagamune and *Jongeun Choi* "Parameter Reduction of Estimated Model Sets for Robust Control," *Journal of Dynamic Systems, Measurement, and Control*, Volume 132, Issue 2, March 2010, 021002 (10 pages), DOI: 10.1115/1.4000661.

J6 *Jongeun Choi* and Roberto Horowitz, "Learning Coverage Control of Mobile Sensing Agents in One-Dimensional Stochastic Environments," *IEEE Transactions on Automatic Control*, Volume 55, Issue 3, March 2010, Pages 804-809, DOI: 10.1109/TAC.2010.2040510.

J5 *Jongeun Choi*, Songhwai Oh and Roberto Horowitz, "Distributed Learning and Cooperative Control for Multi-Agent Systems", *Automatica*, Volume 45, Issue 12, December 2009, Pages 2802-2814, DOI: 10.1016/j.automatica.2009.09.025.

J4 Shahrokh Zeinali-Davarani, *Jongeun Choi* and Seungik Baek, "On Parameter Estimation for Biaxial Mechanical Behavior of Arteries," *Journal of Biomechanics*, Volume 42, Issue 4, Pages 524-530, 11 March 2009, DOI: 10.1016/j.jbiomech. 2008.11.022.

J3 *Jongeun Choi*, Ryozo Nagamune and Roberto Horowitz "Multiple Robust Track-Following Controller Design in Hard Disk Drives," in the Special Issue on Intelligent Control and Its Applications to Hard Disk Drives in the *International Journal of Adaptive Control and Signal Processing* 2008; Volume 22, Issue 4, Pages 359-373. Published online 22 August 2007 DOI: 10.1002/acs.994.

J2 Si-Hyung Lim, *Jongeun Choi*, Roberto Horowitz and Arunava Majumdar, "Design and Fabrication of a Novel Bimorph Micro-Opto-Mechanical Sensor," *Journal of Microelectromechanical Systems*, Volume 14, Issue 4, August 2005, Pages 683-690.

J1 *Jongeun Choi*, Joji Yamaguchi, Simon Morales, Roberto Horowitz, Yang Zhao and Arunava Majumdar, "Design and Control of a Thermal Stabilizing System for a MEMS Optomechanical Uncooled Infrared Imaging Camera," *Sensors and Actuators A-Physical*, Volume 104, Issue 2, 15 April 2003, Pages 132-42, DOI: 10.1016/S0924-4247(03)00004-9.

Conference Papers

C29 Yunfei Xu, *Jongeun Choi*, Sarat Dass and Taps Maiti, "Efficient Bayesian Spatial Prediction with Mobile Sensor Networks Using Gaussian Markov Random Fields," to appear in the Proceedings of American Control Conference (ACC), June 27 - 29, 2012 at Fairmont Queen Elizabeth in Montréal, Canada.

C28 Mahdi Jadaliha, Yunfei Xu and *Jongeun Choi*, "Gaussian process regression using Laplace approximations under localization uncertainty" to appear in the Proceedings of American Control Conference (ACC), June 27 - 29, 2012 at Fairmont Queen Elizabeth in Montréal, Canada.

C27 Andrew White, Zhen Ren, Guoming Zhu and *Jongeun Choi*, "Mixed $\mathcal{H}_2/\mathcal{H}_\infty$ Observer-based LPV control of a Hydraulic Engine Cam Phasing Actuator," in the Proceedings of ASME Dynamic Systems and Control Conference (DSCC), October 31-November 2, 2011, Arlington, VA.

C26 Yunfei Xu and *Jongeun Choi*, "Spatial Prediction with Mobile Sensor Networks using Gaussian Markov Random Fields," **(Best Student Paper Award Finalist)**, in the Proceedings of ASME Dynamic Systems and Control Conference (DSCC), October 31-November 2, 2011, Arlington, VA.

C25 Yunfei Xu, *Jongeun Choi*, Sarat Dass, Taps Maiti, "Bayesian Prediction and Adaptive Sampling Algorithms for Mobile Sensor Networks," in the Proceedings of American Control Conference (ACC), San Francisco, California, USA June 29-July 1, 2011.

C24 Andrew White, *Jongeun Choi* Guoming Zhu, "Dynamic Gain-Scheduling Controller Design for Port-Fuel-Injection Processes," in the Proceedings of American Control Conference (ACC), San Francisco, California, USA June 29-July 1, 2011.

C23 *Jongeun Choi*, "Coordination of Mobile Sensor Networks Using Gaussian Processes," NSF CMMI Research and Innovation conference, January 4-7, 2011, Atlanta, GA.

C22 Songhwai Oh, Yunfei Xu and *Jongeun Choi*, "Explorative Navigation of Mobile Sensor Networks Using Sparse Gaussian Processes," in the Proceedings of the 49th IEEE Conference on Decision and Control (CDC), December 15-17, 2010, Atlanta, GA, USA.

C21 Songhwai Oh and *Jongeun Choi*, "Distributed Learning in Mobile Sensor Networks Using Cross Validation," in the Proceedings of the 49th IEEE Conference on Decision and Control (CDC), December 15-17, 2010, Atlanta, GA, USA.

C20 Andrew White, Guoming Zhu and *Jongeun Choi*, "Hardware-In-the-Loop Simulation of Robust Gain-Scheduling Control of Port-Fuel-Injection Processes," in the Proceedings of 2010 ASME Dynamic Systems and Control Conference (DSCC), September 13-15, 2010, Cambridge, Massachusetts.

C19 Cody Priess, Clark Radcliffe and *Jongeun Choi*, "Application of Image Distortion Compensation to a Firearm Simulation Environment," in the Proceedings of 2010 ASME Dynamic Systems and Control Conference (DSCC), September 13-15, 2010, Cambridge, Massachusetts.

C18 Mahdi Jadaliha, Joonho Lee and *Jongeun Choi*, "Adaptive Control of Multi-Agent Systems for Finding Peaks of Unknown Fields," in the Proceedings of 2010 ASME Dynamic Systems and Control Conference (DSCC), September 13-15, 2010, Cambridge, Massachusetts.

C17 Yunfei Xu and *Jongeun Choi*, "Stochastic Adaptive Sampling for Mobile Sensor Networks using Kernel Regression," in the Proceedings of the American Control Conference (ACC), June 30-July 2, 2010, Baltimore, Maryland.

C16 Andrew White, *Jongeun Choi*, Ryozo Nagamune and Guoming Zhu, "Gain-Scheduling Control of Port-Fuel-Injection Processes," in the Proceedings of the American Control Conference (ACC), June 30-July 2, 2010, Baltimore, Maryland.

C15 Muhannad Quwaider, Azizah Muhammad, *Jongeun Choi* and Subir Biswas, "Posture-Predictive Power Control in Body Sensor Networks using Linear-Quadratic Gaussian Control," in the Proceedings of the First International Conference on Networks & Communications (NetCoM-2009), Le Royal Meridien, 27-29 December 2009, Chennai, India.

C14 Yunfei Xu and *Jongeun Choi*, "Optimal coordination of mobile sensor networks using Gaussian processes," in the Proceedings of 2009 ASME Dynamic Systems and Control Conference (DSCC), October 12-14, 2009 Hollywood, California.

C13 Yunfei Xu, *Jongeun Choi*, N. Peter Reeves and Jacek Cholewicki "Optimal Neuromuscular Control of Spine Systems," in the Proceedings of 2009 ASME Dynamic Systems and Control Conference (DSCC), October 12-14, 2009 Hollywood, California.

C12 Yunfei Xu and *Jongeun Choi*, "Mobile Sensor Networks for Learning Anisotropic Gaussian Processes," in the Proceedings of 2009 American Control Conference (ACC), St. Louis, Missouri, USA, June 10-12, 2009.

C11 *Jongeun Choi*, Joonho Lee and Songhwai Oh "Swarm Intelligence for Achieving the Global Maximum using Spatio-Temporal Gaussian Processes," **(Best Presentation in Session Award)** in the Proceedings of the American Control Conference (ACC), Seattle, Washington, USA, June 11-13, 2008.

C10 *Jongeun Choi*, Joonho Lee and Songhwai Oh, "Biologically inspired Navigation Strategies for Swarm Intelligence using Spatial Gaussian Processes," in the Invited Session: Sensing, Estimation, Consensus and Control Over Networks, in the Proceedings of the 17th International Federation of Automatic Control (IFAC) World Congress, Seoul, Korea, July 6-11, 2008.

C9 Ryozo Nagamune and *Jongeun Choi* "Parameter Reduction of Nonlinear Least-Squares Estimates via Nonconvex Optimization," in the Proceedings of the American Control Conference (ACC), Seattle, Washington, USA, June 11-13, 2008.

C8 Ryozo Nagamune and *Jongeun Choi* "Parameter Reduction of Nonlinear Least-Squares Estimates via Singular Value Decomposition," in the Proceedings of the 17th International Federation of Automatic Control (IFAC) World Congress, Seoul, Korea, July 6-11, 2008.

C7 *Jongeun Choi*, Songhwai Oh and Roberto Horowitz, "Cooperatively Learning Mobile Agents for Gradient Climbing," in the Proceedings of the 46th IEEE Conference on Decision and Control, New Orleans, Louisiana USA, December 12-14, 2007.

C6 *Jongeun Choi*, Ryozo Nagamune and Roberto Horowitz, "Multiple Robust Controllers Design based on Parameter Dependnent Lyapunov Functions," in the Proceedings of the 17th International Symposium on Mathematical Theory of Networks and Systems (MTNS), Kyoto, Japan, July 24-28, 2006.

C5 Leonardo Contreras, Richard Conway, Sarah Felix, *Jongeun Choi* and Roberto Horowitz, "An Objective Oriented Framework for the Synthesis of Robust Multi-rate Controllers for Hard Disk Drives (HDD)," in the Proceedings of the 10th World Multi-Conference on

Systemics, Cybernetics and Informatics (WMSCI) 2006, Orlando, Florida, July 16-19, 2006.

C4 *Jongeun Choi*, Ryozo Nagamune and Roberto Horowitz, "Synthesis of Multiple Robust Controllers for Parametric Uncertain LTI Systems," in the Proceedings of the 25th American Control Conference (ACC) June 14-16, 2006, Minneapolis, Minnesota, USA.

C3 *Jongeun Choi* and Roberto Horowitz, "Topology Preserving Neural Networks that Achieve a Prescribed Feature Map Probability Density Distribution," **(Best Student Paper Award Finalist)**, in the Proceedings of the 24th American Control Conference (ACC) June 8-10, 2005, Portland, Oregon, USA.

C2 Yang Zhao, *Jongeun Choi*, Roberto Horowitz, Arunava Majumdar, John Kitching and Paul Norton, "Characterization and Performance of Optomechanical Uncooled Infrared Imaging System," in the Proceedings of SPIE - the International Society for Optical Engineering, vol. 4820, 2003, pp. 164-74. USA.

C1 *Jongeun Choi*, Joji Yamaguchi, Simon Morales, Roberto Horowitz, Yang Zhao, Arunava Majumdar and Paul Norton, "Design and Control of a Thermal Stabilizing System for an Optomechanical Uncooled Infrared Imaging Camera," in the Proceedings of the 15th Triennial World Congress of the International Federation of Automatic Control, Barcelona, Spain, July 21-26, 2002.

Dissertations

Jongeun Choi, "Self-Organizing Algorithms for Controlling Network Feature Map Probability Distributions, and Synthesizing Multiple Robust Controllers" Ph.D. dissertation, University of California, Berkeley.

Jongeun Choi, "Design and Control of a Thermal Stabilizing System for an Optomechanical Uncooled Infrared Image Camera": research project, 2002, Master of Science thesis, Plan II, Holdings Engineering T7.49.2002 C465; University of California, Berkeley. Department of Mechanical Engineering Dissertations.

Book

Andrew White, Guoming Zhu and *Jongeun Choi*, a book proposal titled "Linear Parameter-Varying Control for Engineering Applications" has been accepted for SpringerBriefs, Springer, 2011.

Book Chapters

BC2 Gael Cordier, *Jongeun Choi* and Guy Raguin, "Evaluation of Three Inverse Problem Models to Quantify Skin Microcirculation Using Diffusion-Weighted MRI," Journal of physics: Conference Series, Volume 135, Number 1, 2008, DOI: 10.1088/1742-6596/135/1/012031.

BC1 SPIE: Milestone Series MS179 Selected Papers on Infrared Detectors: Developments, Editor(s): Antoni Rogalski Publication Date: November 2004; 790 pages; 86 papers; Hardcover. In print. Section Six: "Thermal Detector Focal Plane Arrays Other Thermal Detectors," pp. 644. "Characterization and Performance of Optomechanical Uncooled Infrared Imaging System," Yang Zhao, *Jongeun Choi*, Roberto Horowitz, Arun Majumdar, John Kitching, Paul Norton (in Infrared Technology and Applications XXVIII, B.F. Andresen, G.F. Fulop, M. Strojnik, editors, 2003).

Magazine Article

Jongeun Choi "Controls and Robotics Research at Michigan State University" (in Korean), *Magazine of the Institute of Control, Automation, and Systems Engineers*, Korea, vol. 13, no. 1, pp. 79-81, March, 2007, ISSN 1225-9853.

Patent and Disclosure

Si-Hyung Lim, *Jongeun Choi*, Roberto Horowitz, and Arunava Majumdar, "Bi-Material Cantilevers with Flipped over Material Sections and Structures Formed Therefrom," Non-Confidential Disclosure B03-061, 2003. The Office of Technology Licensing, University of California at Berkeley filed this disclosure (B03-061). U.S. Patent Application No. 11/255,669, filed on October 20, 2005.

Presentations

All conference proceeding papers listed previously were presented by the first (or leading) author.

- Invited Seminar Speaker, "Environmental Adaptive Sampling using Mobile Sensor Networks," Computer Science Engineering Lecture Series, Michigan State University, December 9, 2011.
- Invited Seminar Speaker, "Integrated Technology for Better Future," Yonsei University, Seoul, Republic of Korea, November 25, 2010.
- Andrew White (presenter), Jung-Wuk Hong and *Jongeun Choi*, "Parameter Estimation for Wavelet Transformed Ultrasonic Signals," in the 2010 Inverse Problems Symposium 2010 Michigan State University.
- Andrew White (presenter), *Jongeun Choi* and Guy Raguin, "Optimal Sensing Strategy Using Spatially Averaged Advection-Diffusion Parameter Estimation," in the 2009 Inverse Problems Symposium June 2, 2009 Michigan State University.
- Shahrokh Zeinali-Davarani (presenter), *Jongeun Choi* and Seungik Baek, "Parameter estimation of multi-fiber family models for biaxial mechanical behavior of arteries in the presence of the measurement errors," in the 2009 Inverse Problems Symposium June 2, 2009 Michigan State University.
- Invited Seminar Speaker, "Distributed Learning and Cooperative Control for Multi-Agent Systems," Korea Institute of Science and Technology (KIST), March 9, 2009.
- Invited Seminar Speaker, "Distributed Learning and Cooperative Control for Multi-Agent Systems," Control Seminar Series, University of Michigan, October 10, 2008.
- Invited Seminar Speaker, "Distributed Learning and Cooperative Control for Multi-Agent Systems," Yonsei University, Seoul, Republic of Korea, September 30, 2008.
- Invited Seminar Speaker, "Distributed Learning and Cooperative Control for Multi-Agent Systems," Mechanical/Aeronautical Engineering Western Michigan University, Kalamazoo, March 11, 2008.

Poster Presentations

- "Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," NSF CMMI Research and Innovation conference at Atlanta, GA, January 4-7, 2011.
- "Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences," NSF CMMI Research and Innovation Conference at Hawaii, June 22-25, 2009.

- Shahrokh Zeinali, Jongeun Choi, Seungik Baek, "Parameter estimation of mechanical behavior of the artery using a nonlinear least square method with a noise model," in the ASME Summer Bioengineering Conference, June 25-29, Marco Island, FL 2008.
- Emily Wandell, Nicholas Beechnau, William Smits, Seungik Baek, Jongeun Choi, Mark de Zee, Tamara Reid Bush, "Computer model analysis of cervical lateral function for symmetric and asymmetric/symptomatic subject groups," in World Congress on Neck Pain. January 20 - 22, 2008, Los Angeles, California.
- Jongeun Choi, Songhwai Oh and Roberto Horowitz, "Cooperatively Learning Mobile Agents for Gradient Climbing," in the 46th IEEE Conference on Decision and Control 2007.

Society Membership and Professional Activities

1. Professional membership
   - Member of the American Society of Mechanical Engineers (ASME).
   - Member of the Institute of Electrical and Electronics Engineers (IEEE).
   - Member of the Korean-American Scientists and Engineers Association (KSEA).
   - Member of the American Society for Engineering Education (ASEE), 2006-2008.
2. Editorship
   - Associate Editor for ASME Dynamics Systems and Control Conference, 2008-present.
   - Associate Editor for American Control Conference, 2009-present.
   - Editorial Board, Magazine of Institute of Control, Robotics and Systems (ICROS) (in Korean), 2007-2008.
3. Technical committees
   - Primary member of Mechatronics in ASME Dynamic System and Control Division (DSCD).
   - Model Identification and Intelligent Systems in ASME Dynamic System and Control Division (DSCD).
   - Robotics in ASME Dynamic System and Control Division (DSCD).
4. Conference chair, program committees, and invited sessions
   - Co-organizer (with Dr. Dejan Milutinović) of the invited session "Stochastic Models, Control and Algorithms in Robotics" in 2012 ASME Dynamic Systems and Controls Conference.
   - Program Committee member for the 12th International Conference on Control, Automation, Robotics and Vision (ICARCV), Guangzhou, China in December 2012.
   - International Program Committee (IPC) member for the 12th International Conference on Control, Automation and Systems (ICROS), October 17-21, 2012 at International Convention Center, Jeju Island, Korea.
   - Program Committee member for the 15th International Conference on Advanced Robotics (ICAR 2011), Tallinn, Estonia, June 20-23, 2011.
   - International Program Committee (IPC) member for the 8th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI), Incheon, South Korea, November 23-26, 2011.

- Co-chair of the Inverse Problems Symposium, Michigan State University, 2010.
- Co-chair of the Inverse Problems Symposium, Michigan State University, 2009.
- Co-organizer (with Dr. Manish Kumar) of the invited session "Swarm Robotics and Multi-Robot Control" supported by Robotics Technical Committee in 2010 ASME Dynamic Systems and Controls Conference.

5. Conference session chair/co-chair

- Co-chair of the session "Cooperative and Distributed Control" in ACC 2012.
- Co-chair of the session "Mechanical Systems/Robotics I" in ACC 2011.
- Co-chair of the session "Autonomous Systems" in DSCC 2009.
- Co-chair of the session "Mechanics" in the 2009 Inverse Problems Symposium.
- Co-chair of the session "System Identification" in ACC 2009.

Reviewers for governmental agencies

- Panelist, NSF Control Systems (CS) program, December 1-2, 2009.
- Panelist, NSF Control Systems (CS) program, December 19-20, 2011.

Reviewers for books

Pearson Education, 2010.

Reviewers for Journals and Control Conferences

Journals

1. Automatica.
2. Journal of Dynamic Systems, Measurement, and Control.
3. IEEE Transactions on Automatic Control.
4. International Journal of Robust and Nonlinear Control.
5. IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics.
6. IEEE Transactions on Control Systems Technology.
7. IEEE Transactions on Robotics.
8. Intelligent Service Robotics.
9. IEEE Transactions on Neural Networks.
10. International Journal of Adaptive Control and Signal Processing.
11. International Journal of Computational Methods.
12. Wireless Networks.
13. Sensors.

Conferences

1. ASME Dynamic Systems and Control Conference (DSCC).
2. American Control Conference (ACC).
3. IEEE Conference on Decision and Control (CDC).

4. International Federation of Automatic Control (IFAC) World Congress.
5. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2009.
6. The 23rd Canadian Congress of Applied Mechanics, 2011, Vancouver, BC, Canada.

Advising

Visiting scholars:

1. Professor Jeong-Oog Lee, Department of Aerospace Information Engineering, Konkuk University, Spring 2012-Spring 2013.

Postdoctoral advisees:

1. Dr. Yunfei Xu, Spring 2012-present.

Ph.D. student advisees:

1. Yunfei Xu, Ph.D. student, Fall 2007-Fall 2011.
2. Andrew White (Co-advising with Prof. George Zhu), Ph.D. student, Spring 2009-present.
3. Mahdi Jadaliha, Ph.D. student, Spring 2010-present.
4. Cody Priess, Ph.D. student, Summer 2010-present.

M.S. student advisees:

1. Ahsan Ijaz, M.S. student, Fall 2011-present.
2. Andrey Maslennikov, M.S. student, Spring 2011-present.
3. Azizah Muhammad, M.S. student, Fall 2008-Summer 2010.
4. Cody Priess, M.S. student, Fall 2008-Summer 2010.
5. William Lee Smits, M.S. degree, Fall 2007-Spring 2009.
6. Andrew White, M.S. degree, Spring 2007-Fall 2008.

Committees Membership

1. Byron Zambrano (Advisor: Dr. Baek/ME), Ph.D., ME,-.
2. Niannian Cai (Advisor: Dr. Joydeep Mitra/ECE), Ph.D., ECE,-.
3. Mohammed Ben-Idris (Advisor: Dr. Joydeep Mitra/ECE), Ph.D., ECE,-.
4. Nick Miller (Advisor: Dr. Steve Shaw/ME), Ph.D., ME,-.
5. Freddie Alequin-Ramos (Advisor: Dr. Xiaobo Tan/ECE), Ph.D., ECE,-.
6. Kazuko Fuchi (Advisor: Dr. Alejandro Diaz/ME), Ph.D., ME,-.
7. Rouhollah Jafari (Advisor: Dr. Ranjan Mukherjee/ME), Ph.D., ME,-.
8. Rachel Elias Bouserhal (Advisor: Dr. Hassan K. Khalil/ECE), M.S., ECE, Fall 2011.
9. Stephan Danial Pace (Advisor: Dr. Guoming Zhu/ME,ECE), Ph.D., ECE, Fall 2011.
10. Jinkyoung Park (Advisor: Dr. Guo-Wei Wei/Mathematics), Ph.D., Mathematics,-.
11. Shahid Nazrulla (Advisor: Dr. Hassan K. Khalil/ECE), Ph.D., ECE, Fall 2010.
12. Michael Balck (Advisor: Dr. Clark J. Radcliffe/ME), M.S., ME, Fall 2010.
13. Honnyong Cha (Advisor: Fang Peng/ECE), Ph.D., ECE, Fall 2009.
14. Lihua Chen (Advisor: Fang Peng/ECE), Ph.D., ECE, Spring 2008.

15. Greg J. Gartland (Advisor: Dr. Clark J. Radcliffe/ME), M.S., ME, 2007.

University/College/Department service

1. University committees
   - Strategic Partnership Grant (SPG) Program-Engineering and Materials Science, Review panel member, 2010.
2. Departmental committees
   - ME Lab Committee, Member, Fall 2011.
   - ME Seminar Coordinator, Fall 2011 - present.
   - ME Seminar Committee, Member, Fall 2006 - Summer 2009, Fall 2010, Spring 2011.
   - ME Seminar Committee, Chair, Fall 2009 - Spring 2010.
   - Graduate Studies Committee, Member, Fall 2009 - Spring 2011.
   - ME Global Engineering Concentration-Exchange Student Program for Korea University, Faculty coordinator, Fall 2008 - present.
3. Ad hoc committees/services
   - University Planning Discussion, Participant, Feb 2012.
   - Connector Faculty for engineering freshmen, Fall 2009, Fall 2011.
   - EGR 100 Curriculum Design Team, ME representative, 2010.