

February 2019

## **EDWIN ENGIN YAZ, Ph.D., P.E.**

Electrical and Computer Engineering, Haggerty 296, Marquette University, Milwaukee, WI 53201-1881  
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### **PROFESSIONAL INTERESTS:**

Modeling, analysis, estimation, and control of stochastic, nonlinear/chaotic, and uncertain systems and nonlinear and statistical signal processing. Over the years, applications have included: robotics, statistical process control, estimation and control of oil well drills, design of high-temperature superconducting tunable filters, chaotic communication and communication security, control networks, insulin pump control, modeling heart arrhythmia, modeling of Type-2 diabetes, intelligent transportation systems and traffic density estimation, power electronics control, electric machine diagnostics and prognostics, smart power grid synchronization, micro-cantilevers, battery management systems, resilience of cyber-physical systems and chemical sensing in liquid environments, among others. Pedagogical interests are: matching teaching with different learning styles and improving students' modeling, analysis and design skills.

### **PROFESSIONAL EXPERIENCE:**

Professor, Department of Electrical and Computer Engineering, Marquette University, Milwaukee, WI.

Professor and Chair, Department of Electrical and Computer Engineering, Marquette University, Milwaukee, WI, July 2001- July 2018.

University Professor, (on leave from) University of Arkansas, Fayetteville, AR, 2001-2002.

Professor of Electrical Engineering, University of Arkansas, Fayetteville, 1991- 2001.

Visiting Professor, Space Systems Control Laboratory, Purdue University, W. Lafayette, IN, January - August 1992.

Associate Professor of Electrical Engineering, University of Arkansas, Fayetteville, 1987 - 1991.

Assistant Professor of Electrical Engineering, University of Arkansas, Fayetteville, 1985 - 1987.

Postdoctoral Research Fellow, Coordinated Science Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL, Fall 1984.

Researcher, Applied Mathematics Division, Marmara Research Institute and the Research Institute for Basic Sciences, Turkey, 1982 - 1984.

Instructor in Electrical Engineering, Yildiz University, Kocaeli Faculty of Engineering, Turkey, 1979 - 1982.

Teaching/Research Assistant, Electrical Engineering Department, Bosphorus University, 1976 - 1979.

Electrical Engineer, Sun Electronics Co., Istanbul, Turkey, 1978.

Summer Engineering Intern, Kartaltepe Textile Factory, Istanbul, Turkey, 1974 and 1975.

### **HONORS AND AWARDS:**

2007 Sigma Xi, The Scientific Research Society, Marquette University / MCW / MSOE Chapter Distinguished Research Achievement Award.

Best Presentation Award in the Networks and Control Session at 2006 American Control Conference, Minneapolis, MN.

2001 IEE Coales Premium (Best Paper) Award for the paper "Stochastic Stability of the Continuous - Time Extended Kalman Filter" that appeared in IEE Control Theory and Applications in 2000.

2000/2001 University of Arkansas Electrical Engineering Department Outstanding Researcher Award.

Best Presentation Award in the Nonlinear Observers Session at 2001 American Control Conference, Arlington, VA.

1999 Eta Kappa Nu Electrical Engineering Outstanding Instructor Award.

1996/1997 Texas Instruments Award for Teaching Excellence in Electrical Engineering.

1996 Capitol Citation by the State of Arkansas "in honor of contributions made to the State and the citizens thereof."

1995/1996 University of Arkansas Alumni Association Faculty Distinguished Research Achievement Award (the highest research award given by the University).

1994/95 University of Arkansas Order of Omega Outstanding Faculty Award (voted by all fraternities and sororities on campus for teaching and mentoring excellence).

Best Presentation Award in the Discrete-Time Systems Session at 1994 American Control Conference, Baltimore, MD.

Best Presentation Award in the Robust Performance Session at 1993 American Control Conference, San Francisco, CA.

Elected to the grade of Senior Member by the Institute of Electrical and Electronics Engineers (1992).

Best Presentation Award in the Infinite Dimensional Systems Session at 1991 American Control Conference.

Best Presentation Award in the Optimization Session at 1991 American Control Conference, Boston, MA.

Halliburton Foundation Award for Research Excellence in Electrical Engineering (1991).

Arkansas Academy of Electrical Engineering Outstanding Faculty Award (1989).

Halliburton Foundation Award for Research Excellence in Electrical Engineering (1987).

Elected as Eminent Engineer to Tau Beta Pi, Engineering Honor Society (1987).

Arkansas Academy of Electrical Engineering Outstanding Faculty Award (1986).

Member of Sigma Xi, The Scientific Research Society, MU Chapter President: 2008-2009. Past President: 2009-2010. Currently serving as a Board Member.

Member of Eta Kappa Nu, Electrical Engineering Honor Society.

Member, Order of the Engineer.

Appeared in Dictionary of International Biography, Cambridge, U.K., Who's Who in the World, Who's Who in America, Who's Who in the South and Southwest in U.S., Who's Who in Turkey, American Men and Women of Science, Who's Who in Science and Engineering, Who's Who in American Education, Who's Who Among Young American Professionals, and Who's Who of Emerging Leaders in America.

#### **PROFESSIONAL PREPARATION:**

Completed semester-long Marquette Colleagues Ignatian Academic Leadership Program, December 2011.

Attended Ashoka University / Marquette University Faculty Institute: Using Social Innovation and Social Entrepreneurship as Tools for Impactful Teaching, Engaged Learning, and a Framework for Life, December 2010.

Leadership Certificate conferred by Marquette University, April 2005.

Management Certificate conferred by Marquette University based on completion of a 10-course sequence, June 2004.

Visiting Professor, Space Systems Control Laboratory, Purdue University, W. Lafayette, IN, January - August 1992.

Registered as a Professional Engineer in the State of Arkansas (by examination) since 1986.

Postdoctoral Research Fellow, Coordinated Science Laboratory, University of Illinois at Urbana-Champaign, Urbana, IL, Fall 1984.

Ph.D. (EE), Major Area: Control Systems, Minor Area: Applied Mathematics, Bosphorus (Bogazici) University\*, 1982. Dissertation Title: Stochastic Adaptive Receding Horizon Controllers.

M.S.E.E., Bosphorus University, 1979. Thesis Title: Unwanted Static Electrification: Modeling and Control.

B.S.in Electrical and Electronics Engineering, Bosphorus University, 1976. Senior Thesis: Power System Protection.

High School Degree, American Robert Academy for Boys, Istanbul, Turkey, 1972.

\*Bosphorus (Bogazici) University is the former American Robert College in Istanbul, Turkey and BS in Electrical and Electronics program is accredited by Engineering Accreditation Commission.

**THE AUTHOR, HIS STUDENTS AND HIS COLLABORATORS HAVE BENEFITTED FROM THE FOLLOWING FINANCIAL SOURCES: (with total financial support for the projects around \$8.1 Million)**

October 2018-September 2021, Graduate Assistance in Areas of National Need (GAANN) Program in Electrical Engineering, (Yaz PI, F. Josse and S. Schneider, co-PI) supported by US Department of Education

Jul 2016- June 2018, On-Site Screening of Wastewater and Freshwater for Micro-Pollutants Using a Sensor –Based Detection System, (with Prof. Josse as PI, Hristova, Tran, Yaz and Bender Co-PI) supported by Marquette University Innovation Grant

September 2012-August 2017, Graduate Assistance in Areas of National Need (GAANN): Smart Sensor Systems (Yaz PI, F. Josse and S. Schneider, co-PI) supported by US Department of Education

September 2010-August 2015, GOALI: Intelligent Systems for Health Condition Prognostics in AC Permanent Magnet and Induction Machine Drives for Highly Efficient and Renewable Energy Utilization and Generation (with Prof. N. Demerdash as PI, Yaz co-PI), supported by the US National Science Foundation

August 2010 - August 2012, Novel Protection Means for PM Machines in Wind Energy Generation and Hybrid-Electric Vehicle Applications (Prof. N. Demerdash as PI, Yaz co-PI) Wisconsin Energy Research Consortium

August 2005- July 2010, Claire Booth Luce Graduate Fellowships in EECE supported by Henry Luce Foundation (Yaz, PI)

September 2004-August 2009, Graduate Assistance in Areas of National Need (GAANN): Smart Sensor Systems (Yaz PI, F. Josse and S. Schneider as co-PI) supported by US Department of Education

March 2005-July 2008, Design Optimization of AEPS Components Using AI-EM Techniques, (with A. A. Arkadan as PI) supported by the Office of Naval Research

September 2003-September 2007, A Novel Approach to Fault Modeling, Diagnostics, and Prediction in Motor Drive Systems (R. Povinelli as PI, N. Demerdash and E. Yaz co-PI) supported by NSF and its REU supplements

August 2003-August 2005, Claire Booth Luce Graduate Fellowships in Mechatronics (with G.E.O. Widera) supported by Henry Luce Foundation

September 1999-September 2002, Exploratory Development of Materials, Assembly Processes, and Interconnects for All-HTS Tunable Filter Packaging (with L. Schaper, PI) supported by DARPA/DSO

May 1998-January 2002, Statistical Control of Processes Generating Time-Dependent Data, (with J. English as PI, T. Martin, and E. Elsayed) supported by US DOD, Army Research Office and together with matching by NSF

July 1998 - July 2000, A New Course Development on Enabling Technologies in ITS, supported by Mack-Blackwell National Transportation Center, U.S. Department of Transportation (Yaz, PI)

July 1997 - December 1998, Development of an Intelligent Transportation Systems Course, supported by Mack-Blackwell National Transportation Center, U.S. Department of Transportation (Yaz, PI)

December 1996 - January 1997, Output Feedback Control, supported by the United Nations under the TOKTEN program (Yaz, PI)

1994-1997, Nonlinear Modeling and Estimation of Harmonic Signals in Electric Power Systems, (with K. Olejniczak as PI, Yaz co-PI), supported by the National Science Foundation with REU supplements

May 1993, Nonlinear H-infinity Control and Estimation, supported by the United Nations under the TOKTEN program (Yaz, PI)

1992-1996, Design of a Multi-Purpose Advanced Static VAR Compensator to Improve the Performance of Distribution Systems, (with J. Balda as PI and K. Olejniczak and Yaz, co-PI) supported by Central and Southwest Services and Electric Power Research Institute (EPRI)

1992-1993, Disturbance Reduction via Fuzzy Logic Control (with T. Martin as PI, Yaz co-PI) supported by Arkansas Science and Technology Authority's Basic Research Grant Program

Summer Research Support by Space Systems Control Lab at Purdue University, 1992

1991-1993, Microcontroller Laboratory for Undergraduate Engineers, (with C. Goforth as PI, Yaz, co-PI), supported by the National Science Foundation

1990-1991, An Evaluation of Different Adaptive Control Design Methods for Vector-Controlled AC Drives, (with J. Balda as PI and E. Yaz and S. Ang, co-PI) supported by Arkansas Science and Technology Authority's Basic Research Grant Program

1986-1988, Moving Horizon Control and Its Application to Robotics, supported by Arkansas Science and Technology Authority's Basic Research Grant Program (Yaz, PI)

1984, NATO / Turkish Scientific and Technological Research Institute (TUBITAK) Postdoctoral Research Grant (Yaz, PI)

Several travel support grants from NSF to attend international conferences: 2002 IFAC World Congress, Barcelona, Spain; 2000 IEEE Conference on Decision and Control (CDC), Sydney, Australia; 1999 IFAC World Congress, Beijing, China; 1996 IEEE CDC, Kobe, Japan; 1993 IFAC World Congress, Sydney, Australia; 1991 IEEE CDC, Brighton, U.K; 1990 IFAC World Congress, Tallinn, Estonia.

## **RESEARCH DIRECTION\*:**

55. M.S. in EECE Thesis, Sensor Intrusion Detection in Control Systems Using Estimation Theory, Jiayi Su (co - advised with Dr. Susan Schneider) December 2018.
54. M.S. in EECE Thesis, Detection and Characterization of Actuator Attacks Using Kalman Filter Estimation, Yuqin Weng (co - advised with Dr. Susan Schneider) December 2018.
53. M.S. in EECE Thesis, State Estimation for Various Systems with Partially Unknown Dynamics, Abdulelah Alshareef, (co - advised with Dr. Susan Schneider) December 2018.
52. Ph.D. Dissertation, MU, Performance-Robust Dynamic Feedback Control of Lipschitz Nonlinear Systems, Winston Alexander Baker Jr. (co - advised with Dr. Susan Schneider) December 2016.
51. Ph.D. Dissertation, MU, Robust and Resilient Control Design and Performance Analysis for Uncertain Systems with Finite Energy Disturbances, Fan Feng, (co - advised with Dr. Susan Schneider) August 2016.
50. Ph.D. Dissertation, MU, Novel Convergence Results in Nonlinear Filtering, Jennifer Bonniwell, (co - advised with Dr. Susan Schneider) May 2016.
49. Ph.D. Dissertation, MU, Surface Acoustic Wave (SAW) - Based Gas Flow Sensor, Nisar Ahmad, (co - advised with Dr. Fabien Josse) May 2015.
48. Ph.D. Dissertation, MU, Finite Time Control and Estimation of Nonlinear Systems with Disturbance Attenuation, Mohammad N. ElBsat, August 2012.
47. M.S. in EECE Thesis, MU, Stability and Minimum Cost Analysis of a Discrete-Time Disturbance Accommodation Controller, Katrina H. Barhouse, (co - advised with Dr. Susan Schneider) December 2011.
46. Ph.D. Dissertation, MU, Nonlinear Control and Estimation with General Performance Criteria, Xin Wang, May 2011.
45. M.S. in EECE Thesis, MU, A Discrete Perspective: Observer Incorporated Neoclassical Controller Design, Winston Alexander Baker, Jr. (co - advised with Dr. Susan Schneider) August 2010.
44. M.S. in EECE Thesis, MU, Time-Optimal Control of Discrete-Time Systems with Known Waveform Disturbances, Jennifer L. Riffer (co-advised with Dr. Susan Schneider), August 2009.
43. M.S. in EECE Thesis, MU, Discrete-Time Robust and Resilient Controller Design Using Linear Matrix Inequalities, Fan Feng, August 2009.
42. M.S. in EECE Thesis, MU, A Neoclassical Approach: More Efficient Controller Design, Kathryn J. Holterman (co-advised with Dr. Susan Schneider), August 2008.
41. M.S. in EECE Thesis, MU, Improved Chaotic Communications Using Nonlinear Filtering Techniques, Xin Wang, August 2008.

40. Ph.D. Dissertation, MU, State Estimator Design for Chaotic Systems with Piecewise Linear or Polynomial Type Nonlinearities, Tongyan (Annie) Zhai, May 2008.
39. Ph.D. Dissertation, MU, New Approaches to State Estimation in Sensor Network Systems with Uncertain Sensor Measurements, Franck O. Hounkpevi, August 2007.
38. M.S. in EECE Thesis, MU, Modeling, Estimation and Control in Systems with Random Failure of Sensors and Actuators, Wenjing Zhang, August 2007.
37. Ph. D. Dissertation, MU, Resilient Nonlinear Observer Design via Linear Matrix Inequalities, Chung Seop Jeong, May 2007.
36. Ph. D. Dissertation, MU, State Estimation of Chaotic Stochastic Systems with Applications to Chaotic Communication, Huawei Ruan, August 2005.
35. Ph.D. Dissertation, UA, Resilient and Robust Design of Observers with General Criteria, Adil Bahakeem, December 2004.
34. M.S. in EECE Thesis, MU, Robustness Study and Further Extensions of Disturbance Accommodation Control, Barry D. Black, August 2004.
33. M.S. in EECE Thesis, MU, Contributions to Nonlinear-Estimation-Based Secure Chaotic Communications, Tongyan Zhai, August 2003.
32. M.S. in EECE Thesis, MU, Secure Communications with Chaotic Synchronization Using Nonlinear Estimators, Huawei Ruan, December 2002.
31. Ph.D. Dissertation, UA, Control System Design Via Linear Matrix Inequalities, Mosleh Alotaibi, May 2002.
30. M.S.E.E. Thesis, UA, Regional Pole-Placement for Controllers and Observers, Hasan Bokhari, May 2002.
29. M.S.E.E. Thesis, UA, Dissipative Design of Controllers and Observers, Chung Seop Jeong, May 2002.
28. Ph.D. Dissertation, UA, Extensions of Disturbance Minimization Control, Isaac Tshiofwe, August 2001.
27. Ph.D. Dissertation, UA, Nonlinear Observed-Based Synchronization of Chaotic Systems with Application to Secure Communications, Javid Amirazodi, August 2001.
26. Ph.D. Dissertation, UA, Disturbance Suppression Control in Oil Well Drill-Strings, Mosleh Al-Harthi, May 2001.
25. M.S.E.E. Thesis, UA, Methods in Configuring Neural Networks for Determining Corporate Bond Classification, Norris L. Larrymore, May 2001.
24. Ph.D. Dissertation, UA, Applications of Chaos Theory and Fractals to Cryptology, Juan C.C. Zecena, August 1999.

23. M.S.E.E. Thesis, UA, Performance Comparison of Various Linear State Estimators for Predicting Nonlinear Load Current Waveforms, Ishaya Hasan, August 1999.
22. Ph.D. Dissertation, UA, Linear and Nonlinear Modeling and Prediction of Harmonic Signals, Yuan Gao, May 1999.
21. M.S.E.E. Thesis, UA, Intelligent Transportation Systems, Sarah Hasan, May 1999.
20. M.S.E.E. Thesis, UA, Harmonic Signal Prediction Using Neural Networks, W. Liu, May 1998.
19. Ph.D. Dissertation, UA, Recursive State Estimation for Stochastic Nonlinear Models, M. Jamal Bari, December 1997.
18. Ph.D. Dissertation, UA, Linear Matrix Inequality Approach to Selected Problems in Analysis, Estimation, and Control of Discrete Time Systems, M. J. Mohseni, (co-directed with K. Olejniczak), December 1997.
17. M.S.E.E. Thesis, UA, Adaptive Approaches to Harmonic Filtering, X. Zhang, (Co-directed with K. Olejniczak), August 1997.
16. M.S.E.E. Thesis, UA, A Fractal Approach to Signal Prediction, Juan C. C. Zecena, May, 1997.
15. M.S.E.E. Thesis, UA, New Results in Stochastic Parameter State Estimation with Power System Applications, Ping Wu (co-directed with K. Olejniczak), May 1997.
14. M.S.E.E. Thesis, UA, A Kalman-Filter-Based Harmonic Estimator and Compensator, Abiy Zewde (co-directed with K. Olejniczak), May 1996.
13. Ph.D. Dissertation, UA, Control and Estimation of Uncertain Dynamic Systems Described by Difference Inclusions, Spyros Andreou, December, 1995.
12. M.S.E.E. Thesis, UA, Adaptive Prediction and Control of Harmonic Signals, Javid Amirazodi, December, 1995.
11. M.S.E.E. Thesis, UA, A Comparative Study of Various Approaches to Systems Control, Kevin B. Benefield, May 1994.
10. Ph.D. Dissertation, UA, Nonlinear State Estimation and Control Using Covariance Assignment, Wittawat NaNacara, December 1993.
9. M.S.E.E. Thesis, UA, Discrete-and Continuous-Time Covariance Assignment Estimation and Control, Benjamin L. Kaufman, Jr., May 1992.
8. Ph.D. Dissertation, UA, Nonlinear Stochastic Observers and Their Application to Control Systems, Asad Azemi, December 1991.
7. M.S.E.E. Thesis, UA, Stability Robustness Study of the Computed Torque Control Scheme for Robots, M. Larbi Rouis, May 1991.



6. M.S.E.E. Thesis, UA, Learning Controllers for Linear and Nonlinear Systems, Zia Siddiqui, May 1991.
5. M.S.E.E. Thesis, UA, Adaptive Estimation of Nonlinear Stochastic Systems, Preston Phillips, May 1990.
4. Ph.D. Dissertation, UA, Disturbance Reduction for Uncertain Dynamical Systems, Terry W. Martin, December 1989.
3. M.S.E.E. Thesis, UA, The Robust Design of Discrete-Time Control Systems, Xiaoru Niu, May 1988.
2. M.S.E.E. Thesis, UA, General Results in Optimal Control of Discrete-Time Nonlinear Stochastic Systems, Mark Ciancetta, August 1987.
1. M.S.E.E. Thesis, UA, The Feasibility of Linear Feedback Control Applied to Robot Manipulators, Randy Haler, May 1987.

In addition, he has directed the research work of postdoctoral associates Dr.s Asad Azemi, Juan C. C. Zecena, and Chung Seop Jeong. He has also served on numerous M.S. and Ph.D. Committees.

He has also directed the senior design projects of about 25 undergraduate students including 10 supported by NSF REU grants.

He is currently (co-) directing the research work of 2 Ph.D. and 2 M.S. students.

#### **COURSES TAUGHT AT MARQUETTE UNIVERSITY:**

Independent Study in EECE – Linear Matrix Inequalities in Systems Analysis Estimation and Control (EECE 6995-Graduate Course) Fall 2018  
 Stochastic Systems, Estimation, and Control, (EECE 6340 - Graduate Course) Spring 2018  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2017  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2016  
 Modern Control Theory (EECE 6310-Graduate Course) Spring 2016  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2015  
 Advanced Topics in Electrical and Computer Engineering (EECE 6932-Sensor Signal Processing\*\* - *Introduced to the Curriculum and Team Taught with Prof. F. Josse*) Spring 2015  
 Digital Control (EECE 4320-5320 Advanced Undergraduate-Graduate Course) Spring 2015  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2014  
 Advanced Topics in Electrical and Computer Engineering - Analysis, Estimation and Control of Nonlinear Dynamical Systems (EECE 6932-Graduate Course) Spring 2014  
 Independent Study in EECE – Properties of Regional Eigenvalue Placement Controllers (EECE 6995-Graduate Course) Fall 2013  
 Seminar in EECE (EECE 6953-Graduate Course) Fall 2013  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2013  
 Stochastic Systems, Estimation, and Control, (EECE 6340 - Graduate Course) Spring 2013  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2012  
 Advanced Topics in Electrical Engineering - Analysis, Estimation and Control of Nonlinear Dynamical Systems (EECE 6932-Graduate Course) Spring 2012.  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2011  
 Probability and Random Processes in Engineering (EECE 6020 - Graduate Course), Spring 2011

Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2010  
 Stochastic Systems, Estimation, and Control, (EECE 6340 - Graduate Course) Spring 2010\*\*  
 Advanced Engineering Mathematics (EECE 6010-Graduate Course) Fall 2009.  
 Advanced Topics in Computers and Control: Stochastic Systems, Estimation and Control, (EECE 229-Graduate Course) Spring 2009  
 Independent Study – Modeling and Parameter Estimation of a Micro-Electromechanical Sensor (EECE 295-Graduate Course), Fall 2008.  
 Special Topics in Electrical Engineering: Digital Control of Dynamic Systems (EECE 168- Advanced Undergraduate/Graduate Course), Summer 2008.  
 Advanced Topics in Electrical Engineering: Complex Dynamical Systems and Control (EECE 249–Graduate Course), Spring 2008.  
 Advanced Topics in Electrical Engineering: Stochastic Systems and Estimation (EECE 249–Graduate Course), Fall 2007.  
 Graduate Seminar: Chaotic Systems (EECE 396), Spring 2007.  
 Independent Study: Design of Robust State Estimators (EECE 295-Graduate Course), Spring 2007.  
 Graduate Seminar: Nonlinear Systems (EECE 396), Fall 2006.  
 Graduate Seminar: Stochastic Systems (EECE 396), Spring 2006.  
 Advanced Topics in Computer and Control: Estimation and Stochastic Control (EECE 229–Graduate Course), Spring 2005.  
 Independent Study: State Estimation for Stochastic Parameter Systems (EECE 295-Graduate Course), Spring 2005.  
 Advanced Topics in Computer and Control: Chaotic Systems and Signal Processing (EECE 229–Graduate Course), Fall 2004.  
 Probability and Random Processes in Engineering (EECE 206-Required Graduate Course), Spring 2004.  
 Independent Study: Effects of Delayed Information on State Feedback Performance (EECE 295-Graduate Course), Spring 2004.  
 Control Systems (EECE 150-Advanced Undergraduate/Graduate Course), Fall 2003.  
 Independent Study: Resilient Design of Nonlinear Observers (EECE 295- Graduate Course), Fall 2003.  
 Independent Study: Nonlinear Smoother Design (EECE 295- Graduate Course), Fall 2003.  
 Independent Study: Passive Observer Design (EECE 295- Graduate Course), Spring 2003.  
 Advanced Topics in Computer and Control: Estimation and Stochastic Control (EECE 229–Graduate Course), Fall 2002.  
 Independent Study: Passive Control and Estimation (EECE 295- Graduate Course), Fall 2002  
 Independent Study: Advanced System Theory (EECE 295- Graduate Course), Summer 2002  
 Topics in Computer and Control: Chaotic Systems and Signal Processing (EECE 151-Advanced Undergraduate/Graduate Course), Spring 2002

### **COURSES TAUGHT AT THE UNIVERSITY OF ARKANSAS:**

#### Undergraduate Courses:

Introduction to Electrical Engineering (ELEG 1003), Team-taught.  
 Electric Circuits II (ELEG 2113)  
 System Analysis\* (ELEG 3123)  
 System / Filter Design (Signal Processing) (ELEG 3133)  
 Electric Circuits and Machines (offered to non-EE engineering students) (ELEG 3903)  
 Control Systems\* (ELEG/CSCE 4403)  
 Special Problems (ELEG 388V and 488V) involving software development for chaotic system analysis, control design, signal modeling and digital signal processing.

#### Graduate Courses:

Systems Theory\* (ELEG 5403)

Stochastic Control Systems\* (ELEG 5413)  
Optimal Control Systems\* (ELEG 5423)  
Digital Control Systems\* (ELEG 5433)  
Nonlinear Systems Analysis and Control\*\* (ELEG/MATH 5443)  
Adaptive Filtering and Control\*\* (ELEG 5453)  
Chaotic Dynamical Systems\*\* (ELEG 5463)  
Intelligent Transportation Systems\*\* (ELEG 5473)  
Special Topics (ELEG 587V):  
Stochastic Modeling and Prediction with Applications to Electric Power Systems  
Special Problems (ELEG 588V) involving signal analysis, digital signal processing, robustness studies and state space averaging analysis of switching converters.  
Advanced Control System Topics (642V): Advanced Applied Linear Algebra, Stochastic Adaptive Control and Advanced Nonlinear Systems

\*Completely restructured by the author.

\*\*Introduced to the curriculum by the author.

### **COURSES TAUGHT AT BOSPHORUS AND YILDIZ UNIVERSITIES IN TURKEY:**

Fundamentals of Electrical Engineering Lab  
Electric Circuits I  
Electric Circuits II  
Electric Circuits Lab  
Measurement Lab  
Electric Machinery Lab  
Control Systems  
Control Systems Lab  
Control System Components

### **MEMBERSHIP OF AND SERVICE TO PROFESSIONAL SOCIETIES:**

#### **Memberships:**

Registered as a Professional Engineer in the State of Arkansas (by examination)  
Senior Member of the Institute of Electrical and Electronics Engineers (IEEE)  
IEEE Society Memberships: Control Systems, Circuits and Systems, Education and Signal Processing  
American Society of Engineering Education  
Turkish Chamber of Electrical Engineers

#### **Editorial Boards:**

Editor-in-Chief, Open Automation and Control Systems Journal, 2008-2015.  
Associate Editor-at-Large, IEEE Transactions on Automatic Control, 2004-2009.  
Associate Editor, IEEE Control Systems Society Conferences, 1994-present.  
Associate Editor, IEEE Transactions on Automatic Control, 1994-1998.  
Associate Editor, International Journal of Sensors, Wireless Communications and Control, 2010-present.  
Associate Editor, Numerical Algebra, Control and Optimization, 2010-present.  
Associate Editor, Innovative Computing, Information & Control Express Letters, 2007-present.  
Associate Editor, The Journal of the Franklin Institute, 2007-present.  
Associate Editor, Open Electrical and Electronic Engineering Journal, 2007-present.  
Associate Editor, Open Automation and Control Systems Journal, 2007-2008.  
Associate Editor, International Journal of Innovative Computing, Information & Control, 2004-present.

Associate Editor for Control Systems, IASTED (Int. Assoc. of Science and Technology for Development), 2001-present.

### **Conference Activities:**

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2017

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2016

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2015

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2014

Member of the International Program Committee for the 3RD IASTED Asian Conference on Modeling, Identification and Control, Phuket Thailand, April 2013

Member of the International Program Committee for the 3RD IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2013

Member of the International Program Committee for the IASTED Int. Conf. on Control Applications, Crete Greece, June 2012

Chaired a session at 2011 IFAC World Congress, Milan August-September 2011

Member of the International Program Committee for the IASTED International Conference on Modeling, Simulation, and Identification, Pittsburgh, USA, November 2011

Member of the International Program Committee for the Sixth IASTED International Conference on Computational Intelligence and Bioinformatics, Pittsburgh, USA November 2011

Member of the International Program Committee for the IASTED Int. Conf. on Intelligent Systems and Control, Cambridge, UK July 2011

Member of the International Program Committee for the IASTED Int. Conf. on Control Applications, Vancouver Canada, June 2011

Member of the International Program Committee for the IASTED Int. Conf. on Modeling, Identification and Control, Innsbruck, Austria, February 2011

Chaired and co-chaired sessions at the 2010 IEEE Int. Conf. on Decision and Control, Atlanta, GA December 2010

Member of the International Program Committee for the IASTED Int. Conf. on Computational Intelligence, Maui HI August 2010

Member of the International Program Committee for the IASTED Int. Conf. on Circuits and Systems, Maui HI August 2010

Chaired a session at 2010 IASTED International Conference on Circuits and Systems, Maui HI, August 2010

Chaired a session at 2010 American Control Conference, Baltimore, Maryland, June 2010

Member of the International Program Committee for the IASTED Int. Conf. Control, Diagnostics, and Automation, Novosibirsk, Russia, June 2010

Treasurer, IEEE Conference on Electromagnetic Field Computation, Chicago, IL May 2010

Member of the International Program Committee for the 29th IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2010

Chaired a session at the IASTED Int. Conf. on Identification Control and Applications, Honolulu, HI

August 2009

Member of the International Program Committee, Fourth International Conference on Innovative Computing, Information and Control, Kaohsiung, Taiwan, December, 2009

Member of the International Program Committee for the IASTED International Conference on Intelligent Systems and Control, Cambridge, Massachusetts, November 2009

Member of the International Program Committee for the IASTED International Conference on Computational Intelligence, Honolulu, Hawaii, August 2009

Member of the International Program Committee for the IASTED International Conference on Identification, Control and Applications, Honolulu, Hawaii, August 2009

Member of the International Program Committee for the IASTED International Conference on Control and Applications, Cambridge, United Kingdom, July 2009

Member of the Organizing Committee, Wisconsin Renewable Energy Summit, Milwaukee, WI, March 25-28, 2009

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2009

Member of the International Program Committee, IASTED International Conference on Intelligent Systems and Control, Orlando, USA November 2008

General Chair, Proceedings Editor and a Session Chair, IASTED International Conference on Circuits and Systems, Kailua-Kona, USA, August 2008

Chaired and co-chaired sessions at the 2008 IFAC World Congress in Seoul, Korea, July 2008

Member of the Planning Committee, 2009 Wisconsin Renewal Energy Summit, Milwaukee WI, March 2009.

Member of the International Program Committee, Third International Conference on Innovative Computing, Information and Control, June 2008, Dalian China

Member of the International Program Committee for the IASTED International Conference on Control and Applications, Quebec, Canada, May 2008

Member of the International Program Committee for the IASTED International Conference on Modeling, Identification and Control, Innsbruck, Austria, February 2008

Member of the International Program Committee for the IASTED International Conference on Intelligent Systems and Control, Cambridge, USA, November 2007

Member of the International Program Committee for the Second Int. Conf. on Innovative Computing Information and Control, Kumamoto, Japan, September 2007

Co-chaired a session at 2006 IEEE International Conference on Control Applications, Munich, Germany

Member of the International Program Committee for the IASTED International Conference on Circuits, Signals and Systems, Banff, Canada, July 2007

Member of the International Program Committee for the IASTED International Conference on Control and Applications, Montreal, Canada, May 30 - June 1, 2007

Member of the International Program Committee for the 26th IASTED Int. Conf. on Modeling, Identification, and Control, Innsbruck, Austria, February 2007

Member of the International Program Committee for the IASTED International Conference on Circuits, Signals and Systems, San Francisco, CA November 2006

Member of the International Program Committee for the IASTED International Conference on Intelligent Systems and Control Honolulu, HI, August 2006

Member of the International Program Committee for the IASTED International Conference on Computational Intelligence 2006, Calgary, Canada, July 2006

Member of the International Program Committee for the IASTED International Conference on Control and Applications, Montreal, Canada, May 2006

Co-chaired a session at 2005 American Control Conference, Portland, OR  
Member of the International Program Committee for the IASTED Int. Conf. on Modeling, Identification, and Control, Lanzarote, Spain, February 2006  
Chaired a session at 2004 IEEE Conference on Decision and Control, Bahamas  
Member of the International Program Committee for the Joint IEEE Conference on Decision and Control and the European Control Conference, Seville, Spain, December 2005  
Member of the International Program Committee for the International Conference on Intelligent Systems and Control, Cambridge, MA, October 31- November 2, 2005  
Member of the International Program Committee for the IASTED International Conference on Circuits, Signals and Systems, Marina Del Rey, October 24-26, 2005  
Member of the International Program Committee for the IASTED International Conference on Computational Intelligence, Calgary, Canada, July 4-6, 2005  
Member of the International Program Committee for the IASTED International Conference on Power and Energy Systems, Benalmadena, Spain, June 15-17, 2005  
Member of the International Program Committee for the IASTED International Conference on Control and Applications, Cancun, Mexico, May 18-20, 2005  
Member of the International Program Committee for the IASTED Int. Conf. on Circuits, Signals and Systems, Clearwater FL, November 28-December 1, 2004  
Member of the International Program Committee for the IEEE Conference on Decision and Control, Bahamas, December 2004  
Member of the International Program Committee for the IASTED Int. Conf. on Intelligent Systems and Control, Honolulu, Hawaii, August 2004  
Chaired a session at the 2004 American Control Conference  
Member of the International Program Committee for the IASTED International Conference on Control and Applications, Marina Del Rey, CA, March 1-3 2004  
Member of the International Program Committee for the 3rd IASTED Int. Conf. on Circuits, Signals and Systems, Cancun, Mexico, May 2003  
Chaired two sessions at the 2003 IEEE Int. Conference on Control Applications  
Chaired two sessions at the 2003 American Control Conference  
Chaired a session at 2002 IEEE Int. Conf. on Control Applications  
Chaired and Co-chaired three sessions at 2001 IEEE Conf. on Decision and Control  
Chaired and Co-chaired three sessions at 2001 American Control Conference  
Chaired two sessions at 2000 IEEE Conference on Decision and Control  
Chaired a session at 2000 World Automation Conference  
Chaired a session at 1999 IEEE Conference on Decision and Control  
Chaired a session at 1999 IEEE Conference on Control Applications  
Chaired a session at the 1998 IEEE Conference on Decision and Control  
Chaired two sessions at the 1998 IEEE Conference on Control Applications  
Chaired a session at the 1998 American Control Conference  
Chaired two sessions at the 1997 Conference on Decision and Control  
Chaired two sessions at 1997 American Control Conference  
Chaired a session at 1996 Conference on Decision and Control  
Chaired a session at 1996 IFAC World Congress  
Co-chaired two sessions at 1995 IEEE Decision and Control Conference  
Co-chaired two sessions at 1995 American Control Conference  
Chaired a session at 1994 IEEE Decision and Control Conference  
Co-chaired a session at 1994 IFAC Symposium on Robust Control Design

Served on the 1994 IEEE Decision and Control Conference Editorial Board  
Co-chaired three sessions at the 1994 American Control Conference  
Served on the Program Committee of 1993 American Control Conference and chaired a session.  
Chaired two sessions at 1992 American Control Conference  
Organized a special session for 1991 American Control Conference and co-chaired it  
Organized a special session for 1990 American Control Conference and co-chaired it  
Chaired a session at Midwest Symposium on Circuits and Systems in 1986  
Chaired a session at Midwest Symposium on Circuits and Systems in 1985  
Chaired a session at 1983 Turkish Automatic Control Symposium

**Refereed Research Proposals for:**

U.S. National Science Foundation  
Australian Research Council  
International Science Foundation  
U.S. Army Research Office  
U.S. Civilian Research and Development Foundation  
King Fahd University of Petroleum and Minerals, Dhahran – Saudi Arabia  
State of Missouri Research Assistance Program  
Marquette University

**Acted as a Reviewer for:**

Zentralblatt für Mathematik (Berlin, Germany), 1986-present  
Mathematical Reviews (Ann Arbor, MI), 1986-present  
IEEE Transactions on Automatic Control  
SIAM Journal on Control and Optimization  
IEEE Transactions on Control Systems Technology  
IEEE Transactions on Signal Processing  
IEEE Signal Processing Letters  
IEE Proceedings, Vision, Image and Signal Processing  
IEICE Transactions  
ASME Journal of Dynamic Systems Measurement, and Control  
International Journal of Control  
International Journal of Systems Science  
European Journal of Control  
Asian Journal of Control  
Automatica  
Applied Mathematics Letters  
IEE Proc. on Control Theory and Applications  
IEE Proc. On Vision, Image and Signal Processing  
Dynamics and Control  
Journal of Optimization Theory and Applications  
Journal of the Franklin Institute  
Optimal Control Applications and Methods  
Journal of Guidance, Control, and Dynamics  
Control: Theory and Advanced Technology  
Systems and Control Letters  
IEEE Transactions on Circuits and Systems

IEEE Transactions on Systems, Man and Cybernetics  
IEEE Transactions on Neural Networks  
IEEE Control Systems Magazine  
International Journal of Circuit Theory and Applications  
International Journal of Adaptive Control and Signal Processing  
International Journal of Engineering Science  
International Journal for Computers and their Applications  
Institute of Industrial Engineers Transactions  
Digital Signal Processing  
Computers and Electrical Engineering  
IMA Journal of Control and Information  
Mathematics of Control, Signals, and Systems  
Mathematical and Computer Modeling  
International Journal of Robust and Nonlinear Control  
Journal of Applied Mechanics  
Mechatronics  
Mechanics Research Communications  
Arabian Journal for Science and Engineering  
Electronics Letters  
IEEE Control and Decision Conferences (since 1985)  
American Control Conferences (since 1986)  
IECON 2007  
ICICIC 2007  
UKACC 2000  
ICARCV 2000  
International Conference on Differential Equations (1989)  
European Control Conferences  
IFAC Symposium on Robust Control (1994)  
Frontiers in Education Conference (2002)  
ASEE Annual Conferences

**Other Professional Service:**

Served as the Marquette University Representative on the Operating Committee of CRES (Center for Renewable Energy Systems), a collaborative center of UW Madison, UW Milwaukee, Marquette University and Milwaukee School of Engineering.

Served as the Marquette University representative on the Research Committee of MWERC – Midwest Energy Research Consortium - a partnership of institutions of higher education and industry to support research, workforce training and outreach in areas of energy, power and controls. Served as the Chair of the Research Committee 2011-2012.

IEEE international committee to evaluate Senior Member applications.

**SERVICE TO COMMUNITY:**

Served on the Advisory Board of and as a judge at Milwaukee Regional Science and Engineering Fairs. The mission of this fair is “to motivate Milwaukee area students to apply creativity and critical thought to



the solution of problems in STEM (science, technology, engineering and math) fields and enter institutions of higher learning with the skills necessary to graduate with qualifications to win high-paying jobs in the Milwaukee area.”

Served on the Advisory Board of the Milwaukee Career Academy, whose mission is to prepare students for college with future careers in the STEM fields.

### **SERVICE TO UNIVERSITY:**

#### **University Level:**

Member, Committee on University Honors, 2011-2014.

Member, Marquette University Mission Week Steering Committee, 2005-2010.

Member, Marquette University Task Force on Export Control, 2008.

Member, Marquette University Committee on Research, 2007.

Member, Marquette University Strategic Planning Council, 2005-2006.

Member, Faculty Interview Committee to hire a Director for the Marquette University Faber Center for Ignatian Spirituality, 2006.

Member, Marquette University Strategic Technology Advisory Council, 2003-2005.

Member, Selection Committee for the University of Arkansas Baum Teaching and Alumni Teaching/Research/Service Awards, 2000 - 2001.

Member, Campus Faculty Senate Nomination and Election Committee, 1998-2001.

Faculty Advisor, University of Arkansas Rock Climbing Club, August 1996 - 2001.

Faculty Advisor, University of Arkansas Turkish Cultural Club, 1994 - 2001.

Member, Campus Student Relations Committee, 1997 - 2000.

Member, Campus Council 1997/1998.

Member, Campus Faculty Senate, 1996-1998, Member of the Executive Committee, 1997/1998.

Member, Campus Faculty Panel, Complaint Procedures for Undergraduate Students, 1996/1997.

Member, University Ad hoc Committee on Administrative Organization, 1995 - 1996.

Member, University Faculty Grievance Panel, 1993-1996.

Member, University International Programs and Services Committee, 1993-1996 (during which he wrote three articles that appeared in the newsletter Interacts and also helped to clarify and rewrite the mission of this committee).

Faculty Advisor, Pakistan Cultural Club, 1986/1987.

### **College Level:**

Member, College of Engineering Space Allocation Committee, 2018.

Faculty Co-advisor to the Marquette University Solar Boat Race Team, August 2002-2006.

Member, MU College of Engineering Ad hoc Committee on Physics, 2001-2003.

Member, University of Arkansas College of Engineering Scholarship Committee 1998-2001.

Member, U of A, Ad hoc Committee to Initiate a Cognitive Science Program, 2000 - 2001.

Member, College of Engineering Tenure and Promotion Committee, 1993-1996.

Member, College of Engineering Service Courses Committee, 1989-1992.

### **Department Level:**

Chair, MU EECE Departmental Goals Committee, 2001-2018.

Chair, MU Dr. Russell J. Niederjohn Academic Excellence Scholarship Award Committee, 2001-2018.

Chair, MU Department of EECE Tenure and Promotion Committee, 2001-2018.

Chair, GAANN Fellowship Advisory Committee, 2004-present, Member 2001-2004.

Faculty Advisor to U of A Chapter of Eta Kappa Nu, Electrical Engineering Honor Society, January 1995 – August 2001. The chapter won the 1996 National Certificate of Merit and 2000 Honorable Mention for its activities. In 1996, six and in 2000, five out of more than 200 chapters worldwide received awards.

Member, U of A EE Energy Processing and Control Committee, 1999- 2001.

Member, EE Department Undergraduate Curriculum Committee, 1986/87, 1992/93, Chair, 1993/94.

Member, EE Department Graduate Committee\*, 1987-90, 1996-97, 1998-2001. Also prepared departmental Ph.D. written qualifier questions numerous times.

Member, Departmental Ad hoc Committee for Improving Faculty Evaluation Procedures, 1989-1993. This work resulted in a written report (submitted to the Department Head, the Dean of Engineering, and the Vice Chancellor for Academic Affairs) that detailed means to improve faculty hiring / development / evaluation procedures in the areas of teaching, research, and service.

Chair, Departmental Promotion and Tenure Committee, 1990 and 1997, Member, 1988-2001.

Chair, Faculty Search Committee, 1989.

\* Group I (full) graduate faculty at U of A, 1986-2001.

### **INVITED PRESENTATIONS:**

33. The Intersection of Spirituality with Scholarly Research, Justice and Marquette Faculty Research in Action Series, November 2013.

32. An Unintended Expedition in Unfamiliar Territory: One Thing Led to Another, Marquette University Faculty Research Autobiographies Series, October 2010.

31. iTeach, iResearch and iServe: Unity of Faith and Reason, presented at Marquette University Faculty Commons during the Mission Week, February 2009.

30. Opportunities Ahead of us in ECE Education, University of North Carolina, Charlotte, NC, September 2008.

29. A Journey in Electrical Engineering Education, University of Arkansas, Fayetteville, AR, May 2007.

28. Some Computational Challenges in Systems Analysis and Control, Seminar on Scientific Computing, Marquette University, Milwaukee, WI, July 2006.

27. From Teaching, Research, and Service to Learning, Discovery, and Engagement, Marquette University, Milwaukee WI, April 2001.

26. Race for Excellence in Scholarship, University of Toledo, Toledo OH, April 2001.

25. A Reduced Order Stochastic Observer Approach to an Analog Filtering Problem, Third International Conference on Applied Mathematics and Engineering Science, Casablanca, Morocco, October 2000.

24. A Sampler of Challenges and Opportunities in Dynamic Systems Research, University of Nebraska, Lincoln, February 2000.

23. Using GUI Capabilities of MATLAB in Advanced Electrical Engineering Courses, (with A. Azemi) IEEE Conf. on Decision and Control, Phoenix AZ, December 1999.

22. The Art of Departmental Leadership, Wright State University, Dayton, OH, March 1999.

21. Things Stochastic and Otherwise - Past, Present, and Future, Michigan Technological University, Houghton, MI, March 1999.

20. Proactivity in Electrical and Computer Engineering Education, University of Kansas, Lawrence, KS, January 1999.
19. Actuator Fault Detection and Isolation in Nonlinear Systems Using LMIs and LMEs, American Control Conference, Philadelphia, PA, June, 1998.
18. The Use of LMIs in Various Problems of Estimation and Control, Clarkson University, Potsdam, NY, 1998.
17. Pushing the Limits of Our Controllable Subspace: A Case Study in Engineering Education, University of Texas at Arlington, Arlington, TX, April 1998.
16. Stochastic Parameter Signal Prediction Using LMIs, Stevens Institute of Technology, Hoboken, NJ, March 1998.
15. Estimation of Harmonic Signals Using Linear Matrix Inequality Formulation, Oklahoma State University, Stillwater, OK, April, 1997.
14. Harmonic Signal Prediction, University of Alabama, Tuscaloosa, AL, April 1997.
13. Static Output Feedback Stabilization by Matrix Inequalities, Marmara Research Center, Gebze / Kocaeli, Turkey, December 1996.
12. On Some LMI Problems Arising in Nonlinear Stochastic Control, 33rd Annual Allerton Conf. on Communication, Control, and Computing, Monticello, IL, September 1995.
11. Observer Design for Discrete-Time Stochastic Parameter Systems, University of Houston, 1995.
10. Nonlinear Estimation by Covariance Assignment, IFAC World Congress Sydney, Australia 1993.
9. Multi-objective Control Design via Linear Matrix Equations, IFAC World Congress, Sydney, Australia 1993.
8. Parameterization of all Linear Compensators for Discrete-Time Stochastic - Bilinear Systems, IFAC World Congress, Sydney, Australia 1993.
7. Nonlinear Estimation with Applications to Target Tracking, Marmara Research Center, Gebze / Kocaeli, Turkey, May 1993.
6. Control of Nonlinear Systems with Robust Stability and Disturbance Accommodation, Marmara Research Center, Gebze/Kocaeli, Turkey, May 1993.
5. State Covariance Assignment for Discrete-Time Systems with Jump-Markov Parameters, European Control Conference, Grenoble, France, 1991.
4. Minimax State Estimation for Jump-Parameter Discrete-Time Systems with Multiplicative Noise of Uncertain Covariance, American Control Conference, Boston, MA, 1991.

3. Deterministic and Stochastic Robustness of the Computed Torque Scheme, American Control Conference, San Diego, CA, 1990.
2. Stabilizing Control of Stochastic Parameter Discrete Systems, University of Arkansas, Fayetteville, AR 1984.
1. Adventures in Random-Land, University of Illinois at Urbana Champaign, Urbana, IL, 1984.

## **PUBLISHED WORK:**

### **Published Book Reviews\***

19. O. L. V. Costa, M. D. Fragoso, M. G. Todorov, Continuous-Time Markov Jump Linear Systems, Springer-Verlag, Berlin 2013 (reviewed for Mathematical Reviews).
18. A. Saberi, A. A. Stoorvogel, and P. Sannuti, Filtering Theory, with Applications to Fault Detection, Isolation, and Estimation, Birkhauser, Boston, 2007 (reviewed for Mathematical Reviews).
17. O. L. V. Costa, M. D. Fragoso, R. P. Marques, Discrete-Time Markov Jump Linear Systems, Springer-Verlag, London, 2005 (reviewed for Mathematical Reviews).
16. O. E. Barndorff-Nielsen, D. R. Cox, and C. Kluppelberg (Ed.s), Complex Stochastic Systems, Chapman & Hall/CRC, Boca Raton, 2001 (reviewed for Mathematical Reviews).
15. C. D. Rahn, Mechatronic Control of Distributed Noise and Vibration, A Lyapunov Approach, Springer Verlag, Berlin, 2001 (reviewed for Mathematical Reviews).
14. J. B. Burl, Linear Optimal Control, H<sub>2</sub> and H-Infinity Methods, Addison Wesley Longman Inc., 1999 (reviewed for Int. J. of Robust and Nonlinear Control).
13. W. J. H. Stortelder, Parameter Estimation in Nonlinear Dynamic Systems, CWI, Amsterdam, 1998 (reviewed for Mathematical Reviews).
12. S. V. Emelyanov, I. A. Burovoi, F. Yu. Levada, Control of Indefinite Nonlinear Dynamic Systems, Springer Verlag, London, 1998 (reviewed for Mathematical Reviews).
11. A. B. Piunovskiy, Optimal Control of Random Sequences in Problems with Constraints, Kluwer Academic Publishers, 1997 (reviewed for Zentralblatt fur Mathematik).
10. M. M. Seron, J. H. Braslavsky, and G. C. Goodwin, Fundamental Limitations in Filtering and Control, Springer-Verlag: Berlin, 1997 (reviewed for Zentralblatt fur Mathematik).
9. Z. Aganovic and Z. Gajic, Linear Optimal Control of Bilinear Systems, Springer Verlag: Berlin, 1995 (Reviewed for Zentralblatt fur Mathematik).

8. S. Boyd, L. El Ghaoui, E. Ferron, and V. Balakrishnan, Linear Matrix Inequalities in System and Control Theory, SIAM: Philadelphia, PA, 1994 (Reviewed for IEEE Trans. on Automatic Control and the review also appeared in Proc. of IEEE).
7. T. Söderström, Discrete-Time Stochastic Systems, Prentice-Hall (UK), 1994 (Reviewed for Zentralblatt fur Mathematik).
6. J. A. Borrie, Stochastic Systems for Engineers, Prentice-Hall: New York, 1992 (Reviewed for Zentralblatt fur Mathematik).
5. G. Wunsch and H. Schreiber, Stochastische Systeme, Springer-Verlag: Berlin, 1992 (Reviewed for Zentralblatt fur Mathematik).
4. C. K. Chui and G. Chen, Kalman Filtering, Springer-Verlag: Berlin, 1987 (Reviewed for Zentralblatt fur Mathematik).
3. T. Van de Vegte, Feedback Control Systems, Prentice Hall: Englewood Cliffs, 1986 (Reviewed for IEEE Circuits and Devices Magazine).
2. T. Johnson, Process Dynamics, Estimation and Control, Peter Peregrinus: London, 1985 (Reviewed for Zentralblatt fur Mathematik).
1. W. Otter, Dynamic Feature-Space Modelling, Filtering and Self-Tuning Control of Stochastic Systems, Springer-Verlag: Berlin, 1985 (Reviewed for Zentralblatt fur Mathematik).

\* In addition to the above published book reviews, the author has reviewed numerous book proposals for various publishers.

### **Invited Book Chapters**

Chapter 5, Fuzzy Control of Nonlinear Control Systems with General Performance Criteria, X. Wang, E. E. Yaz, J. Long, and T. Miller, Intech at <http://dx.doi.org/10.5772/48298>, 2012.

Contributing Author to Circuits and Systems Section, Comprehensive Dictionary of Electrical Engineering, P. Laplante: Editor-in-Chief, CRC Press LLC, FL, 1999.

Robust Stability of Discrete-Time Randomly Perturbed Systems, Control and Dynamical Systems (ed. C. T. Leondes), Volume on "Digital Design and Control System Techniques and Applications" (vol. 73), pp. 89-120, Academic Press, San Diego, CA, 1995.

Observer Design for Discrete-Time Stochastic Parameter Systems, Control and Dynamical Systems (ed. C. T. Leondes), Volume on "Digital Design and Control System Techniques and Applications", (Vol. 73), pp. 121-158, Academic Press, San Diego, CA, 1995.

### **Technical Report**

Intelligent Transportation Systems (with S. Hasan), US Department of Transportation, MBTC, FR- 9011, 106 pages, May 15 1999.

**Refereed and Invited Journal and Proceedings Papers (These publications have received 3,950 citations to date according to Google Scholar)**

**2018**

358. "Field Oriented Sliding Mode Control of Surface-Mounted Permanent Magnet AC Motors: Theory and Applications to Electrified Vehicles" (with X. Wang and M. A. Reitz) IEEE Transactions on Vehicular Technology Vol. 67, pp. 10343 – 10356, 2018.

357. "Obtaining Chemical Selectivity from a Single, Non-Selective Sensing Film: Two-Stage Adaptive Estimation Scheme with Multiparameter Measurement to Quantify Mixture Components and Interferents" (with K. Sothivelr, F. Bender, F. Josse, and A. Ricco) American Chemical Society Sensors Journal, Vol. 3 (9), pp. 1656–1665, 2018.

356. "Coupled State-Dependent Riccati Equation Control for Continuous Time Nonlinear Mechatronics Systems" (with X. Wang and S. Schneider) ASME Journal of Dynamic Systems, Measurement and Control, Vol. 140(11), pp. 111013-111013-10 (10 pages), 2018.

355. "Detection and Quantification of Multi-Analyte Mixtures Using a Single Sensor and Multi-Stage Data-Weighted RLSE" (with K. Sothivelr, F. Bender, F. Josse, and A. Ricco) Proc. of IEEE Int. Frequency Controls Symposium, Olympic Valley, CA 2018.

354. "Dissipative Resilient Observer" (with S. Fadali) Proc. of the 2018 American Control Conference, Milwaukee, WI, pp. 6584-6589, 2018.

353. "Coupled State-Dependent Riccati Equation Control for Continuous Time Nonlinear Mechatronics Systems" (with X. Wang and S. C. Schneider) Proc. of the 2018 American Control Conference, Milwaukee, WI pp. 2102-2107, 2018.

352. "Stator Resistance Estimation Using Adaptive Estimation via a Bank of Kalman Filters" (with Alia Strandt, Andrew Strandt, Susan C. Schneider) Proc. of the 2018 American Control Conference, Milwaukee, WI, pp. 1078-1083, 2018.

**2017**

351. " $H_2$ - $H_\infty$  control of discrete-time nonlinear systems using the state-dependent Riccati equation approach" (with X. Wang, S. C. Schneider & Y. I. Yaz) J. of Systems Science & Control Engineering, Vol. 5, <http://dx.doi.org/10.1080/21642583.2017.1310635>, 2017.

350. " $H_2$ - $H_\infty$  control of continuous-time nonlinear systems using the state-dependent Riccati equation approach" (with X. Wang, S. C. Schneider & Y. I. Yaz) J. of Systems Science & Control Engineering, Vol. 5, <http://dx.doi.org/10.1080/21642583.2017.1310636>, 2017.

349. "Performance Resilience Analysis of Dynamic Feedback Controllers for both Multiplicative and Additive Gain Perturbations" (with F. Feng and S. C. Schneider) Proceedings of 2017 IFAC World Congress, Toulouse, France, pp. 395-400, 2017.

348. “Finite-Time Mean-Square Boundedness,  $H_2$ , and  $H_\infty$  Properties of the Discrete-Time Extended Kalman Filter for Systems with Independent Sensor Failures” (with J. L. Bonniwell and S. C. Schneider) Proc. of the 2017 American Control Conference, Seattle, WA, pp. 5774-5779, 2017.

## **2016**

347. “Online Chemical Sensors Signal Processing Using Estimation Theory: Quantification of Binary Mixtures of Organic Compounds in the Presence of Linear Baseline Drift and Outliers”, (with Sothivelr, K., Bender, F., Josse, F., Ricco, A. J. and Mohler, R. E.) IEEE Sensors Journal, vol. 16, pp.750-761, 2016.

346. “Detection and Quantification of Aromatic Hydrocarbon Compounds in Water Using SH-SAW Sensors and Estimation-Theory-Based Signal Processing” (with Sothivelr, K., Bender, F., Josse, F. J., Ricco, A. J., Mohler, R. E., Kolhatkar, R.) American Chemical Society Sensors Journal, Vol. 1, pp. 63-72, 2016.

345. “Sensor-Based Estimation of BTEX Concentrations in Water Samples Using Recursive Least Squares and Kalman Filter Techniques” (with Sothivelr, K., Bender, F., Josse, F. J., and Ricco, A. J.) IEEE Sensors Journal, DOI:10.1109/ICSENS.2016.7808535, 2016.

344. “Smart Power Grid Synchronization with Fault Tolerant Nonlinear Estimation” (with X. Wang) IEEE Transactions on Power Systems, vol. 31, pp. 4806-4816, 2016.

343. “Robust Multi-Criteria Optimal Fuzzy Control of Continuous-Time Nonlinear Systems,” (with X. Wang) J. of Systems Science & Control Engineering, DOI: 10.1080/21642583.2016.1185046

342. “Robust Multi-Criteria Optimal Fuzzy Control of Discrete-Time Nonlinear Systems” (with X. Wang) J. of Systems Science and Control Engineering Journal DOI: 10.1080/21642583.2016.1138338.

341. “Sensor-Based Estimation of BTEX Concentrations in Water Samples Using Recursive Least Squares and Kalman Filter Techniques” (with Sothivelr, K., Bender, F., Josse, F. J., Ricco, A. J.), IEEE Sensors Conf., Orlando, FL, USA, 2016.

340. “ $H_\infty$  Property of the Continuous-Time Extended Kalman Filter” (with J. L. Bonniwell and S. C. Schneider) Proc. of ASME DSCC, Paper No. 9746, 8 pp., Minneapolis MN, 2016.

339. “Analysis of Performance Resilience for Discrete-Time Systems with Both Multiplicative and Additive Control Gain Perturbations” (with F. Feng and S.C. Schneider) Proc. of ASME DSCC, Paper No. 9797, 8 pp., Minneapolis MN, 2016.

338. “Robust  $H_\infty$  Dynamic State-Feedback Control for Nonlinear Discrete-Time Systems via LMI-based Regional Eigenvalue Assignment” (with W. A. Baker Jr. and S. C. Schneider) Proc. of ASME DSCC, Paper No. 9762, 8 pp., Minneapolis, MN, 2016.



337. “ $H_\infty$ -Property of the Discrete-Time Extended Kalman Filter with Uncertain Measurements” (with J. L. Bonniwell and S. C. Schneider) Proc. of the 2016 American Control Conference, pp. 107-112, Boston, MA, 2016.

336. “Smart Power Grid Synchronization with Fault Tolerant Nonlinear Estimation” (with X. Wang) Proc. of the 2016 American Control Conference, pp. 5020-5025, Boston MA, 2016.

## **2015**

335. "Detection and Quantification of Aromatic Hydrocarbon Compounds in Water Using SH-SAW Sensors and Estimation-Theory-Based Signal Processing" (with K. Sothivelr, F. Bender, F. Josse, A. Ricco, R. Mohler, and R. Kolhatkar) American Chemical Society Sensors Journal, Publication Date (Web): October 19, 2015, DOI: 10.1021/acssensors.5b00024.

334. “Preliminary Testing Results of Sensor for Speciating Benzene, Toluene, and Ethylbenzene / Xylenes in Groundwater”, (with Mohler, R. E., Bender, F., Ricco, A. J., Josse, F., Fenton, S., Kolhatkar, R.) Proc. of the National Environmental Monitoring Conference NEMC 2015 (July 13–17), Chicago, IL.

333. “Robust Regional Eigenvalue Assignment by Dynamic State-Feedback Control for Nonlinear Continuous-time Systems” (with W. A. Baker Jr. and S. C. Schneider) Proc. of 2015 IEEE Conf. on Decision and Control, Osaka Japan, pp. 6903-6908, 2015.

332. “H-infinity Property of the Discrete-Time Extended Kalman Filter for Stochastic  $l_2$  Disturbances” (with J. L. Bonniwell and S. C. Schneider) Proc. of 2015 IEEE Conf. on Decision and Control, Osaka Japan, pp. 6992-6997, 2015.

331. “Performance Analysis of Resilient Dynamic Feedback H-2 Controllers” (with F. Feng, J. L. Bonniwell and S.C. Schneider) Proc.s of IEEE Int. Conf. on Control Applications, Sydney Australia, pp. 1404-1409, 2015.

330. “Performance Analysis of Resilient Dynamic Feedback  $H_2$  Controllers for Discrete-time Systems” (with F. Feng and S.C. Schneider) Proc.s of the European Control Conference, Linz, Austria, pp. 2003-2008, 2015.

## **2014**

329. “Stochastically Resilient Extended Kalman Filtering for Discrete-Time Nonlinear Systems with Sensor Failures” (with X. Wang) **Invited Paper**, Int. J. of Systems Science Special Issue “Analysis and Control of Randomly Occurring Incomplete Information” vol. 45, pp. 1393 - 1401, 2014.

328. “Robust and Resilient State-Dependent Control of Discrete-Time Nonlinear Systems with General Performance Criteria” (with X. Wang) Systems Science and Control Engineering, vol. 2, pp.48-54, 2014.

327. “Deterministic and Stochastic Resilience Analysis of Minimum-Time- Controlled Discrete-Time Systems” (with J.L. Bonniwell and S.C. Schneider) Electronics Letters, vol. 50, pp. 1197-1198, 2014.

326. “Discrete-Time Resilient Controller Design with General Criteria for a Class of Uncertain Nonlinear Systems” (with F. Feng, S. Schneider and Y. I. Yaz) Proc. of 2014 American Control Conference, Portland, OR, pp. 4268-4273, 2014.

325. “Near Real - Time Analysis of Binary Mixtures in Organic Compounds in Water Using SH-SAW and Estimation Theory,” (with K. Solthivelr, F. Bender, F. Josse, R. Mohler and A. Ricco) Proc. of IEEE Sensors Conf., Valencia, Spain, pp. 578-581, 2014.

## **2013**

324. “Robust and Resilient Finite-time Bounded Control of Discrete-Time Uncertain Nonlinear Systems,” (with M. ElBsat) Automatica, vol. 49, pp. 2292-2296, 2013.

323. “Nonlinear Estimation of Fluid Properties Using the Time Domain Response of a Vibrating Microcantilever,” (with M. ElBsat, S.C. Schneider, I. Dufour and F. Josse), **Invited Paper**, Int. J. of Modeling and Simulation, Vol. 33, no. 4, DOI: 10.2316/Journal.205.2013.4.205-5789, Acta Press.

322. “Discrete-Time Robust Controller Design for a Class of Nonlinear Systems with Uncertainties,” (with F. Feng, S. Schneider, and Y. I. Yaz), Proc. of the 52nd IEEE Conference on Decision and Control, Florence, Italy, pp. 1119-1124, 2013.

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12. "Stabilization of Discrete Non-Stationary Nonlinear Systems with Sector-Information," Proceedings of the 28th Midwest Symposium on Circuits and Systems, Louisville, KY, pp. 104-106, 1985.

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11. "A Note on the Receding Horizon Control Method," (with H. Selbuz), International Journal of Control, Vol. 40, No. 2, pp. 853-856, 1984.
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### **ADDITIONAL SCHOLARLY WORK (lightly reviewed poster presentations with one-page published abstract)**

78. "Data Driven Grouping of Building Zones for More Efficient HVAC Control" (with J. Burroughs and S.C. Schneider) Marquette University Forward Thinking Poster Session, November 2017

77. "The Effect of Delays on Deadbeat Controlled Systems" (with S. Binhumud, S. C. Schneider, and J. Bonniwell) Marquette University Forward Thinking Poster Session, November 2017

76. "Protection Against Attacks on Cyber-Physical Systems Controlled by PLCs" (with Y. Weng and S.C. Schneider) Marquette University Forward Thinking Poster Session, November 2017

75. "Risk Assessment and Threat Detection for Industrial Control Systems" (with J. Su and S.C. Schneider) Marquette University Forward Thinking Poster Session, November 2017

74. “Application of Kalman Filtering to Improve Response of Radiation Detectors” with A. Alshareef and S. C. Schneider) Marquette University Forward Thinking Poster Session, November 2017
73. “Analysis of Performance Resilience for Discrete-Time Systems with Both Multiplicative and Additive Control Gain Perturbations” (with F. Fan, and S.C. Schneider) Sigma Xi – Marquette Chapter, 2016 Poster Symposium, April 2016
72. “H-Infinity Property of the Continuous-Time Extended Kalman Filter” (with J.L Bonniwell and S.C. Schneider) Sigma Xi – Marquette Chapter, 2016 Poster Symposium, April 2016
71. “Robust  $H_\infty$  Dynamic State-Feedback Control for Nonlinear Discrete-Time Systems Via LMI-Based Regional Eigenvalue Assignment”. (with W. Alexander Baker, Jr., and S.C. Schneider) Sigma Xi – Marquette Chapter, 2016 Poster Symposium, April 2016
70. “ $H_\infty$  Property of the Discrete-Time Extended Kalman Filter for Systems with Uncertain Measurements” (with J. L. Bonniwell and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2015.
69. “Performance Analysis of Resilient Controllers for Continuous-Time Systems with both Multiplicative and Additive Gain Perturbations” (with F. Feng and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2015.
68. “Convergence Properties of a Linear Minimum Variance Unbiased Estimator” (with A. R. Strandt and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2015.
67. “Robust Regional Eigenvalue Placement by Dynamic State-Feedback Control in Continuous-Time,” (with W. A. Baker and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, April 2015.
66. “H-infinity Property of the Continuous-Time Extended Kalman Filter,” (with J. L. Bonniwell and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, April 2015.
65. “Performance Analysis of Resilient Dynamic Feedback  $H_2$  Controllers for Discrete-Time Systems,” (with F. Feng and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, April 2015.
64. “Techniques for Adaptive Estimation of Motor Parameters,” (with A. R. Strandt and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, April 2015.
63. “Near Real-Time Analysis of Organic Compound Mixtures in Water Using SH-SAW and Estimation Theory,” (with K. Solthivelr, F Josse, and F. Bender) Marquette University Forward Thinking Poster Session, December 2014.
62. “On the Robustness of an Optimal Eigenvalue Assignment Controller” (with W. Min and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2014.

61. "Performance Analysis of Resilient Dynamic Feedback  $H_2$  Controllers for Discrete-Time Systems," (with F. Fan and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2014.
60. "Adaptive Estimation of Electric Machine Parameters," (with A. Strandt and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2014.
59. "H-Infinity Property of the Continuous- and Discrete-Time EKF" (with J. Bonniwell and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2014.
58. "Locally Robust Regional Eigenvalue Assignment State-Feedback Controller Design for Circular Regions with LMI Techniques" (with W. A. Baker and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2013.
57. "Using Optimal Control Techniques for Regional Eigenvalue Assignment of Linear Systems" (with W. Min and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2013.
56. "Deterministic and Stochastic Resilience Analysis for time Optimal Control of Discrete-Time Systems" (with J. Bonniwell and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2013.
55. "Resilient Dynamic Feedback Control" (with F. Feng and S.C. Schneider) Marquette University Forward Thinking Poster Session, December 2013.
54. "A Computationally Efficient Technique for Regional Pole – Placement" (with W. A. Baker, F. Feng and S.C. Schneider) Marquette University Forward Thinking Poster Session, November 2012.
53. "An Analysis of the Robustness of the Discrete-Time Neoclassical Control as Applied to the Nonlinear Mass-Spring-Damper System" (with W. A. Baker, Jr. and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, March 2011.
52. "Evaluation of Applicability of Discrete-Time Optimal Disturbance Accommodation Control" (with K. Barhouse, J. Riffer and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, March 2011.
51. "Mixed Finite-Time and H-Infinity Controller Design for a Class of Discrete-Time Nonlinear Systems" (with M. ElBsat and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, March 2011.
50. "Nonlinear Estimation Based Prognostics of Inter-Turn Faults in Induction Machines" (with F. Feng, G. Sizov and N. Demerdash) Sigma Xi Poster Symposium, Marquette University, March 2011.
49. "Design of Mixed  $H_2$ - Dissipative Observers with Stochastic Resilience for Discrete-Time Nonlinear Systems" (with C.S. Jeong and Y.I. Yaz) Sigma Xi Poster Symposium, Marquette University, March 2011.

48. "Optimal Fuzzy Control of Nonlinear Systems" (with X. Wang and S.C. Schneider) Sigma Xi Poster Symposium, Marquette University, March 2011.
47. "Design of Stochastically Resilient Observers for Nonlinear Discrete-Time Systems" (with S. C. Schneider and C.S. Jeong) Presentation at the Marquette University Forward Thinking Poster Session, December 2010.
46. "Extensions of Discrete-Time Optimal Disturbance Accommodation Control" (with S. C. Schneider and K. Barhouse) Presentation at the Marquette University Forward Thinking Poster Session, December 2010.
45. "Finite-Time Stabilization of a Class of Nonlinear Systems" (with S. C. Schneider and M. ElBsat) Presentation at the Marquette University Forward Thinking Poster Session, December 2010.
44. "Nonlinear Accommodation Analysis of the Discrete-Time Neoclassical Controller" (with S. C. Schneider and W. A. Baker, Jr.) Presentation at the Marquette University Forward Thinking Poster Session, December 2010.
43. "Nonlinear Estimation Based Prognostics of Inter-Turn Faults in Induction Machines" (with N. Demerdash and F. Feng) Presentation at the Marquette University Forward Thinking Poster Session, December 2010.
42. "Comparative study of controller resilience and robustness for general performance criteria" (with F. Feng, C-S. Jeong, and S. C. Schneider), 2010 Sigma Xi Poster Symposium, Marquette University, April 2010
41. "Design and Analysis of a Constrained Input Minimum Time Digital Control System" (with K. Barhouse, J. Riffer, and S. C. Schneider) 2010 Sigma Xi Poster Symposium, Marquette University, April 2010
40. "Neoclassical Digital Control of the Ball and Beam Systems" (with W. A. Baker, Jr., and S. C. Schneider) 2010 Sigma Xi Poster Symposium, Marquette University, April 2010
39. "Nonlinear Estimation Approach for Determining the Viscosity and Density of Fluids Loading Vibrating Microcantilevers" (with M. N. ElBsat, and S. C. Schneider) 2010 Sigma Xi Poster Symposium, Marquette University, April 2010
38. "Robust Fuzzy Tracking Control of Robotic Arm Systems with General Performance Criteria" (with X. Wang, and S.C. Schneider) 2010 Sigma Xi Poster Symposium, Marquette University, April 2010
37. "Model-Reference Incipient Stator Fault Diagnostics in Induction Machines," (with G.Y. Sizov and N.A. O. Demerdash) Presentation at the Marquette University Forward Thinking Poster Session, December 2009

36. "Comparative Study of Controller Resilience and Robustness for General Performance Criteria," (with S. Schneider, C.S. Jeong and F. Feng) Presentation at the Marquette University Forward Thinking Poster Session, December 2009
35. "Estimator-Based Detection of Harmful Agents in a Viscoelastic Liquid Environment," (with S. Schneider and M. ElBsat) Presentation at the Marquette University Forward Thinking Poster Session, December 2009
34. "Graphical Analysis of an Optimal Control Design for Discrete- Time Systems," (with S. Schneider and K. Barhouse) Presentation at the Marquette University Forward Thinking Poster Session, December 2009
33. "Observer Based Digital Neoclassical Design Controllers," (with S. Schneider and W. A. Baker) Presentation at the Marquette University Forward Thinking Poster Session, December 2009
32. "State Dependent LMI Control of Furuta Pendulum with General Performance Criteria," (with S. Schneider and X. Wang) Presentation at the Marquette University Forward Thinking Poster Session, December 2009
31. "Modeling and Analysis of a Micro-electromechanical Sensor," (with M. ElBsat) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
30. "Discrete-Time State Feedback Controller Design for a Class of Nonlinear Systems with General Criteria," (with F. Feng and C.S. Jeong) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
29. "Resilient LQ/H-infinity Control of a Class of Nonlinear Systems," (with C.S Jeong) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
28. "Near Real Time Monitoring of Organophosphate Pesticides in Aqueous Solutions Using Acoustic Wave Chemical Sensors," (with A. Mensa-Brown, M. Wenzel, F. Josse, S. Schneider) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
27. "Minimum Time Control of Discrete-Time Systems with Known Waveform Type Unknown Disturbances," (with J. Riffer and S.C. Schneider) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
26. "Chaotic Modulation/Demodulation with Nonlinear State Estimators," (with X. Wang), Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
25. "A Digital Control Design for a Mass-Spring Damper System," (with W. A. Baker and S.C. Schneider) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2009
24. "Modeling of a MEMS Device in Liquid Environment" (with M. ElBsat) Presentation at the IEEE Milwaukee Section Student Research Meeting, April 2009.

23. "Improved Chaotic Communications Using Nonlinear Filtering Techniques" (with X. Wang) Presentation at the IEEE Milwaukee Section Student Research Meeting, April 2009.
22. "State-Space Modeling and Transient Analysis of Vibrating Microcantilevers for Rheological Measurements," (with M. ElBsat and I. Dufour) Poster Presentation at Marquette University International Research Poster Session, April 2009.
21. "Fault Diagnostics, Prognostics, and Mitigation in Electric Drive/Generation Systems for Renewables," (with G. Sizov and N.A.O. Demerdash) Presentation at the WI Renewable Energy Summit, March 2009.
20. "Mixed H<sub>2</sub>-H<sub>∞</sub> Control of Discrete Time Nonlinear Systems Based on the State Dependent LMI Approach" (with C.S. Jeong and X. Wang) Presentation at the Marquette University Forward Thinking Poster Session, December 2008.
19. "Time Optimal Control of Discrete Time Systems with Known Waveform Type Disturbances" (with J. Riffer and S. Schneider) Presentation at the Marquette University Forward Thinking Poster Session, December 2008.
18. "Transient and Steady State Models for a Sinusoidally-Excited Beam" (with R. Cox, M. ElBsat, F. Feng and X. Wang) Presentation at the Marquette University Forward Thinking Poster Session, December 2008.
17. "A Novel State Estimator for Discrete-Time Nonlinear Stochastic Systems" (with T.Y. Zhai and C.S. Jeong) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2008.
16. "Improved Chaotic Communications Using Nonlinear Filtering" (with X. Wang) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2008.
15. "State Estimator Based Synchronization and Stabilizing Control of Chaotic Systems" (with C.S. Jeong) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2008.
14. "A Novel Optimal Control Design and its Application to a Mass-Spring-Damper System" (with K. J. Holterman and S.C. Schneider) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2008.
13. "Optimal Adaptive State Estimation for Sensor Systems with Intermittent Observations" (with F. Hounkpevi) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2007.
12. "A Neoclassical Optimal Control Design," (with K. Holterman and S.C. Schneider) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2007.
11. "A Novel Nonlinear Observer Based Chaotic Synchronization Using Chua's Circuit," (with C.S. Jeong) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2007.



10. "Liquid-Phase Detection of Organophosphate Pesticides Using Guided SH-SAW Sensor," (with A.K. Mensa-Brown, M.J. Wenzel and F.J. Josse) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2007.
9. "Rapid Detection of Analytes with Improved Selectivity Using Microcantilever Chemical Sensors and Estimation Theory," (with M.J. Wenzel, F.J. Josse, S.M. Heinrich and P.G. Datskos) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, April 2007.
8. "Nonlinear Estimation Approach to Chaotic Synchronization," (with F. O. Hounkpevi and C.S. Jeong) Presentation at the Marquette University Forward Thinking Poster Session, December 2006.
7. "Experiments on Selected Applications of the Extended Kalman Filter in Chaotic Communications: Unauthorized and Authorized Receiver Design," (with F. Hounkpevi) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, March 2006.
6. "LMI Based Design of Resilient Observers with General Criteria," (with C.S. Jeong, A. Bahakeem and Y. I. Yaz) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, March 2006.
5. "Communication with Chaos by Using Nonlinear Estimation Techniques," (with H. Ruan and T. Zhai) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, October 2003.
4. "Extensions of Disturbance Accommodating Control," (with B. Black) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, October 2003.
3. "Bank of Extended Kalman Filters for Adaptive State Estimation of Nonlinear Systems," (with T. Zhai and F. Hounkpevi) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, October 2003.
2. "Stochastic Resilient Design of Discrete Time State Estimation," (with C. S. Jeong and Y. I. Yaz) Poster presentation at the Annual Milwaukee Sigma Xi Symposium, October 2003.
1. "A Demodulation Scheme Based on State Estimation for Chaotic Digital Communication," (with H. Ruan and T. Zhai), Poster presentation at the Annual Milwaukee Sigma Xi Symposium, October 2002.