
A. GALIP ULSOY - CURRICULUM VITAE

December 15, 2008

SHORT BIOGRAPHY

A. Galip Ulsoy is the William Clay Ford Professor of Manufacturing at University of Michigan (UM) at Ann Arbor, Director of the Ground Robotics Research Center, and Deputy Director of the Engineering Research Center for Reconfigurable Manufacturing Systems. He received the Ph.D. in Mechanical Engineering (ME) from University of California at Berkeley (1979), the M.S. degree in ME from Cornell University (1975), and the B.S. degree in Engineering from Swarthmore College (1973). He served as Chair of the ME Department, Technical Editor of the *ASME J. Dynamic Systems, Measurement and Control*, and Director of the Civil and Mechanical Systems Division at the National Science Foundation. A. Galip Ulsoy has made basic research contributions to the mechanics of axially moving elastic systems (e.g., translating bands, rotating shafts), and to control system design (e.g., adaptive control, state derivative feedback, coupling between modeling and controller design, time-delayed systems) as well as major research contributions to manufacturing systems (e.g., reconfigurable manufacturing, sawing, turning, milling, drilling, robotics, stamping), automotive systems (e.g., accessory drive belts, active suspensions, vehicle lateral control), and other engineering systems (e.g., disk drives, mineral processing operations). He is co-author of a textbook, over 250 articles, is a co-inventor on 3 patents, and has been a principal investigator, or co-investigator, for research projects funded at over \$90 million. A. Galip Ulsoy received the 1979 Wood Award from the Forest Products Research Society, a Society of Manufacturing Engineers (SME) 1986 Outstanding Young Manufacturing Engineer Award, the American Automatic Control Council's 1993 O. Hugo Schuck Best Paper Award, the 1995 South West Mechanics Lectureship, the 1997 Service Excellence Award from the College of Engineering at UM, the 2003 Rudolf Kalman Best Paper Award from the *ASME J. Dynamic Systems, Measurement and Control*, the 2002 Michael J. Rabins Leadership Award and the 2004 Henry M. Paynter Outstanding Investigator Award from the Dynamic Systems and Control Division of American Society of Mechanical Engineers (ASME), the 2008 Albert M. Sargent Progress Award from SME, and the 2008 Rufus T. Oldenburger Medal from ASME. He is a member of the National Academy of Engineering and is a Fellow of both the ASME and SME.

PERSONAL

Born August 17, 1950 in Turkey; Naturalized citizen of the USA (1983); Married with one daughter.

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Degrees Earned

- Ph.D., Mechanical Engineering, University of California at Berkeley, 1979
Thesis: Vibration and Stability of Bandsaw Blades, Advisor: C.D. Mote, Jr.
- M.S., Mechanical Engineering, Cornell University, 1975
Thesis: Optimal Pseudo-Derivative Feedback Control, Advisor: R.M. Phelan
- B.S., Engineering, Swarthmore College, 1973

Positions at University of Michigan

- William Clay Ford Professor of Manufacturing (1996-), Professor (1992-), Associate Professor (1986-92), Assistant Professor (1980-86), Department of Mechanical Engineering.
- Founding Director, Ground Robotics Research Center, 2007-. Academic research/education center in autonomous ground vehicles, funded at \$5,000,000 to date by the US Army.
- Founding Deputy Director, National Science Foundation (NSF) Engineering Research Center for Reconfigurable Machining Systems, 1996-2002, and 2006-. The largest academic manufacturing research center in the USA, funded at approximately \$5,000,000 annually by the National Science Foundation during 1996-2007 and by member companies, employing approximately 50 people.
- Chair, Department of Mechanical Engineering, 1998-2001. One of the largest and highest ranked mechanical engineering departments in the USA, with an annual budget of over \$30,000,000, over 50 faculty and 60 staff, awarding approximately 250 BS, 150 MS and 40 PhD degrees per year.
- Founding Director, Program in Manufacturing, College of Engineering, 1993-94, 1996-98. Initiated in 1994, this program has grown to become one of the largest graduate programs in the College, and has led to the establishment of many other professional masters degree programs.
- Director (1992-94), Founding Associate Director (1990-92), NSF Industry-University Cooperative Research Center for Dimensional Measurement and Control in Manufacturing. Funded primarily by industry, with some support from NSF, at approximately \$750,000 per year.
- Associate Chair and Director of Laboratories, Department of Mechanical Engineering, 1992-93.
- Chair, Mechanical Engineering Graduate Program, H.H. Rackham Graduate School, 1987-89.
- Director, Consortium on Sensing and Control for Metal Cutting, 1984-86.

Positions at Other Institutions

- Director, Division of Civil and Mechanical Systems, National Science Foundation, Arlington, Virginia, 2003-2005. The division had an annual budget of approximately \$85,000,000, with 12 Program Officers, and 6 staff. Testified before a subcommittee of the US Senate Committee on Commerce, Science, and Transportation and briefed the US House Committee on Science and Technology.
- Visiting Researcher, Research Labs, Ford, Dearborn, Michigan, 1995 and Summers 1990-92.
- Visiting Associate Professor, Mechanical Engin., Bogazici University, Istanbul, Turkey, 1986-87.
- Invited Lecturer, Shanghai Jiatong University, Nanjing Institute of Technology, and Xian Northwestern Polytechnical University, People's Republic of China, August 1985.
- Postdoctoral Fellow, Material Science & Mineral Engin., Univ. of California, Berkeley, 1979-80.
- Teaching Assoc./Research Assistant, Mechanical Engin., Univ. of California, Berkeley, 1975-79.
- Teaching/Research Assistant, Mechanical & Aerospace Engin., Cornell University, 1973-74.

Professional Accomplishments

Teaching: Galip Ulsoy was the founding Director of the Program in Manufacturing at the University of Michigan, which awards the professional Master of Engineering and Doctor of Engineering degrees. He established the M. Eng. And D. Eng. in Manufacturing degrees and initiated their awarding by distance learning to General Motors sites around the world. Galip Ulsoy has co-developed and taught six new courses (i.e., adaptive control, design of control systems, microcomputer applications in manufacturing, vehicle control systems, manufacturing technologies and strategies, agile reconfigurable manufacturing) at the University of Michigan, and has co-authored the textbook *Microcomputer Applications in Manufacturing* (Wiley, 1989). He has also taught short courses on vehicle control systems, and reconfigurable manufacturing systems. Galip Ulsoy has received course evaluations of 4 out of 5 for his classroom teaching and advised, or co-advised, over 40 doctoral students. His former doctoral students hold positions in various academic institutions around the world, as well as leadership positions in industry, and three have established successful companies. Galip Ulsoy organized the NSF sponsored workshop on “The 5XME: Transforming Mechanical Engineering Education in the USA,” and edited the report from that workshop.

Research: Galip Ulsoy's research interests are in the dynamics and control of mechanical systems, especially manufacturing and automotive systems. He has conducted fundamental research on the dynamic analysis and control of rotating and translating elastic systems as well as on the design of control systems. Galip Ulsoy has also conducted research in manufacturing and automotive systems. His work in the dynamics of bandsaw blades and drills is extensively cited, as is his work on the dynamics of accessory drive belts and road-departure prevention systems. He is regarded as one of the pioneers in the application of methods from advanced control theory to manufacturing systems. Galip Ulsoy is one of the originators of the reconfigurable manufacturing systems concept, which has had world-wide impact. His publications are widely cited and his research has been recognized through a variety of top national awards (e.g., FPRS Wood Award, SME Outstanding Young Manufacturing Engineer, Southwest Mechanics Lectureship, AACC O. Hugo Schuck Best Paper Award, 2003 Rudolf Kalman Best Paper Award for *ASME Transactions J. Dynamic Systems, Measurement and Control*, 2004 Henry M. Paynter Outstanding Investigator Award from the ASME Dynamic Systems and Control Division, election to the National Academy of Engineering in 2006, the 2008 SME Albert M. Sargent Progress Award, and the 2008 Rufus T. Oldenburger Medal from ASME). He has co-authored over 250 publications, is co-inventor on 3 patents, and consults with industry and government worldwide.

Service: Galip Ulsoy has served as the Director of the Civil and Mechanical Systems Division of the National Science Foundation, as the Editor of the *ASME J. of Dynamic Systems, Measurement and Control*, and is on the editorial board of several international journals. Galip Ulsoy is Past President of the American Automatic Control Council; the national member organization which represents the USA in the International Federation of Automatic Control. He has served as the General Chair of the 2000 American Control Conference and the 2008 Dynamic Systems and Control Conference, and as Chair of the Dynamic Systems and Control Division of ASME. At the University of Michigan, he served as the Chair, Associate Chair, and Graduate Program Chair for the Mechanical Engineering Department, as an elected member of the College of Engineering Executive Committee, as the founding Director of the Program in Manufacturing, the founding Deputy Director of the Engineering Research Center for Reconfigurable Machining Systems and the founding Director of the Ground Robotics Research Center. He has also served as the Associate Director and Director of the Industry-University Cooperative Research Center. He is a member of the National Academy of Engineering and a Fellow of ASME and SME, a Senior Member of IEEE, and a Member of ASEE. He has received Service Excellence Awards from the Dept. of Mechanical Engineering and the College of Engineering at the University of Michigan, and the ASME Dynamic Systems and Control Division 2002 Michael J. Rabins Leadership Award.

Honors and Awards

- The 2008 Oldenburger Lecture, on "Control of Time Delay Systems via the Lambert W Function," at the 1st Annual ASME Dynamic Systems and Control Conference, Ann Arbor, October 2008.
- Rufus T. Oldenburger Medal, ASME, 2008. "*For seminal contributions to modeling and control of manufacturing and automotive systems, to vibrational stability analysis of rotating and translating elastic systems, and for his outstanding leadership to the Dynamic Systems and Control community*"
- Robert M. Caddell Memorial Faculty/Student Achievement Award to A. Galip Ulsoy, Yongseob Lim and Ravi Venugopal, Dept. of Mechanical Engineering, Univ. of Michigan, 2008.
- Plenary Presentation: "Recommendations from the 5XME Workshop on Transforming Mechanical Engineering Education," ASME Mech. Engineering Education Conf., Galveston, TX, April 2008.
- Albert M. Sargent Progress Award, Society of Manufacturing Engineers, 2008.
- Graduate Colloquium Speaker, Dept. of Mechanical Engineering, Purdue University, Nov. 2006.
- Outstanding Achievement Award, Dept. Mechanical Engineering, Univ. of Michigan, 2005-2006.
- National Academy of Engineering, USA. Elected to membership in 2006 "*For research on the dynamics and control of axially moving elastic materials and their implementation in automotive and manufacturing systems.*"
- Sectional Keynote Paper: *Strategic Issues in Sensors and Smart Structures*, by S.C. Liu, M. Tomizuka and A.G. Ulsoy, 3rd European Conference on Structural Control, 2006.

- Keynote Paper, *A 21st Century Engineering Education for Leading Concurrent Discovery and Innovation*, President's Roundtable, CIRP General Assembly, Antalya, Turkey, August 2005.
- H. M. Paynter Outstanding Investigator Award, ASME Dynamic Systems & Control Division, 2004.
- Rudolf Kalman Best Paper Award for *ASME J. Dynamic Systems, Measurement and Control*, 2003.
- M. J. Rabins Leadership Award, ASME Dynamic Systems & Control Division, 2002.
- Distinguished Lecturer, Computer Integrated Studies Research Center, University of British Columbia, Vancouver, Canada, Feb. 2002.
- Keynote Paper, Workshop on Reconfigurable Manufacturing: Beyond Flexible, Materials and Manufacturing of Ontario, McMaster University, Canada, Oct. 2001.
- Distinguished Lecturer, Materials and Manufacturing of Ontario, National Research Council, Canada, March-June 2001.
- Ford Innovation Award for patent "Vehicle Steering System and Method for Controlling Vehicle Direction Through Differential Braking of Left and Right Road Wheels," 2000.
- Plenary Paper, *Reconfigurable Machine Tools and Systems*, International Machine Tool Engineers Conference, Tokyo, Japan, October 2000.
- Distinguished Lecture Series, Dept. Mechanical Engineering, Penn State University, Feb. 2000.
- Feddersen Distinguished Lecturer, Dept. of Mechanical Engineering, Purdue University, Feb. 2000.
- Technology and Innovation Award, 1999, *Industry Week*, Agile Line Boring Project, Member of Joint University of Michigan and Lamb Technicon Research Team.
- Ford Innovation Award for patent "Method and Apparatus for Vehicle Yaw Rate Estimation," 1999.
- Keynote Paper, *Reconfigurable Manufacturing Systems*, CIRP General Assembly, Switzerland, 1999.
- Service Excellence Award, College of Engineering, University of Michigan, 1997.
- William Clay Ford Professorship, College of Engineering, University of Michigan, 1996.
- Election to Fellow, Society of Manufacturing Engineers, 1996.
- Research Excellence Award, Dept. of Mechanical Engineering, Univ. of Michigan, 1996.
- Distinguished Lecturer Series in Manufacturing, University of California, Davis, November 1995.
- Lecturer, Southwest Mechanics Lecture Series, 1995.
- Best Presentation in Session Awards at the following American Control Conferences: 2008 (with S. Yi and P.W. nelson), 2002 (with H. Mahmoud, P.T. Kabamba and G.A. Brusher and with L.K. Chen), 2000 (with F.M. Asl), 1999 (with LK. Chen and with C.W. Hsu), 1997 (with T. Pilutti, and also with G. Brusher and P.T. Kabamba), 1995 (with T. Pilutti), 1994 (with G. Brusher and P. T. Kabamba), and 1993 (with R. J. Furness and C. L. Wu).
- O. Hugo Schuck Best Paper Award, American Automatic Control Council, for the paper "Supervisory Control of Drilling," by R. Furness, A. G. Ulsoy, and C. L. Wu, 1993.
- Biography included in *Who's Who in America*, *Who's Who in Science and Engineering*, *Who's Who Among America's Teachers*, *Who's Who in the Midwest*, *Who's Who in Finance and Industry*, *Who's Who in Turkey*, and *Directory of Turkish-American Scientists*.
- Election to Fellow, American Society of Mechanical Engineers, 1993.
- Service Excellence Award, Dept. Mechanical Engineering, Univ. of Michigan, 1993.
- Letter of Commendation for Excellence in Classroom Teaching (i.e., among top 10% in student course evaluations) from Dean of the College of Engineering, 1992 and 1994.
- Outstanding Young Manufacturing Engineer, Society of Manufacturing Engineers, 1986.
- Research Incentive Award, Exxon Foundation Faculty Assistance Program, 1984-85.
- TRW Faculty Assistanceship Grant, 1983-85.
- Mining and Mineral Resources Institute Post Doctoral Fellowship, 1979-80.
- Wood Award (1st place), Forest Products Research Society, 1979.
- Stanley M. Tasheira Fellowship, University of California at Berkeley, 1975-76.
- Elected Member, Nu Chapter of Sigma Tau, Engineering Honor Society.
- John Russel Hayes Poetry Prize (1st place), Swarthmore College, 1971.
- Swarthmore College Scholarship, 1969-73.
- Charles S. MacNeal Award, Robert Academy, Istanbul, 1969.

TEACHING

Contributions to Teaching

Galip Ulsoy has made significant contributions to curriculum development, including the initiation and development of the College of Engineering's professional Master of Engineering and Doctor of Engineering degree templates and the founding of the interdisciplinary Program in Manufacturing (PIM) at the University of Michigan. He also initiated and implemented the first distance learning M. Eng. degree offering (through PIM) with General Motors. Galip Ulsoy has contributed to and led the efforts over the past twenty years in making the Mechanical Engineering Department at Michigan one of the best in the world in manufacturing automation and in the control of mechanical systems. He has developed new courses in microcomputer applications in manufacturing, design of automatic control systems, adaptive control systems, vehicle control systems, manufacturing technologies and strategies, special topics (e.g., sensors and signal processing) and contributed to the development of other courses (e.g., agile, reconfigurable manufacturing). Galip Ulsoy co-authored, with W.R. DeVries, the textbook *Microcomputer Applications in Manufacturing* (Wiley, 1989). He has received student course evaluations of 4 out of 5, and advised, or co-advised, over 40 doctoral students. His former doctoral students hold positions in various academic institutions around the world, as well as leadership positions in industry, and three have established successful companies. He has also developed excellent laboratory facilities for undergraduate and graduate student education and research in manufacturing and controls. This included the funding, design and implementation of the showcase Integrated Manufacturing Systems Laboratory. Galip Ulsoy has organized the NSF sponsored workshop on "The 5XME: Transforming Mechanical Engineering Education in the USA," and edited the report from that workshop.

New Courses Introduced at UM

- ME 465 - Microcomputer Applications in Manufacturing (Senior Level).
Simulation, data acquisition, data analysis, and control in real-time using interrupts. Manufacturing case studies for forming, machining, stepping motor control, and dc servo motor control. Lecture and lab. (with W. R. DeVries).
- ME 561 - Design of Automatic Control Systems (Graduate Level).
Topics of state vector feedback, state estimation, modal control, optimal control, parameter estimation, and adaptive control are introduced for both continuous and discrete time systems. Design application is emphasized through a course project and case studies. Lecture only.
- ME 568 - Vehicle Control Systems (Graduate Level).
Vehicle control systems, including lateral and longitudinal motion control, suspensions, braking, traction, etc. Also review of vehicle dynamics, the role and modeling of the driver, and advanced vehicle control systems for intelligent vehicle-highway systems. Lecture only.
- ME 599 - Special Topics Courses (Graduate level).
Computer Control of Mechanical Systems (at Bogazici University). Lecture only. Sensors and Signal Processing (with S. Braun at University of Michigan). Lecture only. Mechanical Vibrations (at Bogazici University). Lecture only.
- MFG 501, 502, 503 - Manufacturing Seminar/Project (Graduate Level)
A joint manufacturing seminar between the engineering and business schools for both Master of Engineering in Manufacturing and Master of Business Administration degree students. Includes speakers on a variety of current manufacturing topics from industry, engineering faculty, and business faculty. Includes team building for summer manufacturing internships in industry, and the internships themselves. Renamed Manufacturing Technologies & Strategies.
- ME 661 - Adaptive Control Systems (Graduate Level).
Control of systems with undetermined or slowly time varying parameters. Self-tuning and model reference adaptive control for continuous and discrete time deterministic systems. Simulation studies based on engineering applications. Lecture only.

Other Courses Taught at U of M

- ME 240 - Introduction to Dynamics (Sophomore Level).
Introduction to Newtonian Mechanics. Dynamics of particles, systems of particles, and rigid bodies. Applications include central force motion and vibration problems. Lecture only.
- ME 360 - Introduction to System Dynamics (Junior Level).
Dynamic modeling and analysis of lumped-parameter mechanical systems utilizing experimental, analytical, and numerical methods. Lecture and laboratory.
- ME 461 - Automatic Control (Senior Level).
Linear feedback control theory with emphasis on mechanical systems. Methods for control system representation, analysis, stability, and design. Lecture and laboratory.
- ME 560 - Modeling Dynamic Systems (Graduate Level).
A unified approach to the dynamic modeling of linear systems using bondgraphs, and to their simulation and analysis. Lecture only.
- ME587 - Reconfigurable, Agile Manufacturing (Graduate Level)
A joint engineering and business school course dealing with the strategic, organizational and technological aspects of manufacturing responsiveness.
- ME 790 - Seminar in Mechanical Systems and Control (Graduate Level).
A seminar course for Ph.D. candidates conducting research in the areas of dynamic modeling and control of mechanical systems. Student prepared discussions and presentations on topics of current research interest.

Short Courses and Workshops

- Reconfigurable Manufacturing Systems (Co-Taught at University of Michigan). Various aspects of reconfigurable manufacturing systems (RMS). Co-taught the module on the RMS science-base.
- Vehicle Control Systems (Taught at the G.M. Technical Center). Vehicle control systems, including lateral and longitudinal motion control, suspensions, braking, traction, etc.

Student Course Evaluation Scores (1994-present)

Term	Course	Overall, this is an excellent course	Overall, the instructor is an excellent teacher
F08	ME568 Vehicle Control Systems		
F07	ME568 Vehicle Control Systems	4.00	4.00
W07	ME360 Dynamic Modeling, Analysis and Control	4.23	4.25
F06	ME568 Vehicle Control Systems	3.50	3.20
W06	ME360 Dynamic Modeling Analysis and Control	3.96	4.00
F05	ME568 Vehicle Control Systems	3.61	3.60
Sp05	ME360 Dynamic Modeling Analysis and Control	4.09	4.18
F02	ME568 Vehicle Control Systems	3.98	3.86
F00	ME661 Adaptive Control Systems	3.30	3.17
F99	ME587 Reconfigurable Agile Manufacturing	3.38	3.40
F98	ME661 Adaptive Control Systems	4.00	4.00
F97	ME461 Automatic Control	4.25	4.15
F96	ME661 Adaptive Control Systems	4.36	4.33
W96	ME360 Dynamic Modeling Analysis and Control	3.78	3.93
F94	ME568 Vehicle Control Systems	3.92	4.14
W94	ME568 Vehicle Control Systems	3.95	4.00
W94	MFG502 Manufacturing Seminar II	4.67	4.83
TOTAL	AVERAGES	3.94	3.94

Scale: 5=strongly agree, 4=agree, 3=neither agree nor disagree, 2=disagree, 1=strongly disagree

Ph.D. Thesis Committees Chaired

- (41) Rachael Bis, "Infrared Sensing for Active Safety in Autonomous Vehicles," Expected completion December 2010. (Co-chair: H. Peng).
- (40) Shifang Li, "Design for Swapping Modularity for a Series Hybrid Electric Vehicle," Expected completion December 2010.
- (39) Shiming Duan, "Modeling, Analysis and Control of Multi-Model Systems," Expected completion December 2009 (Co-chair: J. Ni).
- (38) Diane Peters, "Co-Design of a Controlled System and Its Controller," Expected completion December 2009. (Co-chair: P.Y. Papalambros).
- (37) Yongseob Lim, "Multi-Input Multi-Output Control of Binder Forces in Stamping," Expected completion December 2009.
- (36) Sun Yi, "Analysis of Delay Differential Equations via the Matrix Lambert W Function," Expected completion May 2009. (Co-chair: P.W. Nelson, Mathematics).
- (35) Melih Cakmakci, "Mechatronic Design for Swapping Modularity using Bi-Directional Communication in Networked Control Systems," Expected completion December 2008.
- (34) Jaspreet S. Dhupia, "Effect of Joint Nonlinearities on the Dynamic Performance of Machine Tools," Completed December 2006. (Co-chair: Reuven Katz) (Assistant Professor, Nanyang Technological University, Singapore).
- (33) Sulaiman F. Alyaquot, "A Multi-System Optimization Approach to Coupling in Robust Design and Control," Completed May 2006. (Co-chair: P.Y. Papalambros) (Assistant Professor, Kuwait University, Safat, Kuwait).
- (32) Haitham Mahmoud, "Setting and Management of Subsystem design Targets in the Parallel Design of Complex Engineered Systems," Completed December 2004 (Co-chair: P.T. Kabamba, Aerospace Engineering). (Financial Research Engineer, Fannie Mae, Washington, D.C.).
- (31) Hosam K. Fathy, "Combined Plant and Controller Optimization: Theory, Strategies and Applications," Completed May 2003 (Co-chair: P.Y. Papalambros). (Assistant Research Scientist, Automotive Research Center, University of Michigan, Ann Arbor, MI).
- (30) Farshid Maghami Asl, "Capacity Management in Reconfigurable Manufacturing Systems," Completed December 2002. (Vice President, Goldman Sachs & Co., New York, NY).
- (29) Liang-Kuang Chen, "Driver and Controller Interactions in Vehicle Active Safety Systems," Completed August 2002. (Assistant Professor, Dept. of Mechanical Engineering, National Taiwan University of Science and Technology).
- (28) Cheng-Wei Hsu, "Analysis, Design and Experiments for Punch Force Control in Sheet Metal Forming," Completed May 2000. (Research Engineer, Ford Motor Company, Dearborn, MI).
- (27) Tomas Larsson, "Controller Design for Linear Systems Subject to Actuator Saturation," Completed August 1999. (Research Engineer, General Motors, Warren, MI).
- (26) Chen-Jung Li, "Tool Tip Displacement Measurement, Process Modeling and Chatter Avoidance in Agile Precision Line Boring," Completed May 1999 (Co-chair: W.J. Endres). (Assistant Professor, National Kaohsiung First University of Science and Technology, Taiwan)
- (25) Robert Landers, "Supervisory Machining Control: A Design Approach Plus Chatter Analysis and Force Control Components," Completed April 1997. (Associate Professor, Dept. of Mechanical Engineering, Missouri University of Science and Technology, Rolla, Missouri).
- (24) Thomas Pilutti, "Lateral Vehicle Co-Pilot to Avoid Unintended Roadway Departure," Completed February 1997. (Staff Research Engineer, Scientific Research Labs, Ford, Dearborn, MI).
- (23) Foued Ben Amara, "Adaptive Sinusoidal Disturbances Rejection in Linear Systems with Application to Noise Cancellation," Completed December 1996. (Co-chair P.T. Kabamba). (Assistant Professor, University of Toronto, Toronto, Canada).
- (22) Chiu Feng Lin, "Lane Sensing and Path Prediction for Preventing Vehicle Road Departure Accidents," Completed June 1995 (Professor and Chair, Vehicle Engineering Department, National Pintung Institute of Technology, Taiwan).

- (21) Diana M. Rincon, "Coupled Force and Vibration Modeling of Drills with Complex Cross Sectional Geometries," Completed December 1993 (Assistant Professor, College of Education, Florida International University, Miami, FL).
- (20) Gerald A. Brusher, "Coupling Between the Modeling and Controller-Design Problems" Completed August 1993. (Co-chair: P.T. Kabamba). (Product Development Engineer, Truck Operations, Ford, Dearborn, MI).
- (19) Zbigniew Pasek, "An Adaptive Assembly System for Automotive Applications," Completed August 1993. (Co-chair: S. M. Wu). (Faculty, Industrial and Manufacturing Engineering, University of Windsor, Windsor, Canada).
- (18) Steven Jones, "Quantification and Reduction of Dynamically Induced Errors in Coordinate Measuring Machines," Completed June 1993. (Director for Research and Development, Suspa Inc., Grand Rapids, MI).
- (17) Sung-Gwang Chen, "Machining Error Source Diagnostics Using a Turning Process Simulator," Completed June 1993. (Co-chair: Y. Koren). (Co-Founder and Manager, A2 Automation, Ann Arbor, MI).
- (16) Abdul Al-Jawi, "Vibration Localization in Dual-Span Axially Moving Elastic Systems," Completed December 1992. (Co-chair: C. Pierre). (Associate Professor and Vice Dean, Dept. of Mechanical Engineering, King Abdulaziz University, Jeddah, Saudi Arabia).
- (15) Randall Beikmann, "Static and Dynamic Behavior of Serpentine Belt Drive Systems: Theory and Experiment," Completed December 1992 (Co-chair: N.C. Perkins). (Research Engineer, Noise and Vibration Laboratory, General Motors Proving Grounds, Milford, MI).
- (14) Suhyun Choi, "Vibration Localization in Rotating Shafts," Completed August 1992. (Co-chair: C. Pierre). (Director, Daewoo Shipbuilding and Marine Engineering Co., Seoul, Korea).
- (13) Heuigi Son, "Dynamics of Prestressed Translating or Rotating Anisotropic Plates Subject to Transverse Loads and Heat Sources," Completed June 1992 (Co-chair: N. Kikuchi). (Manager, Goldstar Corporation, Seoul, Korea).
- (12) Richard Furness, "Supervisory Control of the Drilling Process", Completed June 1992. (Senior Staff Engineer, Advanced Manufacturing, Ford, Dearborn, MI).
- (11) Fon-Lin Hu, "Force and Motion Control of a Constrained Flexible Manipulator," Completed December 1991 (Research Engineer, Aeronautical Research Laboratory, Chung-Shan Institute of Science and Technology, Tai-Chung, Taiwan).
- (10) Jong-Jin Park, "Adaptive Observer and Computer Vision for On-Line Flank Wear Estimation." Completed June 1990. (Founder and President, Tae Wha Industrial Company, Seoul, Korea).
- (9) Kyung Chul Shin, "Observation and Control of Force and Motion in Constrained Dynamical Systems." Completed August 1988. (Co-chair: P.T. Kabamba). (Founder and President, Yujin Robotics Company, Seoul, Korea).
- (8) Ahmet Yigit, "Dynamics of Flexible Mechanisms with Impact." Completed June 1988. (Co-chair: R.A. Scott). (Professor, Dept. of Mechanical Engineering, Kuwait University, Safat, Kuwait).
- (7) Ozan Tekinalp, "Dynamic Modeling of Drill Bit Vibrations." Completed June 1988. (Professor, Department of Aeronautical Engineering, Middle East Technical University, Ankara, Turkey).
- (6) Ye-Chen Pan, "Dynamic Simulation of Flexible Robots with Prismatic Joints." Completed January 1988. (Co-chair: R.A. Scott). (Senior Engineer, Electronic Data Systems, Troy, MI).
- (5) Reuven Katz, "Dynamics of a Rotating Shaft Subject to Moving Loads, and Its Possible Application in Machining." Completed June 1987. (Co-chair: R.A. Scott). (Associate Research Scientist, Mechanical Engineering Department, University of Michigan, Ann Arbor, MI).
- (4) Aslaug Haraldsdottir, "Performance Improvement by Derivative Feedback in Linear Systems." Completed June 1987. (Co-chair: P.T. Kabamba). (Principal Engineer, Boeing, Seattle, WA).
- (3) Kouros Danai, "An Adaptive Observer for On-Line Tool Wear Estimation in Turning." Completed June 1986. (Professor, Dept. of Mech. Engineering, University of Massachusetts, Amherst, MA).
- (2) Nabil G. Chalhoub, "Control of a Leadscrew Driven Flexible Robot Arm." Completed June 1986. (Professor, Dept. of Mechanical Engineering, Wayne State University, Detroit, MI).

- (1) Leal K. Lauderbaugh, "Implementation of Model Reference Adaptive Force Control in Milling." Completed June 1986. (Associate Professor and Chair, Dept. of Mechanical Engineering, University of Colorado, Colorado Springs, Colorado).

M.S. Thesis Committees Chaired

- (12) Shifang Li, "Modeling and Simulation of a Series Hybrid Vehicle," M.S. Thesis, Expected completion Dec. 2008.
- (11) Jason Ord, "A Model and Controller for a High-Performance Printer Actuator," M. Eng. Practicum Project with HP, Completed August 2006.
- (10) Sung I. Kim, "Robust Machining Force Control with Process Compensation," Completed December 2000 (Co-chair with R. Landers).
- (9) Jorge Sandoval, "Supervisory Control of a Reconfigurable Machine Tool," Completed August 1999 (Co-chair with R. Landers).
- (8) Byunghoon Chung, "Sensitivity Reduction with State Plus State Derivative Feedback in Active Suspensions," Completed May 1999.
- (7) Melih Cakmakci, "Modular Design of DC Servo Motors," Completed May 1999.
- (6) Elaine Chang "Acceleration Feedback in Machine Tool Servo Control," Completed Dec. 1997.
- (5) Ryan Strathearn, "Active Suspension Design and Evaluation Using a Quarter Car Test Rig," Completed Dec. 1996 (Co-chair with H. Peng).
- (4) Douglas Walker, "Input-Output Criterion for Linear Model Order Determination," May 1996 (Co-chair with J.L. Stein).
- (3) Adrian Adamson, "Closed-Loop Dimensional Control in Sheet Metal Forming via the Blank Restraining Force," Completed Dec. 1995.
- (2) Eric Mockenstrum, "Nonlinear Vibrations in Serpentine Drive Systems," Completed Aug. 1993 (Co-chair with N. C. Perkins).
- (1) Mehmet Pakdemirli, "Transverse Vibration of an Axially Accelerating String." M. S. Thesis, Bogazici University, Istanbul, Turkey. Completed July 1987 (Co-chair with A. Ceranoglu).

Post Doctoral Researchers and Visiting Scholars Supervised and Hosted

- (25) Jaspreet S. Dhupia, "Parametric Excitation in Time Delayed Systems," 1/1/07-6/31/08.
- (24) Bartosz S. Powalka, "Nonlinear Dynamic Characterization of Machine Tool Joints," 4/05-12/06.
- (23) H.S. Cho, Visiting Professor, "Sensing and Control of Manufacturing Systems," 10/03-9/04.
- (22) C.W. Lee, Visiting Professor, "Dynamics, Vibrations, and Control," 1/03-12/03.
- (21) R. Rajamani, "Automotive Control Systems," 10/02-12/02.
- (20) K. Yaguchi, Visiting Scholar, "Vibration Isolation," 9/99-8/00.
- (19) Ahmet Yigit, Visiting Scholar, "Machine Tool Vibrations," 8/99-7/00.
- (18) Elzbieta Jarzebowska, Visiting Scholar, "Dynamics of Reconfigurable Mfg. Systems," 2/98-1/99.
- (17) Byeong Hee Kim, Visiting Scholar, "Reconfigurable Machining Systems," 1/98-12/98.
- (16) Yun-Jae Won, Visiting Scholar, "Reconfigurable Machining Systems," 7/97-6/98.
- (15) Robert Landers, Assistant Research Scientist, "Supervisory Control of Machine Tools," 5/97-7/00.
- (14) Moses Mehrabi, Assistant Research Scientist, "Reconfigurable Machining Systems," 1/97-8/02.
- (13) Foued Ben Amara, Post Doctoral Researcher, "Adaptive Disturbance Rejection," 1/97-12/97.
- (12) Mehmet Pakdemirli, Visiting Scholar, "Perturbation Analysis of Axially Moving Elastic Systems," 2/96-7/97.
- (11) David LeBlanc, Post Doctoral Researcher, "Crewman's Associate for Path Control," 7/94-4/97.
- (10) Yansong Shan, Assistant Research Scientist, "A Hierarchical Controller for Real-Time Quality Assurance in Machining," 1/94-12/94.
- (9) Zbigniew Pasek, Assistant Research Scientist and Operations Manager, "Flexible Line Boring, Hierarchical Control of Machine Tools, and Reconfigurable Machining Systems" 8/93-8/05.
- (8) Kunsoo Huh, Post Doctoral Researcher, "Lateral Control of Vehicles," 9/92-2/93.
- (7) Sheng-Jiaw Hwang, Post Doctoral Researcher, "Automotive Serpentine Belt Drive Dynamics," 10/91-8/92.

- (6) Jongjin Park, Post Doctoral Researcher, "Process Control in Turning," 5/90-12/90.
- (5) Ahmet Yigit, Post Doctoral Researcher and Lecturer, "Control of Rigid-Flexible Multibody Systems," 5/88-12/88.
- (4) Kourosh Danai, Post Doctoral Researcher, "Force Measurements in Turning," 5/86-12/86.
- (3) Chong-Won Lee, Visiting Scholar, "Dynamics of Rotating Shafts," 8/84-7/85.
- (2) Jiang-Guang Lun, Visiting Scholar, "Computer Controlled Systems," 1/83-5/83.
- (1) Yi-Ping Chen, Visiting Scholar, "Automation of Manufacturing Processes," 1/81-5/82.

Student Projects Directed

- Chaired or co-chaired over 40 Ph.D and over 10 M.S. dissertation committees.
- Served on over 50 Ph.D. and 10 M.S. dissertation committees as a member.
- Supervised over 40 independent research projects at the M.S. level.
- Supervised over 40 independent research projects at the B.S. level.
- Supervised over 20 postdoctoral researchers and visiting scholars.
- Mentor and course advisor to about 10 graduate students per year.
- Mentor and course advisor to about 15 undergraduate students per year.
- Advised Mechanical Engineering graduate students, as Graduate Program Chair (1987-89)
- Advisor (1990-92) to Whirlpool Fellows (four per year) pursuing M.S. degrees.
- Faculty mentor in Pi Tau Sigma mentoring program
- Advised Program in Manufacturing applicants/students as Director (1993-94, and 1996-98).

Awards to Students Supervised by A.G. Ulsoy

- R. Bis, Best Presentation Award (2nd place), Dynamic Systems and Control Area, Graduate Student Symposium, College of Engineering, University of Michigan, 2008.
- S. Yi, Best Presentation in Session Award at the American Control Conference, 2008.
- Y.S. Lim, Robert M. Caddell Memorial Faculty/Student Achievement Award to A. Galip Ulsoy, Yongseob Lim and Ravi Venugopal, Dept. of Mechanical Engineering, Univ. of Michigan, 2008.
- S. Yi, Best Presentation Award (1st place), Dynamic Systems and Control Area, Graduate Student Symposium, College of Engineering, University of Michigan, 2006.
- R.G. Landers, M. Eugene Merchant Outstanding Young Manufacturing Engineer Award, Society of Manufacturing Engineers, 2004.
- H.K. Fathy, Student Best Paper Award, ASME Dynamic Systems and Control Division, International Mechanical Engineering Congress and Exposition, 2003, Washington, D.C.
- H. Mahmoud, 2002 Distinguished Leadership Award, College of Engineering, Univ. of Michigan.
- L.K. Chen, 2003 Rudolf Kalman Best Paper Award, *ASME J. Dynamic Syst., Meas. Control*, for "Identification of Driver Steering Model, and Model Uncertainty, from Driving Simulator Data."
- H.K. Fathy, Best Presentation Award (1st place), Dynamic Systems and Control Area, Graduate Student Symposium, Mechanical Engineering Department, University of Michigan, 2002.
- F.M. Asl, Best Presentation Award (2nd place), Dynamic Systems and Control Area, Graduate Student Symposium, Mechanical Engineering Department, University of Michigan, 2002.
- H. Mahmoud, Best Presentation in Session Award at the American Control Conference, 2002.
- Z. Pasek, Outstanding Research Scientist Award, College of Engineering, Univ. of Michigan, 2001.
- H. Fathy, Best Presentation Award, Design and Manufacturing Area, Graduate Student Symposium, Mechanical Engineering Department, University of Michigan, 2000.
- F.M. Asl, Best Presentation in Session Award at the American Control Conference, 2000.
- L.K. Chen, Best Presentation in Session Award at the American Control Conference, 1999 and 2002
- C.W. Hsu, Best Presentation in Session Award at the American Control Conference, 1999
- T. Larsson, Harold and Vivian Shapiro Award, Rackham Graduate School, Un. Michigan, 1998.
- B. Chen, Student Best Paper Award Finalist, Dynamic Systems and Control Division, ASME International Mechanical Engineering Congress and Exposition, Nov. 1998.
- S. Jones, Philip R. Marsilius Outstanding Young Manufacturing Engineer Award, Society of Manufacturing Engineers, 1997.

- T. Pilutti, Best Presentation in Session Award at American Control Conference, 1997 and 1995.
- G. Brusher, Best Presentation in Session Award at American Control Conference, 1997 and 1994.
- R. Furness, Philip R. Marsilius Outstanding Young Manufacturing Engineer Award, Society of Manufacturing Engineers, 1996.
- A. Adamson, Caddell Memorial Award, Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, 1995.
- R. Furness, O. Hugo Schuck Best Paper Award, American Automatic Control Council, for the paper "Supervisory Control of Drilling," Co-authors: A. G. Ulsoy, and C. L. Wu, 1994.
- R. Furness, Best Presentation in Session Award at the American Control Conference, 1993.
- A. Yigit, McIvor Award, Applied Mechanics Program, University of Michigan, Ann Arbor, 1987.

RESEARCH

Contributions to Research

Galip Ulsoy has approximately thirty years of research experience in the dynamic modeling, analysis, and control of mechanical systems as a principal investigator (PI) or co-PI on projects totaling over \$90 million. Fundamental areas of emphasis are in computer control systems, adaptive control, and dynamics and control of axially translating or rotating elastic systems. Applications in manufacturing systems (robotics, turning, milling, drilling, sawing), and automotive systems (accessory belt drives, active suspensions, vehicle lateral control) are of particular interest. Galip Ulsoy's award-winning research activities span the full range from basic to applied engineering research and employ analytical, experimental, and numerical methods. He has published over 250 technical articles and received numerous national awards for his research accomplishments, including election in 2006 to the National Academy of Engineering, and the 2008 Rufus T. Oldenburger Medal from ASME International.

Galip Ulsoy is among the pioneers in applying advanced concepts from control and estimation theory to the monitoring and control of manufacturing processes. Major contributions include a model reference adaptive force controller for milling; adaptive tool wear estimation methods using force measurements and computer vision; supervisory controllers for improved hole quality in high production rate drilling while preventing drill breakage. He has also made important contributions to dynamic modeling of drill and bandsaw vibrations and forces; vibration reduction in coordinate measuring machines and flexible manipulators; open-architecture controllers; and control of stamping processes. He is a co-inventor on the patent on reconfigurable manufacturing systems and a key contributor to the development of this internationally-acclaimed new manufacturing paradigm.

Galip Ulsoy's research contributions in automotive systems include pioneering research on the dynamics of automotive accessory drive systems (e.g., serpentine belt systems which drive multiple accessories); active suspension modeling and design; active safety systems for preventing unintended road departure accidents and other "co-pilot" technologies to assist the driver. He is a co-inventor on patents for vehicle yaw rate estimation and emergency vehicle steering via differential braking. Other application areas of interest include computer disk drive systems (including composite disk material and thermal effects), dynamics and control of mineral processing operations (e.g., grinding, flotation and high gradient magnetic separation), and others (e.g., active noise control).

Elastic components, which rotate about, or translate along, a fixed axis include rotating shafts, drill bits, power transmission belts and chains, and bandsaw blades. The vibration and stability of such components are effected by the transport (rotation or translation) speed. Galip Ulsoy's fundamental research contributions in this field include the effects of membrane stresses, modal analysis methods for rotating shafts, coupling between spans in multi-span systems, effects of moving loads and variations in transport speed, parametrically excited vibrations, and vibration localization in both rotating shafts and axially translating beams.

Galip Ulsoy has also made fundamental contributions to control systems design. The use of state derivatives in a feedback control system has been shown to improve sensitivity to parameter variations and to disturbance loads; the coupling between the problems of modeling and controller design has been quantified, and a method for simultaneously performing the modeling and controller design has been presented. A new method, based upon the matrix Lambert W function, has been developed for analysis of systems of linear delay differential equations. Also developed are adaptive methods for rejection of unknown periodic disturbances and design methods for systems with control input saturation.

Grants and Contracts

- (55) "Implementing the "5XME" Workshop Recommendations for Transforming Mechanical Engineering Education and Research," *National Science Foundation*, 1/1/09 – 12/31/10, \$50,000. Project Director: A.G. Ulsoy, Co-PI: K.W. Wang.
- (54) "Ground Robotics Research Center," *U.S. Army TACOM*, 7/1/07 – 6/31/09, \$5,000,000. Center Director: A.G. Ulsoy. Co-PI's: J. Borenstein, J. Laird, H. Peng and D. Tilbury.
- (53) "Design For Swapping Modularity Case Study: A Hybrid-Electric Vehicle," *Ford Motor Company*, 9/1/07 – 8/31/09, \$88,000. Project Director: A.G. Ulsoy.
- (52) "Optimal Co-Design of Controlled Systems and their Controllers," *National Science Foundation*, 1/1/07 – 12/31/09, \$210,000. Project Director: A.G. Ulsoy, Co-PI: P.Y. Papalambros.
- (51) "Development of an Intelligent Computer Aided Stamping System," *Michigan Economic Development Corporation 21st Century Fund*, 1/1/07 - 12/31/09, \$670,000. Project Director: A.G. Ulsoy.
- (50) "The 5XME Workshop and Report: Transforming Mechanical Engineering Education and Research," *National Science Foundation*, 9/1/06 – 8/31/08, \$50,000. Project Director: A.G. Ulsoy.
- (49) "Analysis of Time Delayed Systems via Lambert Functions," *National Science Foundation*, 8/1/06-7/31/09, \$260,000. Project Director: A.G. Ulsoy, Co-PI: P.W. Nelson (Mathematics).
- (48) "Student Summer Support Grant," *H.H. Rackham Graduate School*, 6/1/06 – 8/1/06, \$4,000., Project Director; A.G. Ulsoy, Co-PI: P.W. Nelson.
- (47) "Future Combat Systems (FCS): Phase II Production Planning Study for the Manned Ground Vehicle (MGV)," *US Army*, 6/05-5/06, \$603,000, Project Director: S. Jack Hu, Co-PIs: J. Cristiano, J. Shi, A. Shih, S. Skerlos, and A.G. Ulsoy.
- (46) "Engineering Research Center for Reconfigurable Manufacturing Systems," *National Science Foundation and 25 Industrial Firms*, 8/04-7/07. Second three-year renewal of original center grant. \$16,000,000. Project Director: Y. Koren, Deputy Director: A.G. Ulsoy.
- (45) "Design and Manufacturing for Responsiveness of Military and Commercial Ground Vehicles." *U.S. Army TACOM*, 6/02-4/03, \$150,000, Project Director: A. Galip Ulsoy, Co-PI: S. Jack Hu.
- (44) "System Norms for NVH Design Target Cascading," *Ford Motor Company*, 3/01-12/02, \$97,000. Project Director: P.T. Kabamba, Co-PI: A.G. Ulsoy.
- (43) "Combined Design of Plant and Controller for Automotive Controls," *Ford Motor Company*, 1/01-12/01, \$30,000. Project Director: A.G. Ulsoy, Co-PI: P.Y. Papalambros.
- (42) "Engineering Research Center for Reconfigurable Manufacturing Systems," *National Science Foundation and 25 Industrial Firms*, 8/01-7/04. Three-year renewal of original center grant. \$18,000,000. Project Director: Y. Koren, Deputy Director: A.G. Ulsoy.
- (41) "Vehicle Control Interactions Between Drivers and Active Safety Systems," *U.M. Intelligent Transportation Systems Research Center of Excellence Industrial Advisory Board*, 10/96-9/99, \$222,000. Project Director: A.G. Ulsoy.
- (40) "Engineering Research Center for Reconfigurable Machining Systems," *National Science Foundation and 25 Industrial Firms*, 8/96-7/01. \$15,000,000. Project Director: Y. Koren, Deputy Director: A.G. Ulsoy.
- (39) "Agile Precision Line Boring," *Lamb Technicon and the NIST Advanced Technology Program*, 10/95-12/99, \$997,000. Project Director: Y. Koren, Co-PI: A.G. Ulsoy.

- (38) "Establishment of an Integrated Machining Systems Laboratory," *National Science Foundation*, 3/15/95-3/31/98, \$950,000, Project Director: A.G. Ulsoy.
- (37) "Active Suspension Research," *Ford Motor Company*, 7/95-6/96, \$40,000. Project Director: A.G. Ulsoy, Co-PI: H. Peng.
- (36) "Adaptive Repetitive Control of Nonlinear Discrete-Time Systems," *National Science Foundation*, 11/94-10/97, \$171,123. Project Director: A.G. Ulsoy, Co-PI: P.T. Kabamba.
- (35) "Automotive Research Center," U.S. Army TACOM, 9/94-8/97, \$7,500,000. Project Director: P.Y. Papalambros, One of 15 Co-PI's: A.G. Ulsoy.
- (34) "Stamping Process Modeling, Monitoring, Diagnostics, and Control," *Ford Motor Company*, 4/94-4/97, \$150,000. Project Director: A. G. Ulsoy.
- (33) "ITS Research Center of Excellence," *U.S. Department of Transportation - Federal Highway Administration*, 9/93-9/95, \$1,000,000. Project Director: C. White, One of 23 Co-PI's: A.G. Ulsoy.
- (32) "Adaptive Driver and Vehicle Models," *U.M. Intelligent Transportation Systems Industrial Advisory Board*, 1/94-12/96, \$64,961. Project Director: A.G. Ulsoy, Co-PIs: H. Peng and C. MacAdam.
- (31) "Establishment of a Graduate Research Traineeship Program in Machine Tool Technology," *National Science Foundation*, 10/93-9/98, \$690,745. Project Director: A. G. Ulsoy, Co-PIs: E. Kannatey-Asibu, Y. Koren, J. Ni, and J.L. Stein.
- (30) "The Coalition for New Manufacturing Education," *National Science Foundation*, 10/93-9/96, \$15,000,000. Coalition members are Focus:Hope, University of Detroit Mercy, Central State University, Lawrence Technological University, Lehigh University, University of Michigan, and Wayne State University. Coalition Director: L. Hanafin (University of Detroit), Co-PI's from University of Michigan: M. Parsons, W. Hancock, and A. G. Ulsoy.
- (29) "Hierarchical Controller for Real-Time Quality Control in Machining," *National Science Foundation*, 12/93-11/96, \$548,645. Project Director: A.G. Ulsoy, Co-PIs: Y. Koren and K.G. Shin.
- (28) "A University-Industry-Government Consortium Addressing Basic Automotive Research Issues," *Army Research Office, Tank Automotive Command*, 8/93-10/93, \$53,796. Project Director: A.G. Ulsoy, Co-PI: J. MacBain.
- (27) "Crewman's Associate for Path Control: An Automated Driving Function," *Army Research Office, Tank Automotive Command*, 10/93-9/95, \$661,381. Project Director: R.D. Ervin, Co-PIs: C.C. MacAdam and A.G. Ulsoy.
- (26) "Flexible Line Boring," *Chrysler, Ford, and General Motors, NSF IUCRC Project*, 5/93-4/94, \$130,000. Project Director: A. G. Ulsoy, Co-PIs: Y. Koren and J. Ni.
- (25) "Industrial Partnership Development in Advanced Machining," *Ford Manufacturing Grant Advisory Committee*, 1/93-12/93, \$30,000. Project Director: A.G. Ulsoy.
- (24) "Characterization and Modeling of On-Board Lane Sensing Systems" *Great Lakes Center for Truck and Transportation Research*, 1/93-8/93, \$18,800. Project Director: A.G. Ulsoy.
- (23) "Assessment of Technology Needs of the Machine Tool Industry," *Rand Corporation Critical Technologies Institute*, 11/92-8/93, \$50,000. Project Director: A. G. Ulsoy.
- (22) "Baseline Requirements for Lane Sensing to Avoid Run-Off-Road Accidents," *U.M. Intelligent Vehicle-Highway Systems Industrial Advisory Board*, 1/92-12/93, \$162,097. Project Director: A.G. Ulsoy, Co-PIs: R.D. Ervin and C. MacAdam.
- (21) "Automotive Serpentine Belt Vibrations," *Ford Motor Company*, 10/91-9/93, \$100,000. Co-PIs: N.C. Perkins and A.G. Ulsoy.
- (20) "Coupled Drill Force and Vibration Modeling Including Breakthrough," *General Motors Technical Center*, 1/91-8/92, \$63,975. Project Director: A.G. Ulsoy.
- (19) "Machining Error Diagnostics in Face Milling of AOD and AODI Transmission Parts," *Ford Motor Company*, 6/90-8/90, \$9,968. Co-PIs: A.G. Ulsoy and Y. Koren.
- (18) "Industry/University Cooperative Research Center for Dimensional Measurement and Control in Manufacturing," *National Science Foundation and Various Industrial Firms*, since 6/90, \$700,000.

- approximate annual budget. Center Director: J. Ni (1994-), A. G. Ulsoy (1992-1994) and S.M. Wu (1990-1992).
- (17) "Representation of Complex Drill Geometry in Drill Vibration Models," *General Motors Research Laboratories*, 1/90-12/90, \$43,105. Project Director: A.G. Ulsoy.
 - (16) "Modeling, Analysis and Control of a Metal Cutting System," *University of Michigan Center for Research in Integrated Manufacturing*, 9/89-12/89, \$8,606. Co-PIs: A.G. Ulsoy and Y. Koren.
 - (15) "Computational Tools and a Design Project in Teaching of Introductory Dynamics," *University of Michigan Undergraduate Initiatives Fund*, 1/89-12/89, \$11,757. Project Director: A.G. Ulsoy.
 - (14) "Modeling Methodologies for Machining," *Ford Motor Company*, 8/87-12/91, \$205,000. Co-PIs: J.L. Stein and A. G. Ulsoy.
 - (13) "Process Modeling for Wear and Breakage Detection in Metal Cutting", *National Science Foundation* , 9/86-8/88, \$193,337. Co-PIs: A.G. Ulsoy and Y. Koren.
 - (12) "Modeling of Drill Bit Dynamics," *Industrial Technology Institute*, 9/84-12/85, \$52,781. Project Director: A. G. Ulsoy.
 - (11) "Consortium on Diagnostic Sensing and Control for Metal Cutting," *A Consortium of Industrial Firms*, 1/84-12/86, \$100,000. approx. annual budget. Project Director: A. G. Ulsoy, Co-PI: E. Kannatey-Asibu, Jr.
 - (10) "Adaptive and Sensor Based Control of Machine Tools," *General Motors Corporation*, 6/83-5/85, \$232,000. Co-PIs: J.L. Stein and A. G. Ulsoy.
 - (9) "Optimal Design for Automated Assembly Using Manipulators," *International Business Machines Corporation*, 5/83-4/86, \$331,547. Project Director: R. A. Volz, Co-PIs: P. Papalambros, A. G. Ulsoy, A.C. Woo.
 - (8) "Adaptive Machining Systems," *TRW Foundation Faculty Assistanceship Grant*, 1/83-12/85, \$30,000. Project Director: A.G. Ulsoy.
 - (7) "Capital Equipment and Student Development Funds for Manufacturing," *Society of Manufacturing Engineering Education Foundation*, 5/82-4/83, \$9,250. Project Director: A. G. Ulsoy, Co-PIs: C.S.G. Lee, A. C. Woo, and M. Y. Zarrugh.
 - (6) "Dynamic Modeling and Analysis of Drilling," *University of Michigan Center for Robotics and Integrated Manufacturing*, 9/82-8/83, \$5,200. Project Director: A.G. Ulsoy.
 - (5) "Coordinated Research in Robotics and Integrated Manufacturing," *Air Force Office of Scientific Research*, 9/82-8/85, \$3,500,000. Project Director: D. E. Atkins, one of 15 Co-PIs: A. G. Ulsoy.
 - (4) "Design and Process Optimization for Band Sawing," *University of Michigan Center for Robotics and Integrated Manufacturing*, 2/82-12/82, \$10,667. Co-PIs: A.G. Ulsoy and P. Papalambros.
 - (3) "Adaptive Control of Robot Arms," *University of Michigan Center for Robotics and Integrated Manufacturing*, 1/82-8/82, \$5,000. Co-PIs: Yoram Koren and A. G. Ulsoy.
 - (2) "Variable-Gain Adaptive Control Systems for Machine Tools," *National Science Foundation*, 9/81-3/84, \$166,328. Co-PIs: A.G. Ulsoy and Y. Koren.
 - (1) "Computer-Aided Design of Accessory Drive Systems," *Ford Motor Company*, 1/81-11/81, \$94,561. Co-PIs: A. G. Ulsoy and J. E. Whitesell.

PUBLICATIONS

Citations

As of November 15, 2008 A.G. Ulsoy's h-index was 24 for ISI Science Citation Index database, and was 30 for Google Scholar database, where h-index of N means N papers have received N or more citations.

Articles in Refereed Publications

- (J131) "Improving Component Swapping Modularity using Bi-directional Communication in Networked Control Systems," M. Cakmakci and A.G. Ulsoy, *IEEE/ASME Trans. Mechatronics*, (in press).

- (J130) "Eigenvalue Assignment for Control of Time Delayed Systems Using the Lambert W Function," S. Yi, P.W. Nelson, and A.G. Ulsoy, *J. Vibration and Control*, 2008 (in press).
- (J129) "Identification of Machining Force Model Parameters from Acceleration Measurements," B. Powalka, J.S. Dhupia, A.G. Ulsoy and R. Katz, *Int. J. Manufacturing Research*, 2008, Vol. 3, No. 3, pp 265-284. [Also *Proc. Int. Symp. on Flex. Automation*, Atlanta, GA, June 2008].
- (J128) "Experimental Identification of the Nonlinear Parameters of an Industrial Translational Guide for Machine Performance Evaluation", J.S. Dhupia, B. Powalka, R. Katz and A.G. Ulsoy, *J. Vibration and Control*, Vol. 14, No. 5, May 2008, pp 645-668.
- (J127) "Controllability and Observability of Systems of Linear Delay Differential Equations via the Matrix Lambert W Function," S. Yi, P.W. Nelson, and A.G. Ulsoy, *IEEE Trans. Automatic Control*, Vol. 53, No. 3, April 2008, pp 854-860.
- (J126) "Nonlinear Feed Effect in Machining Chatter Analysis," R.G. Landers and A.G. Ulsoy, *ASME J. Manufacturing Science and Engineering*, Vol. 130, No. 1, Feb. 2008, pp 0110171-0110178. [Also *Proc. IMSEC*, ASME, Atlanta, GA Oct. 2007, pp 17-26].
- (J125) "Survey on Analysis of Time Delayed Systems via the Lambert W Function," S. Yi, P.W. Nelson and A.G. Ulsoy, *Dynamics of Continuous, Discrete and Impulsive Systems (Series A)*, Vol. 14 (S2), 2007, pp 296-301. [Also *Proc. 5th Int. Conf. on Differential Equations and Dynamical Systems*, Edinburg, Texas, Dec. 2006].
- (J124) "Effect of a Nonlinear Joint on the Dynamic Performance of a Machine Tool", J.S. Dhupia, B. Powalka, R. Katz and A.G. Ulsoy, *ASME J. Manufacturing Science and Engineering*, Vol. 129, No. 5, Oct. 2007, pp 943-950.
- (J123) "Describing Function Representation from Measured Nonlinearities in Machine Tools, " J. S. Dhupia, B. Powalka, A.G. Ulsoy and R. Katz, *Trans. of the NAMRI/SME*, Vol. 35, 2007, pp 263-270. [Also presented at *NAMRC 35*, Ann Arbor, MI, May 2007].
- (J122) "Delay Differential Equations via the Matrix Lambert W Function and Bifurcation Analysis: Application to Machine Tool Chatter," S. Yi, P.W. Nelson and A.G. Ulsoy, *Mathematical Biosciences and Engineering*, Vol. 4, No. 2, April 2007, pp 355-368.
- (J121) "Dynamics of the Arch-Type Reconfigurable Machine Tool, " J.S. Dhupia, B. Powalka, R. Katz and A.G. Ulsoy, *Int. J. of Machine Tools & Manufacture*, Vol. 47, No. 2, Feb. 2007, pp 326-334.
- (J120) "Closure to "Discussion of "Analysis of a System of Linear Delay Differential Equations,""" F.M. Asl and A.G. Ulsoy, *ASME J. Dynamic Systems, Measurement and Control*, Vol. 129, No. 1, Jan. 2007, pp123.
- (J119) "Strategic Issues in Sensors and Smart Structures," S.-C. Liu, M. Tomizuka and A.G. Ulsoy, *Structural Control and Health Monitoring*, Vol. 13, No. 6, Nov.-Dec. 2006, pp 946-957. [Also *Proc. 3rd European Conf. on Structural Control: Selected Sectional Key Note Lectures*, 2006].
- (J118) "Experimental Evaluation of a Vehicle Steering Assist Controller Using A Driving Simulator," L.K. Chen and A.G. Ulsoy, *Vehicle System Dynamics*, Vol. 44, No. 3, March 2006, pp 223-245. [Also *Proc. ACC*, Anchorage, Alaska, May 2002].
- (J117) "The Effect of Spindle Speed Variation on Chatter Suppression in Rotating-Tool Machining," C.-J. Li, A.G. Ulsoy, W.J. Endres, *Progress on Advanced Manufacture for Micro/Nano Technology 2005, Materials Science Forum*, Vols. 505-507, Jan. 2006, pp. 859-864. [Also *Proc. Inter. Conf. on Advanced Manufacture*, Taipei, Taiwan, R.O.C., Nov. 28 – Dec. 2, 2005].
- (J116) "Challenges and Opportunities in the Engineering of Intelligent Systems," S.C. Liu, M. Tomizuka, and A.G. Ulsoy, *Smart Structures and Systems*, Vol. 1, No. 1, Jan. 2005, pp 1-12.
- (J115) "Target Management in Complex System Design Using System Norms," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, and G.A. Brusher, *ASME J. of Mechanical Design*, Vol. 127, No. 4, Aug. 2005, pp 536-544.
- (J114) "A Comparison of Model-Based Machining Force Control Approaches," R.G. Landers, A.G. Ulsoy, and Y.H. Ma, *International Journal of Machine Tools and Manufacture*, V. 44, no. 7-8, June 2004, pp 733-748.

- (J113) "Stochastic Optimal Capacity Management in Reconfigurable Manufacturing Systems" F.M. Asl and A.G. Ulsoy, *CIRP Annals*, Vol. 52, No. 1, 2003, pp 371-374.
- (J112) "Analysis of a System of Linear Delay Differential Equations," F.M. Asl and A.G. Ulsoy, *ASME J. Dynamic Systems, Measurement and Control*, Vol. 125, No. 2, June 2003, pp 215-223.
- (J111) "Robust Machining Force Control with Process Compensation," S.I. Kim, R.G. Landers, and A.G. Ulsoy, *ASME J. of Manufacturing Science and Engineering*, Vol. 125, No. 3, Aug. 2003, pp 423-430. [Also *Proc. ASME IMECE*, Nov. 2001].
- (J110) "Effect of Flexible-Tool Rotation on Regenerative Instability in Machining" C.-J. Li, A.G. Ulsoy, and W.J. Endres, *ASME J. of Manufacturing Science and Engineering*, Vol. 125, No. 1, Feb. 2003, pp 39-47. [Also *Proc. ASME IMECE*, Anaheim, CA, Nov. 1998]
- (J109) "Fuzzy Logic Based Virtual Rumble Strip for Road Departure Warning Systems," T. Pilutti, and A.G. Ulsoy, *IEEE Trans. on Intelligent Transportation Systems*, Vol. 4, No. 1, March 2003, pp 1-12. [Also published in *Proc. of the American Control Conference*, Philadelphia, PA, June 1998].
- (J108) "Development of Process Control in Sheet Metal Forming," C.-W. Hsu, A.G. Ulsoy and M.Y. Demeri, *J. of Materials Processing Technology*, Vol. 127, No. 3, Oct. 2002, pp 361-368.
- (J107) "Design of a Vehicle Steering Assist Controller Using Driver Model Uncertainty," L.K. Chen and A.G. Ulsoy, *Int. J. of Vehicle Autonomous Systems*, Vol. 1, No. 1, 2002, pp 111-132.
- (J106) "Optimizing Modular Production in a Reconfigurable Manufacturing System," A.S. Yigit, A.G. Ulsoy, and A. Allahverdi, *J. of Intelligent Manufacturing*, Vol. 13, No. 4, Aug. 2002, pp 309-316.
- (J105) "Trends and Perspectives in Flexible and Reconfigurable Manufacturing Systems," M.G. Mehrabi, A.G. Ulsoy, Y. Koren, and P. Heytler, *J. of Intelligent Manufacturing*, Vol. 13, No.2, April 2002, pp 135-146.
- (J104) "Dynamic Stiffness Evaluation for Reconfigurable Machine Tools Including Weakly Nonlinear Joint Characteristics," A.S. Yigit and A.G. Ulsoy, *Proc. IME, Part B: J. of Engineering Manufacture*, Vol. 216, No. B1, 2002, pp 87-101. [Also *Proc. ASME Biennial Conference on Mechanical Vibration and Noise*, Pittsburgh, PA, Sept. 2001].
- (J103) "Identification of Driver Steering Model, and Model Uncertainty, from Driving Simulator Data," L.K. Chen and A.G. Ulsoy, *ASME J. Dyn. Syst. Meas. Control*, Vol. 123, No. 4, pp 623-629, Dec. 2001. [Also *Proc. of the ASME IMECE*, November 2001]. (2003 Rudolf Kalman Best Paper Award from *ASME J. Dynamic Systems, Measurement and Control*)
- (J102) "Supervisory Control of a Face Milling Operation in Different Manufacturing Environments," R.G. Landers and A.G. Ulsoy, *Transactions on Control, Automation and Systems Engineering*, Vol. 3, No. 1. March 2001, pp1-9.
- (J101) "An Approach for Modeling Sheet Metal Forming for Process Controller Design," C.-W. Hsu, A.G. Ulsoy, and M.Y. Demeri, *ASME J. of Manufacturing Science and Engineering*, Vol. 122, No. 4, Nov. 2000, pp 717-724. [Also *Proc. of the Japan-USA Symposium on Flexible Automation*, July 1998].
- (J100) "Model-Based Machining Force Control," R.G.Landers and A.G.Ulsoy, *ASME J. Dynamic Systems, Measurement and Control*, Vol. 122, No. 3, Sept. 2000, pp 521-527 [Also published in *Proc. of the ASME IMECE*, Orlando, FL, Nov. 2000].
- (J99) "Dynamics of Prestressed Rotating Anisotropic Plates Subject to Transverse Loads and Heat Sources, Part II: Application to a Specially Orthotropic Disk," H. Son, N. Kikuchi, A.G. Ulsoy and A.S. Yigit, *J. of Sound and Vibration*, Vol. 263, No. 3, 21 Sept. 2000, pp 487-504.
- (J98) "Dynamics of Prestressed Rotating Anisotropic Plates Subject to Transverse Loads and Heat Sources, Part I: Modeling and Solution Method," H. Son, N. Kikuchi, A.G. Ulsoy and A.S. Yigit, *J. of Sound and Vibration*, Vol. 263, No. 3, 21 Sept. 2000, pp 457-485.
- (J97) "Reconfigurable Manufacturing Systems and Their Enabling Technologies," M.G. Mehrabi, A.G. Ulsoy, and Y. Koren, *International J. of Manufacturing Technology and Management*, Vol. 1, No. 1, 2000, pp113-130.

- (J96) "Reconfigurable Manufacturing Systems: Key to Future Manufacturing," M.G. Mehrabi, A.G. Ulsoy, and Y. Koren, *J. of Intelligent Manufacturing*, Vol. 11, No. 4, Sept. 2000, pp 403-419. [Also *Proc. of the Japan-USA Symposium on Flexible Automation*, Otsu, Japan, July 1998].
- (J95) "An Input-Output Criterion for Linear Model Deduction," D.G. Walker, J.L. Stein, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 122, No. 3, Sept. 2000, pp 507-513 [Also *Proc. of the ASME IMECE*, Nov. 1996].
- (J94) "Vehicle Dynamics and External Disturbance Estimation for Vehicle Path Prediction," C.-F. Lin, A.G. Ulsoy, and D.J. LeBlanc, *IEEE Trans. on Control System Technology*, Vol. 8, No. 3, May 2000, pp 508-518. [Also *Proc. of the American Control Conf.*, Seattle, WA, June 1995].
- (J93) "Fast Control of Linear Systems Subject to Input Constraints," P.T. Larsson, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 122, No. 1, March 2000, pp18-26. [Also *Proc. of the ASME IMECE*, Anaheim, CA, Nov. 1998].
- (J92) "Adaptive Sinusoidal Disturbance Rejection in Linear Discrete-Time Systems, Part II: Experiments" F. Ben-Amara, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 121, No. 4, Dec. 1999, pp 655-659. [Also *Proc. of the ASME Design Engineering Technical Conference*, Sacramento, CA, Sept. 1997].
- (J91) "Adaptive Sinusoidal Disturbance Rejection in Linear Discrete-Time Systems, Part I: Theory" E. Ben-Amara, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 121, No. 4, Dec. 1999, pp 648-654.
- (J90) "Identification of Driver State for Lane Keeping Tasks," T. Pilutti, and A.G. Ulsoy, *IEEE Trans. on Systems, Man and Cybernetics*, Vol. 29, No. 5, Sept. 1999, pp 486-502.
- (J89) "Reconfigurable Manufacturing Systems," Y. Koren, U. Heisel, F. Jovane, T. Moriwaki, G. Pritchow, A.G. Ulsoy and H. VanBrussel, *CIRP Annals*, Vol. 48, No. 2, 1999, pp. 527-540 (keynote paper).
- (J88) "High-Precision Measurement of Tool-Tip Displacement Using Strain Gauges in Precision Flexible Line Boring," C.-J. Li and A.G. Ulsoy, *Mechanical Systems and Signal Processing*, Vol. 13, No. 4, 1999, pp 531-546. [Also *Proc. of the ASME IMECE*, Nashville, Nov. 1999].
- (J87) "An Approach to Control Input Shaping With Application to Coordinate Measuring Machines," S.D. Jones and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 121, No.2, June 1999, pp 242-247. [Also *Proc. of the American Control Conf.*, Baltimore, Maryland, June 1994].
- (J86) "Lane Geometry Perception and the Characterization of its Associated Uncertainty," C.F. Lin, A.G. Ulsoy, and D.J. LeBlanc, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 121, No. 1, March 1999, pp 1-9. [Also *Proc. of the ASME IMECE*, San Francisco, CA, Nov. 1995].
- (J85) "Vehicle Steering Intervention Through Differential Braking," T. Pilutti, A.G. Ulsoy, and D. Hrovat, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 120, No. 3, Sept. 1998, pp 314-321. [Also *Proc. of the American Control Conf.*, Seattle, WA, June 1995].
- (J84) "Supervisory Machining Control: Design Approach and Experiments," R.G. Landers and A.G. Ulsoy, *CIRP Annals*, Vol. 47, No. 1, 1998, pp 301-306.
- (J83) "Yaw Rate Estimation for Vehicle Control Applications," N. Sivashankar and A.G. Ulsoy, *ASME J. of Dynamics, Measurement, and Control*, Vol. 120, No. 2, June 1998, pp 267-274. [Also *Proc. of the ASME IMECE*, Nov. 1996].
- (J82) "Machining Error Source Diagnostics Using a Turning Process Simulator," S.G. Chen, A.G. Ulsoy, and Y. Koren, *ASME J. of Manufacturing Science and Engineering*, Vol. 120, No. 2, May 1998, pp 409-416. [Also *Proc. of the Japan-USA Symposium on Flexible Automation*, Kobe, Japan, July 1994, pp 275-282].
- (J81) "Vibration Localization in Rotating Shafts, Part II: Experiment," A.G. Ulsoy, C. Pierre and S.H. Choi, *ASME J. of Vibration and Acoustics*, Vol. 120, No. 1, Jan. 1998, pp 149-155. [Also *Proc. of the 15th ASME Biennial Conference on Vibration and Noise*, Boston, MA, Sept. 1995].

- (J80) "Vibration Localization in Rotating Shafts, Part I: Theory," A.G. Ulsoy, C. Pierre and S.H. Choi, *ASME J. of Vibration and Acoustics*, Vol. 120, No. 1, Jan. 1998, pp 138-148. [Also *Proc. of the 15th ASME Conf. on Vibration and Noise*, Boston, MA, Sept. 1995].
- (J79) "Computational Stability Analysis of Chatter in Turning," S.G. Chen, A.G. Ulsoy, Y. Koren, *ASME J. of Manufacturing Science and Engineering*, Vol. 119, No. 4(A), Nov. 1997, pp 457-460. [Also *Proc. of the ASME Winter Annual Meeting, Symposium on Mechatronics*, Nov. 1993, pp 107-112.].
- (J78) "A Comparison of Two Adaptive Algorithms for Disturbance Cancellation," F. Ben-Amara, R. Venugopal, P.T. Kabamba, A.G. Ulsoy, and D.S. Bernstein, *Annual Reviews in Control*, Vol. 21, 1997, pp 67-78. [Also *Proc. of the IFAC 13th World Congress*, San Francisco, CA, July 1996].
- (J77) "Perturbation Analysis of Spindle Speed Variation in Machine Tool Chatter," M. Pakdemirli and A.G. Ulsoy, *J. of Vibration and Control*, Vol. 3, No. 3, Aug. 1997, pp 261-278.
- (J76) "Stability Analysis of an Axially Accelerating String," M. Pakdemirli and A.G. Ulsoy, *J. of Sound and Vibration*, Vol. 203, No. 5, 26 June 1997, pp 815-832.
- (J75) "Design and Analysis of Automotive Serpentine Belt Drive Systems for Steady State Performance," R.S. Beikmann, N.C. Perkins, and A.G. Ulsoy, *ASME J. of Mechanical Design*, Vol. 119, No. 2, June 1997, pp 162-168.
- (J74) "Coupling Between the Modeling and Controller-Design Problems, Part II: Design," G.A. Brusher, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 119, No. 2, June 1997, pp 278-283 [Also *Proc. of the American Control Conference*, Baltimore, Maryland, June 1994].
- (J73) "Coupling Between the Modeling and Controller-Design Problems, Part I: Analysis," G.A. Brusher, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 119, No. 3, Sept. 1997, pp 498-512 [Also *Proc. of the American Control Conference*, Baltimore, Maryland, June 1994].
- (J72) "Warning and Intervention System to Prevent Road-Departure Accidents," D. J. LeBlanc, P. J.Th. Venhovens, C.-F. Lin, T. Pilutti, R.D. Ervin, A.G. Ulsoy, MacAdam, C. and G.E. Johnson, *Vehicle System Dynamics*, Vol. 25, Suppl 1996, pp 383-396. [Also *Proc. of the 14th IAVSD Symposium on Dynamics of Vehicles*, Ann Arbor, MI, Aug. 1995].
- (J71) "CAPC: An Implementation of a Road-departure Warning System," D. J. LeBlanc, R.D. Ervin, G.E. Johnson, P. J.Th. Venhovens, G. Gerber, R. DeSonia, C.-F. Lin, T. Pilutti, and A.G. Ulsoy, *IEEE Control Systems Magazine*, Vol. 16, No. 6, Dec. 1996, pp 61-71. [Also *Proc. of the IEEE Conference on Control Applications*, Dearborn, MI, Sept. 1996].
- (J70) "Nonlinear Coupled Response of Serpentine Belt Drive Systems," R.S. Beikmann, N.C. Perkins, and A.G. Ulsoy, *ASME J. of Vibration and Acoustics*, Vol. 118, No. 4, Oct. 1996, pp 567-574.
- (J69) "Adaptive Vibration Suppression in a Flexible Single-Link Robot," F. Ben-Amara, P.T. Kabamba, and A.G. Ulsoy, *Manufacturing Systems*, Vol. 25, No. 2, 1996, pp 127-132. [Also *Proc. of the 27th CIRP Seminar on Manufacturing Systems*, Ann Arbor, MI, May 1995].
- (J68) "An Open-Architecture Real-Time Controller for Machining Processes," J. Park, Z.J. Pasek, Y. Shan, Y. Koren, K.G. Shin, and A.G. Ulsoy, *Manufacturing Systems*, Vol. 25, No. 1, 1996, pp 23-27 [Also *Proc. of the 27th CIRP Seminar on Manufacturing Systems*, Ann Arbor, MI, May 1995].
- (J67) "Real-Time Open Control Architectures and System Performance," Y. Koren, Z.J. Pasek, A.G. Ulsoy, and U. Benchetrit, *CIRP Annals*, Vol. 45, No. 1, 1996, pp 377-380.
- (J66) "Time To Lane Crossing Calculation and Characterization of its Associated Uncertainty," C. F. Lin, and A.G. Ulsoy, *ITS Journal*, Vol. 3, No. 2, 1996, pp 85-98. [Also *Proc. of the American Control Conf.*, Seattle, WA, June 1995].
- (J65) "A Decision-Support Approach to Machine Tool Concept Evaluation," Z.J. Pasek, J.J. Cristiano, and A.G. Ulsoy, *Manufacturing Systems*, Vol. 25, No. 2, 1996, pp 183-188. [Also *Proc. of the 27th CIRP Seminar on Manufacturing Systems*, Ann Arbor, MI, May 1995].
- (J64) "Statistical Analysis of the Effects of Feed, Speed, and Wear on Hole Quality in Drilling," R.J. Furness, C.L. Wu, and A.G. Ulsoy, *ASME J. of Manufacturing Science and Engineering*, Vol.

- 118, No. 3, Aug. 1996, pp 367-375. [Also *Proc. of the ASME Winter Annual Meeting*, Anaheim, CA, Nov. 1992].
- (J63) "Free Vibration of Serpentine Belt Drive Systems," R.S. Beikmann, N.C. Perkins, and A.G. Ulsoy, *ASME J. of Vibration and Acoustics*, Vol. 118, No. 3, July 1996, pp 406-413.
- (J62) "Stability and Limit Cycles of Parametrically Excited, Axially Moving Strings," E.M. Mockenstrum, N.C. Perkins, and A.G. Ulsoy, *ASME J. of Vibration and Acoustics*, Vol. 118, No. 3, July 1996, pp 346-351 [Also *Proc. of the Symposium on Nonlinear and Stochastic Dynamics*, AMD-Vol. 192/DE-Vol. 78, ASME, Chicago, 1994].
- (J61) "Dimensional Control in Sheet Metal Forming via Active Binder Force Adjustment," A. Adamson, A.G. Ulsoy and M.Y. Demeri, *SME Transactions*, Vol. 24, May 1996, pp 167-178 [Also featured in *SME Manufacturing Engineering Magazine*, July 1996, pp 118-119].
- (J60) "Supervisory Control of Drilling," R.J. Furness, A.G. Ulsoy, and C.L. Wu, *ASME J. of Engineering for Industry*, Vol. 118, No. 1, Feb. 1996, pp 10-19. [Also *Proc. of the American Control Conf.*, San Francisco, CA, June 1993] (1993 O. Hugo Schuck Best Paper Award)
- (J59) "Feed, Speed, and Torque Controllers for Drilling," R.J. Furness, A.G. Ulsoy, and C.L. Wu, *ASME J. of Engineering for Industry*, Vol. 118, No. 1, Feb. 1996, pp 2-9. [Also *Proc. of the American Control Conference*, San Francisco, CA, June 1993].
- (J58) "Complex Geometry, Rotary Inertia and Gyroscopic Moment Effects on Drill Vibrations," D.M. Rincon and A.G. Ulsoy, *J. of Sound and Vibration*, Vol. 188, No. 5, 21 Dec. 1995, pp 701-715 [Also *Proc. of the Japan-USA Symposium on Flexible Automation*, Kobe, Japan, July 1994, pp 1161-1168].
- (J57) "An Optimization Strategy for Maximizing Coordinate Measuring Machine Productivity, Part II: Problem Formulation, Solution and Experimental Results," S.D. Jones and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 117, No. 4, Nov. 1995, pp 610-618. [Also *Proc. of the S.M. Wu Symposium*, Chicago, IL, May 1994].
- (J56) "An Optimization Strategy for Maximizing Coordinate Measuring Machine Productivity, Part I: Quantifying the Effects of Operating Speed on Measurement Quality," S.D. Jones and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 117, No. 4, Nov. 1995, pp 601-609. [Also *Proc. of the S.M. Wu Symposium*, Chicago, IL, May 1994].
- (J55) "Adaptive Band-Limited Disturbance Rejection in Linear Discrete-Time Systems," F. Ben Amara, P.T. Kabamba, and A.G. Ulsoy, *Mathematical Problems in Engineering*, Vol. 1, No. 2, 1995, pp 139-177. [Also *Proc. of the American Control Conference*, Seattle, WA, June 1995].
- (J54) "Vibration Localization in Band/Wheel Systems: Theory and Experiment," A.A.N. Al-jawi, A.G. Ulsoy, and C. Pierre, *J. of Sound and Vibration*, Vol. 179, No. 2, Jan. 1995, pp 289-312. [Also *Proc. of the ASME Vibration Conference*, Sept. 1993].
- (J53) "Vibration Localization in Dual-Span Axially Moving Beams, Part II: Perturbation Analysis," A.A.N. Al-jawi, C. Pierre, and A.G. Ulsoy, *J. of Sound and Vibration*, Vol. 179, No. 2, Jan. 1995, pp 267-287.
- (J52) "Vibration Localization in Dual-Span Axially Moving Beams, Part I: Formulation and Results," A.A.N. Al-jawi, C. Pierre, and A.G. Ulsoy, *J. of Sound and Vibration*, Vol. 179, No. 2, Jan. 1995, pp 243-266. [Also *Proc. of the ASME Vibration Conference*, Sept. 1993].
- (J51) "Force and Motion Control of a Constrained Flexible Robot Arm," F.L. Hu and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 116, No. 3, Sept. 1994, pp 336-343. [Also *Proc. of the American Control Conference*, San Francisco, CA, June 1993].
- (J50) "Effects of Drill Vibrations on Cutting Forces and Torque," D.M. Rincon, and A.G. Ulsoy, *CIRP Annals*, Vol. 43, No. 1, Aug. 1994, pp 59-62.
- (J49) "Dynamic Modeling of Constrained Flexible Robot Arms for Controller Design," F.L. Hu and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 116, No. 1, Mar. 1994, pp 56-65 [Also published as *ASME Paper No. 91-WA-DSC-3*].

- (J48) "Stability Robustness of LQ and LQG Active Suspensions," A.G. Ulsoy, D. Hrovat and T. Tseng, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 116, No. 1, Mar. 1994, pp 123-131.
- (J47) "Serpentine Belt Drive System Rotational Vibration Analysis and Slip Prediction," S.J. Hwang, N.C. Perkins, A.G. Ulsoy, and R. Meckstroth, *ASME J. of Vibration and Acoustics*, Vol. 116, No. 1, Jan. 1994, pp 71-78. [Also *Proc. of the ASME Vibration Conference*, Sept. 1993].
- (J46) "Transverse Vibrations of an Axially Accelerating String," M. Pakdemirli, A. G. Ulsoy, and A. Ceranoglu, *J. of Sound and Vibration*, Vol. 169, No. 2, 13 Jan. 1994, pp 179-196.
- (J45) "Control of Machining Processes," A. G. Ulsoy and Y. Koren, *ASME J. of Dynamic Systems, Measurement and Control*, Special 50th Anniversary Issue, Vol. 115, No. 2(B), June 1993, pp 301-308 (*invited*).
- (J44) "On-Line Flank Wear Estimation Using an Adaptive Observer and Computer Vision, Part II: Experiment," J.J. Park, and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 115, No. 1, Feb. 1993, pp 37-43.
- (J43) "On-Line Flank Wear Estimation Using an Adaptive Observer and Computer Vision, Part I: Theory," J.J. Park, and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 115, No. 1, Feb. 1993, pp 30-36.
- (J42) "On-Line Tool Wear Estimation Using Force Measurement and a Nonlinear Observer," J.J. Park, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 114, No. 4, Dec. 1992, pp 666-672. [Also Stein, J. L., Y. Koren, and J. Holmes (eds.), *Control Issues in Manufacturing Processes*, ASME Booklet DSC-Vol. 18, NY, Dec. 1989, pp 55-64].
- (J41) "Consistent Modeling of Rotating Timoshenko Shafts Subject to Axial Loads," S.H. Choi, C. Pierre, and A.G. Ulsoy, *ASME J. of Vibration and Acoustics*, Vol. 114, No.2, Apr. 1992, pp 249-259. [Also *Proc. of the ASME Vibration Conf.*, Miami, FL, Sept. 1991].
- (J40) "Flank Wear Estimation Under Varying Cutting Conditions," Y. Koren, T.R. Ko, A.G. Ulsoy, and K. Danaj, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 113, No. 2, June 1991, pp 300-307. [Also Stein, J.L., Y. Koren, and J. Holmes (eds.), *Control Issues in Manufacturing Processes*, ASME Booklet DSC-Vol. 18, NY, Dec. 1989, pp 45-54].
- (J39) "Spring-Dashpot Models for the Dynamics of a Radially Rotating Beam with Impact," A. Yigit, A. G. Ulsoy, and R.A. Scott, *J. of Sound and Vibration*, Vol. 142, No. 3, 1990, pp 515-525. [Also *Proc. of the 21st Midwest Mechanics Conference*, Houghton, MI, Aug. 1989].
- (J38) "Experimental Model Validation for a Flexible Robot with a Prismatic Joint," Y.C. Pan, A.G. Ulsoy, and R.A. Scott, *ASME J. of Mechanical Design*, Vol. 112, No. 3, Sept. 1990, pp 315-323.
- (J37) "Dynamic Modeling and Simulation of Flexible Robots with Prismatic Joints," Y.C. Pan, R.A. Scott, and A.G. Ulsoy, *ASME J. of Mechanical Design*, Vol. 112, No. 3, Sept. 1990, pp 307-314.
- (J36) "Effects of Geometric and Process Parameters on Drill Transverse Vibrations," O. Tekinalp, and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 112, No. 2, May 1990, pp 189-194. [Also Kannatey-Asibu, Jr., E., Koren, Y., and J.L. Stein (eds.), *Sensors and Controls for Manufacturing*, ASME Booklet, NY, Nov. 1988].
- (J35) "Control of Linear Systems by Output Proportional Plus Derivative Feedback," A. Haraldsdottir, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 112, No. 1, Mar. 1990, pp 27-34. [Also *Proc. of the American Control Conference*, Minneapolis, Minnesota, June 1987].
- (J34) "Dynamics of a Radially Rotating Beam with Impact, Part 2: Experimental and Simulation Results," A. Yigit, R.A. Scott, and A.G. Ulsoy, *ASME J. of Vibration and Acoustics*, Vol. 112, No. 1, Jan. 1990, pp 71-77. [Also T.S. Sankar *et al* (eds.), *Structural Vibration and Acoustics*, ASME Booklet, NY, Sept. 1989].
- (J33) "Dynamics of a Radially Rotating Beam with Impact, Part 1: Theoretical and Computational Model," A. Yigit, A.G. Ulsoy, and R.A. Scott, *ASME J. of Vibration and Acoustics*, Vol. 112, No. 1, Jan. 1990, pp 65-70 [Also T.S. Sankar *et al* (eds.), *Structural Vibration and Acoustics*, ASME Booklet, NY, Sept. 1989].

- (J32) "Utilization of Control Effort Constraints in Linear Controller Design," A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 111, No. 3, Sept. 1989, pp 378-381. [Also *Proc. of the American Control Conference*, Seattle, WA, June 1986].
- (J31) "Applications of Adaptive Control Theory to Machine Tool Process Control," A.G. Ulsoy, and Y. Koren, *IEEE Control Systems Magazine*, June 1989, Vol. 9, No. 4, pp 33-37.
- (J30) "Modeling and Finite Element Analysis of Drill Bit Vibrations," O. Tekinalp, and A.G. Ulsoy, *ASME J. of Vibration, Acoustics, Stress, and Reliability in Design*, Vol. 111, No. 2, Apr. 1989, pp 148-155 [Also T.S. Sankar *et al* (eds.), *Machinery Dynamics - Applications and Vibration Control Problems*, ASME Booklet, NY, Sept. 1989].
- (J29) "Turning of Slender Workpieces: Modeling and Experiments," R. Katz, C.W. Lee, A.G. Ulsoy, and R.A. Scott, *Mechanical Systems and Signal Processing*, Vol. 3, No. 2, Apr. 1989, pp 195-205. [Also the *Proc. of the Computer Aided Production Engineering Conference*, Ann Arbor, MI, June 1988].
- (J28) "Model Reference Adaptive Force Control in Milling," L.K. Lauderbaugh, and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 111, No. 1, Feb. 1989, pp 13-21. [Also K. Srinivasan (ed.), *Sensors and Controls for Manufacturing*, ASME Booklet, NY, Dec. 1986].
- (J27) "Dynamic Modeling for Control of the Milling Process," L.K. Lauderbaugh, and A.G. Ulsoy, *ASME J. of Engineering for Industry*, Vol. 110, No. 4, Nov. 1988, pp 367-375. [Also Kannatey-Asibu, Jr., E., A.G. Ulsoy, and R. Komanduri (eds.), *Sensors and Controls for Manufacturing*, ASME Booklet, NY, Nov. 1985].
- (J26) "Frequency Versus Time Domain Parameter Estimation: Application to a Slot Milling Operation," O. Turkey and A. G. Ulsoy, *Mechanical Systems and Signal Processing*, Vol. 2, No. 3, July 1988, pp 265-277. [Also Kannatey-Asibu, Jr., E., Koren, Y., and J.L. Stein (eds.), *Sensors and Controls for Manufacturing*, ASME Booklet, NY, Nov. 1988].
- (J25) "The Dynamic Response of a Rotating Shaft Subject to a Moving Load," R. Katz, C.W. Lee, A.G. Ulsoy, and R.A. Scott, *J. of Sound and Vibration*, Vol. 122, No. 1, 1988, pp 131-148.
- (J24) "Modal Analysis of Distributed Parameter Rotating Shafts," C.W. Lee, R. Katz, A.G. Ulsoy, and R.A. Scott, *J. of Sound and Vibration*, Vol. 122, No. 1, 1988, pp 119-130.
- (J23) "Sensitivity Reduction by State Derivative Feedback," A. Haraldsdottir, P.T. Kabamba, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 110, No. 1, Mar. 1988, pp 84-93. [Also published as *ASME Paper No. 86-WA/DSC-2*].
- (J22) "Flexural Motion of a Radially Rotating Beam Attached to a Rigid Body," A. Yigit, R.A. Scott, and A.G. Ulsoy, *J. of Sound and Vibration*, Vol. 121, No. 2, 1988, pp 201-210.
- (J21) "Control of a Flexible Robot Arm: Experimental and Theoretical Results," N.G. Chalhoub, and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 109, No. 4, Dec. 1987, pp 299-309 [Also published as *ASME Paper No. 87-WA/DSC-3*].
- (J20) "A Dynamic State Model for On-Line Tool Wear Estimation in Turning," K. Danai and A.G. Ulsoy, *ASME J. of Engineering for Industry* , Vol. 109, No. 4, Nov. 1987, pp 396-399. [Also Kannatey-Asibu, Jr., E., A.G. Ulsoy, and R. Komanduri (eds.), *Sensors and Controls for Manufacturing* , ASME Booklet, NY, Nov. 1985]
- (J19) "Dynamic Stability and Response of a Beam Subject to a Deflection Dependent Moving Load," R. Katz, C.W. Lee, A.G. Ulsoy, and R.A. Scott, *ASME J. of Vibration, Acoustics, Stress, and Reliability in Design*, Vol. 109, No. 4, Oct. 1987, pp 361-365.
- (J18) "An Adaptive Observer for On-Line Tool Wear Estimation in Turning - Part II: Results," K. Danai and A.G. Ulsoy, *Mechanical Systems and Signal Processing*, Vol. 1, No. 2, Apr. 1987, pp 227-240 [Also *Proc. of the American Control Conf*, Atlanta, GA, June 1988].
- (J17) "An Adaptive Observer for On-Line Tool Wear Estimation in Turning - Part I: Theory," K. Danai and A.G. Ulsoy, *Mechanical Systems and Signal Processing*, Vol. 1, No. 2, Apr. 1987, pp 211-225 [Also *Proc. of the American Control Conf*, Atlanta, GA, June 1988].
- (J16) "Tool Wear and Breakage Detection Using a Process Model," Y. Koren, A.G. Ulsoy, and K. Danai, *CIRP Annals*, Vol. 35, No. 1, Aug. 1986, pp 283-288.

- (J15) "A Model Based Approach for Tool Wear Estimation in Turning," K. Danai and A.G. Ulsoy, *SME Manufacturing Technology Review*, Vol. 1, 1986, pp 49-54. [Also *Proc. of the Sensors 85 Conference*, Detroit, MI, Nov. 1985].
- (J14) "Dynamic Simulation of a Leadscrew Driven Flexible Robot Arm and Controller," N.G. Chalhoub and A.G. Ulsoy, *ASME J. of Dynamic Systems, Measurement and Control*, Vol. 108, No. 2, June 1986, pp 119-126 [Also *Proc. of the American Control Conf.*, San Diego, CA, June 1984].
- (J13) "Coupling Between Spans in the Vibration of Axially Moving Materials," A.G. Ulsoy, *ASME J. of Vibration, Acoustics, Stress and Reliability in Design*, Vol. 108, No. 2, Apr. 1986, pp 207-212.
- (J12) "Design of Belt-Tensioner Systems for Dynamic Stability," A.G. Ulsoy, J.E. Whitesell and M.D. Hooven, *ASME J. of Vibration, Acoustics, Stress and Reliability in Design*, Vol. 107, No. 3, July 1985, pp. 282-290 [Also published as *ASME Paper No. 85-DET-6*].
- (J11) "Programming Optimal Suggestions in the Design Concept Phase: Application to the Boothroyd Assembly Charts," M. Jakiela, P. Papalambros, and A.G. Ulsoy, *ASME J. of Mechanisms, Transmissions, and Automation in Design*, Vol. 107, No. 2, June 1985, pp. 285-291. [Also published as *ASME Paper No. 84-DET-77*].
- (J10) "Efficient Computation of Band Saw Blade Stresses," J.E. Borchelt, A.G. Ulsoy, and P. Papalambros, *ASME J. of Mechanisms, Transmissions, and Automation in Design*, Vol. 106, No. 3, Sept. 1984, pp. 394-400. [Also published as *ASME Paper No. 83-DET-66*].
- (J9) "Dynamic Modeling of Transverse Drill Bit Vibrations," A.G. Ulsoy and O. Tekinalp, *CIRP Annals*, Vol. 33, No. 1, Aug. 1984, pp 253-258.
- (J8) "Vibration Control in Rotating or Translating Elastic Systems," A.G. Ulsoy, *ASME J. of Dynamic Systems Measurement and Control*, Vol. 106, No. 1, Mar. 1984, pp. 6-14. [Also published as *ASME Paper No. 83-WA/DSC-9*].
- (J7) "Principal Developments in the Adaptive Control of Machine Tools," A.G. Ulsoy, Y. Koren and F. Rasmussen, *ASME J. of Dynamic Systems, Measurement, and Control*, Vol. 105, No. 2, June 1983, pp. 107-112. [Also *Measurement and Control for Batch Manufacturing*, D.E. Hardt (ed.), ASME Booklet, NY, Nov. 1982.]
- (J6) "A Theoretical Analysis and Control Study of Open-Circuit Grinding," G.T. Adel, A.G. Ulsoy and K.V.S. Sastry, *Inter. J. of Mineral Processing*, Vol. 10, 1983, pp. 25-43.
- (J5) "Vibration of Wide Band Saw Blades," A.G. Ulsoy and C.D. Mote, Jr., *ASME J. of Engineering for Industry*, Vol. 104, No. 1, Feb. 1982, pp.71-78.
- (J4) "Principal Developments in the Automatic Control of Mineral Processing Systems," A.G. Ulsoy and K.V.S. Sastry, *CIM Bulletin*, Vol. 74, No. 836, Dec. 1981, pp. 43-53.
- (J3) "Analysis of Band Saw Vibrations," A.G. Ulsoy and C.D. Mote, Jr., *Wood Science*, Vol. 13, No. 1, July 1980, pp. 1-10. [Also the *Proc. of the 6th Wood Machining Seminar*, Richmond, CA, Oct. 1979] (*1979 Wood Award*)
- (J2) "Band Saw Vibration and Stability," A.G. Ulsoy and C.D. Mote, Jr., *Shock and Vibration Digest*, Vol. 10, No. 11, Nov. 1978, pp. 3-15.
- (J1) "Principal Developments in Band Saw Vibration and Stability Research," A.G. Ulsoy, C.D. Mote, Jr. and R. Szymani, *Holz Als Roh- und Werkstoff*, Vol. 36, No. 7, July 1978, pp 273-280.

Refereed Conference Papers

- (C134) "Co-Design of a MEMS Actuator and its Controller using Frequency Constraints," D.L. Peters, K. Kurabayashi, P.Y. Papalambros, A.G. Ulsoy, *Proc. ASME Dynamic Systems and Control Conference*, Ann Arbor, MI, October 2008.
- (C133) "Eigenvalues and Sensitivity Analysis for a Model of HIV-1 Pathogenesis with an Intracellular Delay," S. Yi, P.W. Nelson, A.G. Ulsoy, *Proc. ASME Dynamic Systems and Control Conference*, Ann Arbor, MI, October 2008.
- (C132) "A Multi-Input, Multi-Output Model for Stamping Process Control," Y.S. Lim, R. Venugopal, A.G. Ulsoy, *Proc. Int. Symposium on Flexible Automation*, Atlanta, GA, June 2008.

- (C131) "Analysis and Control of Time Delayed Systems via the Lambert W Function," S. Yi, P.W. Nelson, A.G. Ulsoy, *Proc. IFAC World Congress*, Seoul Korea, July 2008.
- (C130) "Advances in the Control of Stamping Processes," Y.S. Lim, R. Venugopal, A.G. Ulsoy, *Proc. IFAC World Congress*, Seoul Korea, July 2008.
- (C129) "Robust Control and Time-Domain Specifications for Systems of Delay Differential Equations via Eigenvalue Assignment," S. Yi, P.W. Nelson, and A.G. Ulsoy, *Proc. American Control Conference*, Seattle, June 2008.
- (C128) "Nonlinear Feed Effect in Machining Chatter Analysis," R.G. Landers and A.G. Ulsoy, *Proc. ASME MSEC*, Atlanta, Georgia, October 2007.
- (C127) "Feedback Control via Eigenvalue Assignment for Time delayed Systems Using the Lambert W Function," S. Yi, P.W. Nelson and A.G. Ulsoy, *Proc. ASME Int. Design Engineering Technical Conf.*, Las Vegas, NV, Sept. 2007, pp 783-792.
- (C126) "Combined Design and Robust Control of Vehicle Active/Passive Suspension," S.F. Alyaout, P.Y. Papalambros and A.G. Ulsoy, *Proc. European Control Conference*, Kos, Greece, July 2007.
- (C125) "Coupling in Design and Robust Control Optimization," S.F. Alyaout, P.Y. Papalambros and A.G. Ulsoy, *Proc. European Control Conference*, Kos, Greece, July 2007.
- (C124) "Controllability and Observability of Systems of Delay Differential Equations via the Matrix Lambert W Function," S. Yi, P.W. Nelson and A.G. Ulsoy, *Proc. American Control Conference*, New York, NY, July 2007.
- (C123) "Design of Modular Controllers for Systems with Smart Networked Components," M. Cakmakci and A.G. Ulsoy, *4th Int. Conf. on Design and Production of Machines and Dies/Molds*, Cesme, Turkey, June 2007.
- (C122) "Solution of Systems of Linear Delay Differential Equations via Laplace Transformation," S. Yi, A. G. Ulsoy, P.W. Nelson, *Proc. IEEE CDC*, San Diego, CA, Dec. 2006.
- (C121) "Combined Robust Design and Robust Control of an Electric DC Motor," S.F. Alyaout, P.Y. Papalambros and A.G. Ulsoy, *Proc. ASME IMECE*, Chicago, IL, Nov. 2006.
- (C120) "Self-Reproducing Machines: Preventing Degeneracy," P.D. Owens and A.G. Ulsoy, *Proc. ASME IMECE*, Chicago, IL, Nov. 2006.
- (C119) "Experimental Identification of the Nonlinear Parameters of an Industrial Translational Guide," J. S. Dhupia, B. Powalka, A.G. Ulsoy and R. Katz, *Proc. ASME IMECE*, Chicago, IL, Nov. 2006.
- (C118) "Chatter Stability Analysis Using the Matrix Lambert Function and Sturm Sequences," S. Yi, P.W. Nelson and A.G. Ulsoy, *Proc. ASME Int. Conf. on Manufacturing Science and Engineering*, Ypsilanti, MI, Oct. 2006.
- (C117) "Improving Component Swapping Modularity using Bi-directional Communication in Networked Control Systems" M. Cakmakci and A.G. Ulsoy, *Proc. Int. Symposium on Flexible Automation*, Osaka, Japan, July 2006.
- (C116) "Effect of a Nonlinear Joint on the Dynamic Performance of a Machine Tool," J. Dhupia, B. Powalka, A.G. Ulsoy, R. Katz, *Proc. CIRP - 2nd Int. Conf. on High Performance Cutting*, Vancouver, Canada, June 2006.
- (C115) "Solution of a System of Linear Delay Differential Equations," S. Yi and A.G. Ulsoy, *Proc. American Control Conference*, Minneapolis, MN, June 2006.
- (C114) "Quantification and Use of System Coupling in Decomposed Design Optimization Problems," S.F. Alyaout, P.Y. Papalambros, A.G. Ulsoy, *Proc. ASME IMECE*, Orlando, FL, Nov. 2005.
- (C113) "Statistical Analysis of a Steering Assist Controller Using Driving Simulator Data," L.K. Chen, A.G. Ulsoy, *Proc. ASME IMECE*, Orlando, FL, Nov. 2005.
- (C112) "Solution of Systems of Linear Delay Differential Equations via Lambert Functions," F.M. Asl and A.G. Ulsoy, *Proc. ASME DETC*, Long Beach, CA, Sept. 2005.
- (C111) "Dynamics of the Arch-Type Reconfigurable Machine Tool," A.G. Ulsoy, *CIRP General Assembly, STC-M*, Antalya, Turkey, Aug. 2005.
- (C110) "A 21st Century Engineering Education for Leading Concurrent Discovery and Innovation," A.G. Ulsoy, *Proc. CIRP General Assembly*, Antalya, Turkey, Aug. 2005. (invited keynote paper).

- (C109) "Probabilistic Robust Parallel Design of the Subsystems Constituting a Complex System," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, G.A. Brusher, *Proc. 16th IFAC World Congress*, Prague, Czech Republic, July 2005.
- (C108) "Bidirectional Communication Among "Smart" Components in a Networked Control System," M. Cakmakci, A.G. Ulsoy, *Proc. American Control Conference*, Portland, OR, June 2005.
- (C107) "Robust Parallel Design of the Subsystems Constituting a Complex System," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, G.A. Brusher, *Proc. American Control Conference*, Portland, OR, June 2005.
- (C106) "Dynamics of the Arch-Type Reconfigurable Machine Tool," J.S. Dhupia, B. Powalka, R. Katz, A.G. Ulsoy, *Proc. 3rd CIRP Conf. Reconfigurable Manufacturing*, Ann Arbor, MI, May 2005.
- (C105) "Application of Robust Design Techniques, to the Parallel Design of Engineering Systems" H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, G.A. Brusher, *Proc. ASME IMECE*, Anaheim, CA, Nov. 2004.
- (C104) "Strategic Issues in Sensors and Smart Structures," S.C. Liu, M. Tomizuka, and A.G. Ulsoy, *Proc. 3rd European Conference on Structural Control*, Vienna, Austria, July 2004, pp. M3-9 - M3-12.
- (C103) "Target Management in Complex System Design Using System Norms," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, G.A. Brusher, *Proc. Japan-USA Symposium on Flexible Automation*, Denver, CO, July 2004.
- (C102) "Challenges and Opportunities in the Engineering of Intelligent Systems," S.C. Liu, M. Tomizuka, and A.G. Ulsoy, *Proc. 4th International Workshop on Structural Control*, Columbia University, New York, NY, June 2004, pp295-304.
- (C101) "Optimal Capacity Management with Stochastic Market Demand and Imperfect Information," E.A. Asl, A.G. Ulsoy, *Proc. ASME IMECE*, Washington, D.C., November 2003.
- (C100) "Integrated Plant, Observer and Controller Optimization with Application to Combined Passive/Active Automotive Suspensions," H.K. Fathy, P.Y. Papalambros, A.G. Ulsoy, *Proc. ASME IMECE*, Washington, D.C., November 2003.
- (C99) "Managing Subsystem Targets in Multi-Disciplinary Systems Design Using System Norms," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, G.A. Brusher, *Proc. ASME IMECE*, Washington, D.C., November 2003.
- (C98) "Optimal Capacity Management in Reconfigurable Manufacturing Systems," F.M. Asl and A.G. Ulsoy, *Proc. CIRP 2nd International Conference on Reconfigurable Manufacturing*, Ann Arbor, MI, August 2003.
- (C97) "Nested plant/controller optimization and its application to combined passive/active automotive suspensions," H.K. Fathy, D. Hrovat, P.Y. Papalambros and A.G. Ulsoy, *Proc. American Control Conf.*, Denver, CO, June 2003.
- (C96) "Ranking Subsystem Targets According to their Influence on System Performance," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, and G.A. Brusher, *Proc. American Control Conf.*, Denver, CO, June 2003.
- (C95) "Stochastic Capacity Control with Different Delay Times for Expansion and Reduction," F.M. Asl and A.G. Ulsoy, *Proc. American Control Conf.*, Denver, CO, June 2003.
- (C94) "Stochastic Capacity Control with Economy of Scale in Management Costs," F.M. Asl and A.G. Ulsoy, *Proc. American Control Conf.*, Denver, CO, June 2003.
- (C93) "Target Reduction and Balancing Using System Norms: Application to Vehicle Design," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy and G.A. Brusher, *Proc. ASME IMECE*, New Orleans, November 2002.
- (C92) "Nested Optimization of an Elevator and its Gain-Scheduled LQG Controller," H.K. Fathy, S.A. Bortoff, G.S. Copeland, P.Y. Papalambros and A. G. Ulsoy, *Proc. ASME IMECE*, New Orleans, November 2002.

- (C91) "Capacity Management in Reconfigurable Manufacturing Systems with Non-Stationary Stochastic Market Demand," F.M. Asl and A.G. Ulsoy, *Proc. ASME IMECE*, New Orleans, November 2002.
- (C90) "Reconfigurable Machining Systems, a Tool for Competitiveness," Y. Koren and A.G. Ulsoy, Global Powertrain Conference, Ann Arbor, MI, September 2002.
- (C89) "Capacity Management via Feedback Control in Reconfigurable Manufacturing Systems," F.M. Asl and A.G. Ulsoy, *Proc. of the Japan-USA Symposium on Flexible Automation*, Hiroshima, Japan, July 2002.
- (C88) "Vehicle Active Safety Systems for Preventing Road Departure Accidents, A.G. Ulsoy, *Proc. Conf. on Engineering Systems Design and Analysis*, Istanbul, Turkey, July 2002.
- (C87) "Experimental Evaluation of Steering Assist Controllers on a Driving Simulator," L.K. Chen and A.G. Ulsoy, *Proc. American Control Conf.*, Anchorage, AK, May 2002.
- (C86) "Target Reduction and Balancing Using System Norms," H.A. Mahmoud, P.T. Kabamba, A.G. Ulsoy, and G.A. Brusher, *Proc. American Control Conf.*, Anchorage, AK, May 2002.
- (C85) "NSF Engineering Research Center for Reconfigurable Machining Systems," Y. Koren, A.G. Ulsoy, B.-K. Min, Z.J. Pasek and D. Yip-Hoi, *Proc. 2002 NSF Design, Manufacturing and Industrial Innovation Research Conf.*, Jan. 2002.
- (C84) "Comparison of Combined Embodiment Design and Control Optimization Strategies Using Optimality Conditions," J.A. Reyer, H.K. Fathy, P.Y. Papalambros, and A.G. Ulsoy, *Proc. of the DETC'01*, Pittsburgh, PA September 2001.
- (C83) "On the Coupling Between the Plant and Controller Optimization Problems," H.K. Fathy, P.Y. Papalambros, J.A. Reyer, and A.G. Ulsoy, *Proc. of the American Control Conf.*, Arlington, Virginia, June 2001.
- (C82) "NSF Engineering Research Center for Reconfigurable Machining Systems," Y. Koren, A.G. Ulsoy, R.G. Landers, M. Mehrabi, A. Pasek and D. Yip-Hoi, *Proc. 2001 NSF Design, Manufacturing and Industrial Innovation Research Conf.*, Jan. 2001.
- (C81) "Reconfigurable Machine Tools and Reconfigurable Systems," Y. Koren and A.G. Ulsoy, *Proc. of the 9th Inter. Machine Tool Engineers' Conf.*, Tokyo, Japan, October 2000, pp180-189 (pp46-57 in Japanese) (*invited plenary paper*).
- (C80) "Robust Smith Predictor for Vehicle Steering Assist Control," L.K. Chen and A.G. Ulsoy, *Proc. AVEC 2000*, Ann Arbor, MI, August 2000.
- (C79) "Quantification of Coupling for Modular Design Problems," M. Cakmakci and A.G. Ulsoy, *Proc. of the Japan-USA Symposium on Flexible Automation*, Ann Arbor, July 2000.
- (C78) "Design of Vibration Isolation Systems for Reconfigurable Precision Equipment," A.S. Yigit and A.G. Ulsoy, *Proc. of the Japan-USA Symposium on Flexible Automation*, Ann Arbor, MI, July 2000.
- (C77) "Dynamic Modeling and Stability of the Reconfiguration of Manufacturing Systems," F.M. Asl, A.G. Ulsoy and Y. Koren, *Proc. of the Japan-USA Symposium on Flexible Automation*, Ann Arbor, MI, July 2000.
- (C76) "Optimization of the Reference Punch Force Trajectory for Process Control in Sheet Metal Forming," C.W. Hsu, A.G. Ulsoy and M.Y. Demeri, *Proc. of the Japan-USA Symposium on Flexible Automation*, Ann Arbor, MI, July 2000.
- (C75) "Analytical Solution of a System of Homogenous Delay-Differential Equations via the Lambert Function," F.M. Asl, and A.G. Ulsoy, *Proc. of the American Control Conference*, Chicago, IL, June 2000.
- (C74) "NARMAX Models of Drivers," L.K. Chen, and A.G. Ulsoy, *Proc. of the American Control Conference*, Chicago, IL, June 2000.
- (C73) "Application of Real-Time Process Control in Sheet Metal Forming," M.Y. Demeri, C.W. Hsu and A.G. Ulsoy, International Conference on New Developments in Sheet Metal Forming, Stuttgart, Germany, May 2000.

- (C72) "High Performance Design of Controllers in the Presence of Saturation and Uncertainty," P.T. Larsson, and A.G. Ulsoy, *Proc. of the American Control Conference*, San Diego, CA, June 1999, pp 197-201.
- (C71) "Driver Model Uncertainty," L.K. Chen, and A.G. Ulsoy, *Proc. of the American Control Conference*, San Diego, CA, June 1999, pp 714-718.
- (C70) "Process Controller Design for Sheet Metal Forming," C.W. Hsu, A.G. Ulsoy, and M.Y. Demeri, *Proc. of the American Control Conference*, San Diego, CA, June 1999, pp 192-196.
- (C69) "Improvement of Consistency in Stamped Parts Through Process Control," C.W. Hsu, M.Y. Demeri and A.G. Ulsoy, *Proc. of the TMS Annual Meeting*, San Diego, CA, Feb. 1999.
- (C68) "NSF Engineering Research Center for Reconfigurable Machining Systems," Y. Koren, and A.G. Ulsoy, *Proc. of the NSF Grantees Conf.*, Long Beach, CA, Jan. 1999.
- (C67) "Scaling Speed of Response Using LQR Design," P.T. Larsson and A.G. Ulsoy, *Proc. of the IEEE Conference on Decision and Control*, Tampa, FL, Dec. 1998.
- (C66) "Modular Control for Machine Tools: Cross-Coupling Control with Friction Compensation," B.C. Chen, D.M. Tilbury, and A.G. Ulsoy, *Proc. of the ASME IMECE*, Anaheim, CA, Nov. 1998.
- (C65) "Creating a Complete Environment for Excellence in Manufacturing Education," J. Bean and A.G. Ulsoy, *Proc. of the SME Inter. Conf. on Education in Manufacturing*, San Diego, CA, Oct. 1998.
- (C64) "NSF Engineering Research Center for Reconfigurable Machining Systems," Y. Koren, and A.G. Ulsoy, *Proc. of the NSF Grantees Conf.*, Monterrey, Mexico, Jan. 1998.
- (C63) "Robust Adaptive Sinusoidal Disturbance Rejection in Linear Continuous-Time Systems," F. Ben-Amara, P.T. Kabamba, and A.G. Ulsoy, *Proc. of the IEEE Conference on Decision and Control*, San Diego, CA, Dec. 1997.
- (C62) "Supervisory Machining Control on An Open-Architecture Platform," R.G. Landers and A. G. Ulsoy, *Proc. of the CIRP*, Istanbul, June 1997.
- (C61) "Identification of Driver State for Lane-Keeping Tasks: Experimental Results" T. Pilutti, and A.G. Ulsoy, *Proc. of the American Control Conference*, Albuquerque, NM, June 1997.
- (C60) "A Novel Active Suspension Design Technique - Simulation and Experimental Results," H. Peng, R. Strathearn, and A.G. Ulsoy, *Proc. of the American Control Conf.*, Albuquerque, NM, June 1997.
- (C59) "Trade-offs Between Performance Specifications, Uncertainty and Admissible Models," G.A. Brusher, P.T. Kabamba, and A.G. Ulsoy, *Proc. of the American Control Conf.*, Albuquerque, NM, June 1997.
- (C58) "Real-Time Open Architecture Machining System" A.G. Ulsoy, Y. Koren, and K.G. Shin, *Proc. of the NSF Grantees Conf.*, Seattle, WA, Jan. 1997.
- (C57) "NSF Engineering Research Center for Reconfigurable Machining Systems" Y. Koren, and A.G. Ulsoy, *Proc. of the NSF Grantees Conf.*, Seattle, WA, Jan. 1997.
- (C56) "Adaptive Repetitive Control of Nonlinear Discrete-Time Systems," A.G. Ulsoy, and P.T. Kabamba, *Proc. of the NSF Grantees Conf.*, Seattle, WA, Jan. 1997.
- (C55) "Chatter Analysis of Machining Systems with Nonlinear Force Processes," R.G. Landers, A.G. Ulsoy, *Proc. of the ASME IMECE*, Atlanta, GA, Nov. 1996.
- (C54) "Timing and Performance of Open Architecture Controllers," Y. Koren, Z.J. Pasek, A.G. Ulsoy, and P.K. Wright, *Proc. of the ASME IMECE*, Atlanta, GA, Nov. 1996.
- (C53) "Machining Force Control Including Static Nonlinear Effects," R.G. Landers and A.G. Ulsoy, *Proc. of the Japan-USA Symposium on Flexible Automation*, Boston, MA, July 1996.
- (C52) "The Effect of Binder Force Profile On The Formability of AA6111 Sheet," M.Y. Demeri, A. Hall, A. Adamson, and A.G. Ulsoy, *Proc. of the Japan Institute of Metals Conf.*, Hawaii, Dec. 1995.
- (C51) "A Warning and Intervention System to Prevent Road Departure Accidents," D.J. LeBlanc, P.J.Th. Venhovens, T.E. Pilutti, C.-F. Lin, R.E. Ervin, A.G. Ulsoy, C.C. MacAdam, and G.E.

- Johnson, in Segele, L. (ed.), *The Dynamics of Vehicle on Roads and Tracks, Proc. of the 14th IAVSD Symposium*, Ann Arbor, MI, Aug. 1995.
- (C50) "On-Line Identification of Driver State for Lane-Keeping Tasks" T.E. Pilutti, and A.G. Ulsoy, *Proc. of the American Control Conference*, Seattle, WA, June 1995.
- (C49) "An Open-Architecture Testbed for Real-Time Monitoring and Control of Machining Processes," J. Park, Z.J. Pasek, Y. Koren, K.G. Shin, A.G. Ulsoy, and Y. Shan, *Proc. of the American Control Conf.*, Seattle, WA, June 1995.
- (C48) "Parametrically Excited Vibrations of Automotive Belts," E. Mockenstrum, N.C. Perkins, and A.G. Ulsoy, *Proc. of the Vibration and Noise Conf.*, Stafford, England, 1995.
- (C47) "Cutting Force Variations Due To Drill Vibrations," D.M. Rincon and A.G. Ulsoy, *Proc. of the Symp. on the Physics of Machining*, ASME Winter Annual Meeting, Chicago, IL, Nov. 1994.
- (C46) "An Intervention Form of Path Warning and Control," R.E. Ervin, A.G. Ulsoy, C. F. Lin, C.C. MacAdam, H. Peng, T.E. Pilutti, P. Venhovens, D. Symanow, *Proc. of the 21st Annual Association for Unmanned Vehicle Systems (AUVS) Technical Symposium and Exhibition*, Detroit, MI, May 1994 (invited).
- (C45) "An Adaptive Assembly System for Automotive Applications," Z.J. Pasek and A.G. Ulsoy, *Proc. of the S. M. Wu Symposium*, Chicago, IL, May 1994.
- (C44) "Prediction of the Resultant Contouring Force in Metal Cutting on a Lathe," by S.G. Chen, A.G. Ulsoy, Y. Koren, *Proc. of the ASME Winter Annual Meeting*, Symposium on Mechatronics, Nov. 1993, pp 113-117.
- (C43) "The Coupled Modeling and Robust Control Design Problem," G.A. Brusher, P.T. Kabamba, and A.G. Ulsoy, *Proc. of the IEEE Conf. on Decision and Control*, Dec. 1992.
- (C42) "Dynamics of Prestressed, Translating or Rotating, Anisotropic Plates Subject to Transverse Loads and Heat Sources," H. Son, N. Kikuchi, and A.G. Ulsoy, ASME Winter Annual Meeting, Anaheim, CA, Nov. 1992.
- (C41) "Quantification of the Coupling Between the Modeling and Control-Design Problems," G.A. Brusher, P.T. Kabamba, A.G. Ulsoy, Symposium on Automated Modeling, *ASME Winter Annual Meeting*, Anaheim, CA, Nov. 1992.
- (C40) "Modeling, Simulation, and Analysis of Regenerative Chatter in Turning Using the β Domain Formulation," S.G. Chen, A.G. Ulsoy, and Y. Koren, *Proc. of the IFAC Workshop on Intelligent Manufacturing Systems*, Dearborn, MI, Oct. 1992.
- (C39) "Free Vibration Analysis of Automotive Serpentine Belt Accessory Drive Systems," R. Beikmann, N.C. Perkins, and A.G. Ulsoy, *Proc. of the CSME Transport 1992+ Conf.*, Montreal, Canada, June 1992.
- (C38) "Dynamic Modeling of the Thrust Force and Torque for Drilling," R. Furness, C.W. Wu, and A.G. Ulsoy, *Proc. of the American Control Conf.*, Chicago, IL, June 1992.
- (C37) "Equilibrium Analysis of Automotive Serpentine Belt Drive Systems Under Steady Operating Conditions," R.S. Beikmann, N.C. Perkins and A.G. Ulsoy, *Proc. of the Midwest Mechanics Conf.*, Rolla, Missouri, Oct. 1991.
- (C36) "Controller Design via System Identification," A.G. Ulsoy, *Proc. of the American Control Conf.*, Boston, MA, June 1991.
- (C35) "On-Line Flank Wear Estimation Using Adaptive Observers," J.J. Park and A.G. Ulsoy, *ASME Winter Annual Meeting*, Dallas, TX, Nov. 1990.
- (C34) "Experimental Modeling of Robot Manipulators with Actuator Dynamics for Force and Motion Control," A. Muga, A.G. Ulsoy, and N.H. McClamroch, *Proc. of the IEEE Inter. Workshop on Intelligent Motion Control*, Istanbul, Turkey, Aug. 1990.
- (C33) "Dynamic Modeling of a Self-Locking Leadscrew and its Implication in Robotics," N.G. Chalhoub and A.G. Ulsoy, *Proc. of the American Control Conf.*, San Diego, CA, May 1990.
- (C32) "Stability Robustness of LQG Active Suspensions," A.G. Ulsoy and D. Hrovat, *Proc. of the American Control Conf.*, San Diego, CA, May 1990 (invited).

- (C31) "Identification of the Normal Force Response to Feed Input in a Turning Operation," R. Furness and A.G. Ulsoy, *Proc. of the American Control Conf.*, San Diego, CA, May 1990 (*invited*).
- (C30) "Controller Design for Rigid-Flexible Multibody Systems," A. Yigit, and A.G. Ulsoy, *Proc. of the Conf. on Decision and Control*, Tampa, FL, Dec. 1989, pp 665-673.
- (C29) "Estimation of Time-Varying Parameters in Discrete-Time Dynamic Systems: A Tool Wear Estimation Example," A.G. Ulsoy, *Proc. of the American Control Conf.*, Pittsburgh, PA, June 1989 (*invited*).
- (C28) "Force and Motion Control in Constrained Dynamical Systems With Dissipative Constraints," K.C. Shin, P.T. Kabamba, and A.G. Ulsoy, *ASME Paper No. 88-WA/DSC-8*, ASME Winter Annual Meeting, Nov. 1988.
- (C27) "Dynamic Modeling of Cutting Forces in Turning, Drilling, and Milling from Experimental Data," K. Danai, and A.G. Ulsoy, *ASME Winter Annual Meeting*, Chicago, IL, Nov. 1988.
- (C26) "Experimental Results in Modeling, Analysis, and Control of Flexible Multi-Body Systems," A.G. Ulsoy, *Proc. of the 5th Annual NASA/UCLA SCOPE Workshop*, Lake Arrowhead, CA, Oct. 1988.
- (C25) "Experimental Validation of Flexible Robot Arm Modeling and Control," A.G. Ulsoy, *Proc. of the NASA Workshop on Computational Aspects in the Control of Flexible Systems*, Williamsburg, Virginia, July 1988.
- (C24) "Simulation of Flexible Structures With Impact: Experimental Validation," A.G. Ulsoy, *Proc. of the NASA Workshop on Computational Aspects in the Control of Flexible Systems*, Williamsburg, Virginia, July 1988.
- (C23) "Experimental Investigation of a Cutting Force Model for Turning of Slender Workpieces", R. Katz, C.W. Lee, A. G. Ulsoy, and R. A. Scott, The 3rd Inter. Conf. on Computer Aided Production Engineering, Ann Arbor, MI, June 1988.
- (C22) "Modeling of Drill Bit Transverse Vibrations," O. Tekinalp, and A.G. Ulsoy, *Proc. of the Inter. Symposium on Optical Engineering and Industrial Sensing*, Dearborn, MI, June 1988.
- (C21) "Estimation of Tool Wear Under Varying Cutting Conditions," Y. Koren, A.G. Ulsoy, and T.R. Ko, *Proc. of the NSF Manufacturing Systems Conf.*, Ann Arbor, MI, Oct. 1987.
- (C20) "Flexural Motion of a Rotating Beam," A. Yigit, R.A. Scott, and A.G. Ulsoy, *Proc. of the Midwest Mechanics Conf.*, West Lafayette, Indiana, Aug. 1987.
- (C19) "Monitoring Tool Wear Through Force Measurement," Y. Koren, K. Danai, A.G. Ulsoy, and T.R. Ko, *Proc. of the 15th North American Manufacturing Research Conf.*, Bethlehem, PA, May 1987.
- (C18) "Applications of Adaptive Control Theory to Metal Cutting," A.G. Ulsoy, in M. Donath (ed.), *Dynamic Systems : Modeling and Control*, ASME Winter Annual Meeting, Nov. 1985 (*invited*).
- (C17) "Tool Breakage Detection Using a Multi-Sensor Strategy," A.G. Ulsoy and E. Han, *Proc. of the IFAC Conf. on Control Science and Technology for Development*, Beijing, China, Aug. 1985.
- (C16) "Dynamic Modeling and Adaptive Process Controller Design for Milling," A.G. Ulsoy and L.K. Lauderbaugh, *Proc. of the NSF Manufacturing Systems Conf.*, Madison, Wisconsin, May 1985.
- (C15) "Drill Bit Vibration in Manufacturing Systems," O. Tekinalp and A.G. Ulsoy, *Proc. of the Conf. on Intelligent Systems and Machines*, Rochester, MI, Apr. 1985 (*invited*).
- (C14) "Reduced Sensitivity Linear Controller Design Using State Rate Feedback," A.G. Ulsoy, *ASME Paper No. 84-WA/DSC-2*, ASME Winter Annual Meeting, Dec. 1984.
- (C13) "Machine Tool Adaptive Control," L.K. Lauderbaugh and A.G. Ulsoy, *Proc. of the American Control Conf.*, San Diego, CA, June 1984.
- (C12) "High Performance Adaptive Control Systems for Machine Tools," A.G. Ulsoy and L.K. Lauderbaugh, *Proc. of the Eleventh NSF Grantees Production Engineering and Technology Conf.*, Pittsburgh, PA, May 1984.
- (C11) "A Lumped Parameter Model for the Transverse Vibration of Drill Bits," A.G. Ulsoy, *Control of Manufacturing Processes and Robotic Systems*, D.E. Hardt, and W.J. Book (eds.), ASME, NY, Nov. 1983.

- (C10) "State Model for Flank Wear in Metal Cutting," Y. Koren and A.G. Ulsoy, *Proc. of the 12th North American Manufacturing Research Conf.*, Houghton, MI, May 1984.
- (C9) "Variable-Gain Adaptive Control Systems for Machine Tools," A. G. Ulsoy and Y. Koren, NSF Grantees Tenth Production Engineering and Technology Conf., Detroit, Mar. 1983.
- (C8) "Microcomputer Applications in Manufacturing: A Senior Laboratory Course," W.R. DeVries, J.Z. Raski and A.G. Ulsoy, *Proc. of the Inter. Computers in Engineering Conf.*, Chicago, Aug. 1983.
- (C7) "Variable-Gain Adaptive Control Systems for Turning," A.G. Ulsoy and Y. Koren, *Proc. Tenth NSF Grantees Production Engineering and Technology Conf.*, Dearborn, MI, Mar. 1982.
- (C6) "Vibration of Wide Band Saw Blades," A. G. Ulsoy and C. D. Mote, Jr., American Society of Mechanical Engineers, Winter Annual Meeting, Washington, D. C., Nov. 1981.
- (C5) "High Gradient Magnetic Separation," A. G. Ulsoy, and K. V. S. Sastry, Fine Particle Society Annual Meeting, Chicago, IL, May, 1981.
- (C4) "Synthesis of Mineral Process Control Systems - A Case Study in Relation to Flotation," K. V. S. Sastry and A. G. Ulsoy, 110th Annual Meeting of the American Institute of Mining and Metallurgical Engineers, Chicago, IL, Feb. 1981.
- (C3) "Experimental Investigations of Aerodynamic Sound Generated from Circular Saws," C.D. Mote, Jr., C. E. Hartsell and A. G. Ulsoy, 32nd Annual Meeting of the Forest Products Research Society, Atlanta, GA, June 1978.
- (C2) "Principal Developments in Band Saw Vibration and Stability Research," A. G. Ulsoy and C.D. Mote, Jr., 32nd Annual Meeting of the Forest Products Research Society, Atlanta, June 1978.
- (C1) "DC Motor Drives for Robot Arms," Y. Koren and A.G. Ulsoy, *ASME Paper No. 81-WA/DSC-16*, ASME Winter Annual Meeting, Nov. 1981 [Also the *Proc. of the Robots VI Conf.*, Dearborn, MI, Mar. 1982].
- (C1) "The Effects of Stem Length and Stem Material on Stresses in Bone-Prosthesis Systems," D. L. Bartel and A. G. Ulsoy, 21st Annual Meeting of the Orthopedic Research Society, San Francisco, CA, Feb. 1975. [Abstract published in *Journal of Bone and Joint Surgery-American*, Vol. A 57, No. 4, pp 565-565 1975].

Other Publications

- (O10) "The 5XME Workshop Brochure," A.G. Ulsoy (ed.), October 2007.
- (O9) "Administrative Accountability," A.G. Ulsoy, Faculty Perspectives Page, *University Record*, University of Michigan, January 12, 2004, p. 10.
- (O8) "Vision, Principles and Impact of Reconfigurable Manufacturing Systems," Y. Koren and A.G. Ulsoy, *Powertrain International*, Vol. 5, No. 3, Summer 2002, pp. 14-21.
- (O7) "Listening to Istanbul" Poem by Orhan Veli Kanik, translated from the Turkish by A.G. Ulsoy, *Northwest Ethnic Voice*, Vol. 8, Sept./Oct. 2001, p. 5.
- (O6) "The 2000 American Control Conference," A.G. Ulsoy, *IEEE Control Systems Magazine*, Vol. 20, No. 6, Dec. 2000, pp 87-90.
- (O5) "Attracting Students to Graduate Studies," A.G. Ulsoy, *IEEE Control Systems Magazine*, Vol. 9, No. 3, Apr. 1989, p 99.
- (O4) "Anatolia" Poem by Ahmet Arif translated from the Turkish by A.G. Ulsoy, *Berkeley Poetry Review*, No. 3, Fall 1975, pp. 20-21.
- (O3) "Inside" Poem by Ahmet Arif translated from the Turkish by A.G. Ulsoy, *Laughing Gull Press*, 1973, Swarthmore College.
- (O2) "Thirty-Three Bullets" Poem by Ahmet Arif translated from the Turkish by A.G. Ulsoy, *Unsung*, Vol 6, 1973, Swarthmore College Student Poetry Magazine.
- (O1) "For You," "Hoy Lu-Lu," "Mustard Epic," "My Left Hands," and "For the Country" Poems by Orhan Veli Kanik; "The Last Bus," "Like Kerem," and "In Berlin at the Astoria Restaurant" by Nazim Hikmet; "A Rose, a Rose" by Seyyid Nesimi; "What I need is you, you" by Yunus Emre

translated from the Turkish by A.G. Ulsoy, and "All the dogs bark" by A. Galip Ulsoy, *Unsung*, Vol 5, 1972, Swarthmore College Student Poetry Magazine.

Books

- *Microcomputer Applications in Manufacturing*, A.G. Ulsoy and W.R. DeVries, John Wiley and Sons, NY, 1989.
- *Solutions for Microcomputer Applications in Manufacturing*, A.G. Ulsoy and W.R. DeVries, John Wiley and Sons, NY, 1989.
- *Sensors and Controls for Manufacturing*, E. Kannatey-Asibu, Jr., A.G. Ulsoy, and R. Komanduri (eds.), ASME Publications, NY, Nov. 1985.

Chapters in Books

- "Control of Machine Tools and Machining Processes," J.S. Dhupia and A.G. Ulsoy, Chapter in *The Control Handbook*, W.S. Levine (ed.), 2nd Edition, 2009 (in press).
- "Arch-Type Reconfigurable Machine Tool," J.S. Dhupia, A.G. Ulsoy, and Y. Koren, Chapter 9 in *Smart Devices and Machines for Advanced Manufacturing*, L. Wang and J. Xi (eds.), Springer-Verlag, 2008, pp 219-238.
- "Monitoring and Control of Machining," A.G. Ulsoy, Chapter 1 in *Condition Monitoring and Control for Intelligent Manufacturing*, L. Wang and R.X. Gao (eds.), Springer-Verlag, 2006, pp 1-32.
- "Reconfigurable Manufacturing Systems," Y. Koren, U. Heisel, F. Jovane, T. Moriwaki, G. Pritchow, A.G. Ulsoy and H. VanBrussel, Chapter 19 in *Manufacturing Technologies for Machines of the Future*, A. Daschchenko (ed.), Springer-Verlag, 2003, pp 627-665.
- "Section I - Manufacturing," edited by A.G. Ulsoy, in the *Mechanical Systems Design Handbook*, O. Nwokah and Y. Hurmuzlu (eds.), CRC Press, Boca Raton, 2002, FL, pp 1-120.
- "Monitoring and Control of Machining Operations," R.G. Landers, A.G. Ulsoy, and R. Furness, in the *Mechanical Systems Design Handbook*, O. Nwokah and Y. Hurmuzlu (eds.), CRC Press, Boca Raton, FL, 2002, pp 85-104.
- "Manufacturing Systems and Their Design Principles," M.G. Mehrabi, A.G. Ulsoy, and Y. Koren, in the *Mechanical Systems Design Handbook*, O. Nwokah and Y. Hurmuzlu (eds.), CRC Press, Boca Raton, FL, 2002, pp 1-10.
- "Dynamic Modeling and Control of Machining Processes," A.G. Ulsoy, Chap. 2 in *Nonlinear Dynamics of Material Processing and Manufacturing*, F.C. Moon (ed.), Wiley, NY, 1998, pp 33-55.
- "Tooling Structure: Interface between Cutting Edge and Machine Tool," E.I. Rivin *et al* (A.G. Ulsoy, contributor), *CIRP Annals*, Keynote Paper, Vol. 49, No. 2, 2000, pp 591-634.
- "Adaptive Control in Machining," Y. Koren and A.G. Ulsoy, in the *Metals Handbook: Machining*, J.R. Davis (ed.), Volume 16, 9th Edition, ASM Int., Metals Park, Ohio, 1989, pp 618-626.

M.S. Thesis:

- *Optimal Pseudo-Derivative-Feedback Control*, A.G. Ulsoy, Cornell University Library, Jan. 1975. [Results published in Phelan, R.M., *Automatic Control Systems*, Cornell University Press, 1977, pp. 180-181, 224-227.]

Ph.D. Dissertation:

- *Vibration and Stability of Band Saw Blades: A Theoretical and Experimental Study*, A. G. Ulsoy, University of California Library, Dec. 1979.

Lecture Notes:

- *Lecture Notes for ME568: Vehicle Control Systems*, A. G. Ulsoy, Published as a Report of the UM IVHS Program, 1992, and updated 1994, 2002 and 2005 with Huei Peng.
- *Lecture Notes for ME488: Microcomputer Applications in Manufacturing*, A.G. Ulsoy, Chinese translation published by Northwestern Polytechnic University, Xian, China, 1985.
- *Lecture Notes for ME561: Design of Automatic Control Systems*, A.G. Ulsoy, Chinese translation published by Northwestern Polytechnic University, Xian, China, 1985.

Technical Reports:

- (T74) *The 5XME Workshop: Transforming Mechanical Engineering Education and Research in the USA*, A.G. Ulsoy (ed.), May 10-11, 2007.
- (T73) *External Review of the Department of Mechanical Engineering at the Ohio State University*, A. Smits, H. Sehitoglu, N. Todreas, and A.G. Ulsoy, May 6-8, 2007.
- (T72) *Report of the Faculty Grievance Procedures Task Force, University of Michigan*, K. Kearfott, J. Lehman (Chair), S. Masten, C.B. Smith, A.G. Ulsoy, 14 December 2006.
- (T71) *Self-Replicating Machines: Prevention of Degeneracy*, Patrick D. Owens and A. Galip Ulsoy, Control Group Reports, College of Engineering, University of Michigan, Report No. CGR-06-02, January 2006.
- (T70) *Commitment to Excellence: Planning Document for Division of Civil and Mechanical Systems*, National Science Foundation, A.G. Ulsoy, March 2005.
- (T69) *Design and Manufacturing for Responsiveness of Military and Commercial Ground Systems: A Comparative Study*, A.G. Ulsoy, S.J. Hu and J.J. Cristiano, Confidential Report to the Commanding General of the US Army TACOM, July 2003.
- (T68) *New Directions in Mechanical Engineering*, Report from a Workshop Organized by the Big-Ten-Plus Mechanical Engineering Department Heads, Clearwater Beach, Florida, January 25-27, 2002, Sponsored by the National Science Foundation.
- (T67) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, April 2002.
- (T66) *2000-2001 Annual Report*, Department of Mechanical Engineering, University of Michigan, Ann Arbor, September 2001.
- (T65) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, Mar. 2001.
- (T64) *1999-2000 Annual Report*, Department of Mechanical Engineering, University of Michigan, Ann Arbor, October 2000.
- (T63) *Tauber Manufacturing Institute Internal Review Committee Report*, W.M. Keyserling, R. Andrews, R. Brown, W. Lovejoy, T. Kinnear, S. Pollock, A.G. Ulsoy, Report to Deans S. Ashford and L. Katehi, April 2000.
- (T62) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, Mar. 2000.
- (T61) *Planning Document 2000*, Department of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, Febr. 2000.
- (T60) *1998-99 Annual Report*, Department of Mechanical Engineering and Applied Mechanics, Jan. 2000.
- (T59) *External Review of the Department of Mechanical and Industrial Engineering at the University of Toronto*, C. Brennen, J. Jarvis, T. Sheridan and G. Ulsoy, July 1999.
- (T58) *Final Report of the Task Force on Technology Transfer and Commercialization at the University of Michigan College of Engineering*, G.M. Faeth (Chair), G.R. Carignan, D.B. Chaffin, M.N. Islam, J.E. Laird, J. Mazumder, K. Najafi, A.W. Troesch, A.G. Ulsoy, K.A. Winick, University of Michigan, Ann Arbor, Mar. 1999.
- (T57) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, Mar. 1999.
- (T56) *1997-98 Annual Report*, Department of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, January 2000.

- (T55) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, Mar. 1998.
- (T54) *Control Input Shaping for Reducing Structural Vibrations in High Speed Machines*, S. Jones and A.G. Ulsoy, Ford Research Laboratories Technical Report No. SR-97-227, Dec. 1997.
- (T53) *Survey of Flexible and Reconfigurable Manufacturing Systems*, P. Heytler and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems, Technical Report No. 5, Dec. 1997.
- (T52) *State of the Art in Reconfigurable Manufacturing Systems (2 Volumes)*, M. Mehrabi and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems, Technical Report No. 2, Dec. 1997.
- (T51) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems, Technical Report No. 1, Oct. 1997.
- (T50) *Reconfigurable Manufacturing Systems*, Y. Koren and A.G. Ulsoy, Engineering Research Center for Reconfigurable Machining Systems: Annual Report to the National Science Foundation, University of Michigan, Ann Arbor, Mar. 1997.
- (T49) *Joint Evaluation Report on Programme for Production Engineering Education and Research (PROPER)*, H. Van Brussel, F-L Krause, A.G. Ulsoy, and A. Rydhal, The Strategic Foundation, Stockholm, Sweden, Mar. 1997.
- (T48) *Technologically Integrated Manufacturing Engineering: Report of the Inter. Evaluation Committee*, J. Corbett, A.G. Ulsoy, Larseric Falk, Nils Ake Horlin, Dan Johansson, and Gert Petersen, NUTEK Swedish National Board for Industrial and Technical Development Report No. 1996:45, June 1996.
- (T47) *Preliminary Assessment of Factors Affecting Boring Bar Vibration*, C.J. Li, A.G. Ulsoy, and Z. Pasek, Technical Report, Agile Precision Line Boring Project, Mar. 1996.
- (T46) *The Crewman's Associate for Path Control (CAPC): An Automated Driving Function*, R. Ervin, G. Johnson, P. Venhovens, C.C. MacAdam, A.G. Ulsoy, D.J. LeBalnc, C.F. Lin, H. Peng, C.S., Liu, G. Gerber, and R. DeSonia, Final Report to U.S. Army TACOM for Contract No. DAAE07-93-C-R124, Sept. 1995.
- (T45) *Adaptive Driver Modeling for Advanced Vehicle Control Systems*, Ulsoy, A.G., MacAdam, C., and Peng, H., Progress Report to the Intelligent Transportation Systems Research Center of Excellence, Ann Arbor, MI, Dec. 1994.
- (T44) *Baseline Requirements for Lane Sensing to Avoid Run-off-Road Accidents*, Ulsoy, A.G., Ervin, R., and Peng, H., Final Report to the Intelligent Transportation Systems Research Center of Excellence, Ann Arbor, MI, Dec. 1994.
- (T43) *The Crewman's Associate for Path Control (CAPC): An Automated Driving Function*, R. Ervin, A. G. Ulsoy, and C. MacAdam, Interim Report to U.S. Army TACOM for Contract No. DAAE07-93-C-R124, Sept. 1994.
- (T42) "Detailed Technology Ratings and Cases," A. G. Ulsoy and K. LeBrane, in Finegold, D. (ed.), *The Decline of the U.S. Machine Tool Industry and Prospects for Its Sustainable Recovery*, Vol. 2, A RAND Critical Technologies Institute Technical Report, Prepared for the U.S. Office of Science and Technology Policy, 1994.
- (T41) *Flexible Line Boring Project: New Concepts, Technologies, and Their Evaluation*, Z. Pasek, J. Christiano, M. Fetouh, T. Grekowickz, B. Haukkala, Yoram Koren, Jun Ni, A. G. Ulsoy, Center for Dimensional Measurement and Control, Technical Report, Aug. 1994.
- (T40) *Center for Dimensional Measurement and Control in Manufacturing*, A. G. Ulsoy, Annual Report to the National Science Foundation, University of Michigan, May 1994.
- (T39) *A University Basic Automotive Research Center In Partnership With Industry And The Government: Organizational Models, Policies, And Research Issues*, J. C. MacBain and A. G. Ulsoy, A Technical Report prepared for the U.S. Army Tank Automotive Command, Nov. 1993.

- (T38) *Flexible Line Boring Project: Benchmarking Study*, S. Chen, M. Chesney, M. Fetouh, T. Grekowickz, M. Hojanacki, J. Ni, Z. Pasek, D. Specht, A. G. Ulsoy, Center for Dimensional Measurement and Control, Technical Report, Aug. 1993.
- (T37) *Center for Dimensional Measurement and Control in Manufacturing*, A. G. Ulsoy, Annual Report to the National Science Foundation, University of Michigan, May 1993.
- (T36) *A Lane-Departure Warning and Control System*, K. Huh, T. Pilutti, A.G. Ulsoy, C. MacAdam, C.H. Lin, and R. Ervin., IVHS Program Technical Report, University of Michigan, Nov. 1992.
- (T35) *Effect of Material Properties, Coolant Holes, Web Taper and Flutes on Drill Vibrations*, D. Rincon and A.G. Ulsoy, Final Report to the General Motors Corporation, Technical Report No. UM-MEAM-91-04, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Jan. 1991.
- (T34) *Flatness Error Diagnostics in Face Milling of AOD and AODI Transmission Parts*, S.G. Chen, A.G. Ulsoy and Y. Koren, Final Report to the Ford Motor Company, Technical Report No. UM-MEAM-90-08, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Nov. 1990.
- (T33) *Stability Robustness of LQ and LQG Active Suspensions*, A.G. Ulsoy, D. Hrovat, and T.T. Tseng, Technical Report, Scientific Research Laboratories, Ford Motor Company, Dearborn, MI, Sept. 1990.
- (T32) *Representation of Complex Drill Geometry in Drill Vibration Models*, D. Rincon and A.G. Ulsoy, Final Report to the General Motors Corporation, Technical Report No. UM-MEAM-90-06, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Sept. 1990.
- (T31) *Model-Based Tool Wear Estimation in Metal Cutting*, A.G. Ulsoy and Y. Koren, Final Report to the National Science Foundation, Technical Report No. UM-MEAM-89-12, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Oct. 1989.
- (T30) *Stability Robustness and LQG/LTR Design of Active Suspensions*, A.G. Ulsoy and D. Hrovat, Technical Report, Scientific Research Laboratories, Ford Motor Company, Dearborn, MI, Aug. 1989.
- (T29) *Computer Programs Developed to Solve the Equations of Motion for Drill Dynamics*, O. Tekinalp, and A.G. Ulsoy, Technical Report No. UM-MEAM-88-02, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1988.
- (T28) *A Simulation Program for the Dynamics of a Radially Rotating Beam with Impact*, A. Yigit, A.G. Ulsoy, and R.A. Scott, Technical Report No. UM-MEAM-88-01, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1988.
- (T27) *Adaptive and Sensor Based Control of Machine Tools*, J. L. Stein and A. G. Ulsoy, Final Report to the General Motors Corporation, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, June 1986.
- (T26) *Application Software for a Model Based Approach to Tool Wear Estimation*, K. Danai and A. G. Ulsoy, Technical Report No. UM-MEAM-86-36, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1986.
- (T25) "Control of a Flexible Robot Arm," A. G. Ulsoy and N. G. Chalhoub, in D. Atkins *et al* , *Coordinated Research in Robotics and Integrated Manufacturing* , Final Report to the Air Force Office of Scientific Research, College of Engineering, University of Michigan, Ann Arbor, MI, Aug. 1985.
- (T24) *Variable Gain Adaptive Process Control Systems for Milling*, A. G. Ulsoy and L. K. Lauderbaugh, Final Report to the National Science Foundation, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1985.
- (T23) *Tool Breakage Detection in Turning Using a Multi-Sensor Strategy*, A. G. Ulsoy and E. Han, Report to the Consortium on Diagnostic Sensing and Control for Metal Cutting, Ann Arbor, MI, Nov. 1984.

- (T22) *Dynamic Modeling and Control of the Milling Process*, A. G. Ulsoy and L. K. Lauderbaugh, Technical Report No. UM-MEAM-84-31, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Nov. 1984.
- (T21) *A Comparison of Automatic Control Schemes for Control of the Speed of a DC Motor Using a Digital Microcomputer*, D. R. Lymburner and A. G. Ulsoy, Technical Report No. UM-MEAM-84-26, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, June 1984.
- (T20) *RELTIM: A Library of Routines For Use in Real Time Machine Control Applications*, F. Rasmussen, L. K. Lauderbaugh and A. G. Ulsoy, Technical Report No. UM-MEAM-84-24, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1984.
- (T19) *Programming Optimal Suggestions in the Design Concept Phase: Application to the Boothroyd Assembly Charts*, M. Jakiela, P. Papalambros and A. G. Ulsoy, Technical Report No. UM-MEAM-84-23, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, May 1984.
- (T18) *SIMULA: Digital Control System Simulation Package*, L. K. Lauderbaugh and A.G. Ulsoy, Technical Report No. UM-MEAM-84-22, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Apr. 1984.
- (T17) *Experimental Evaluation of Transverse Drill Bit Vibrations*, O. Tekinalp and A. G. Ulsoy, Technical Report No. UM-MEAM-84-21, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Feb. 1984.
- (T16) *Variable-Gain Adaptive Control Systems for Machine Tools*, A. G. Ulsoy, Y. Koren and L. K. Lauderbaugh, Progress Report to the National Science Foundation, Technical Report No. UM-MEAM-83-18, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Feb. 1984.
- (T15) *Current Research in Product Design for Automated Assembly*, M. Jakiela, *et al*, Progress Report to IBM Corporation, Technical Report No. UM-MEAM-83-16, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Sept. 1983.
- (T14) *Dynamic Simulation of Flexible Robot Arm Controller*, N. B. Chalhoub and A.G. Ulsoy, Technical Report No. TR-RSD-13-83, Center for Robotics and Integrated Manufacturing, University of Michigan, Ann Arbor, MI, Sept. 1983.
- (T13) *A Computational Package for Design and Process Evaluation in Band Sawing - A User's Manual*, J. E. Borchelt, A. G. Ulsoy and P. Papalambros, Technical Report No. UM-MEAM-83-14, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, June 1983.
- (T12) *Development of an Efficient Computational Procedure for Evaluating Band Saw Blade Stresses*, J. E. Borchelt, A. G. Ulsoy and P. Papalambros, Technical Report No. UM-MEAM-83-13, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, June 1983.
- (T11) *Variable-Gain Adaptive Control Systems for Machine Tools*, A. G. Ulsoy and Y. Koren, Progress Report to the National Science Foundation, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Oct. 1982.
- (T10) *Research Directions in Robotics*, D. Atkins, *et al*. Technical Report No. RSD-TR-16-82, Center for Robotics and Integrated Manufacturing, University of Michigan, Ann Arbor, MI, Oct. 1982.
- (T9) *Simple Adaptive Control of a Robot Arm*, D. Goldberg, A. G. Ulsoy and Y. Koren, Center for Robotics and Integrated Manufacturing, University of Michigan, Ann Arbor, MI, Sept. 1981.
- (T8) *Computer-Aided Design of Automotive Accessory Drive Systems*, A. G. Ulsoy and J. E. Whitesell, Final Report to Ford Motor Company, Dept. of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, MI, Sept. 1981.
- (T7) "Analysis of Band Saw Vibration and Stability," A. G. Ulsoy, in Mote, C. D., Jr. (editor), *Optimizing Circular Saw Design and Operation*, Technical Report No. 35.01.130, Progress

- Report No. 12, Section E, University of California Forest Products Laboratory, Richmond, CA, Nov. 1979.
- (T6) *Vibration and Stability of Band Saw Blades: A Theoretical and Experimental Study*, A.G. Ulsoy, Technical Report No. 35.01.130, Progress Report No. 10, University of California Forest Products Laboratory, Richmond, CA, Oct. 1979.
- (T5) *Two Computer Codes for Band Saw Vibration and Stability Analysis*, A.G. Ulsoy, Technical Report No. 35.01.130, Progress Report No. 11, University of California Forest Products Laboratory, Richmond, CA, Oct. 1979.
- (T4) "Analysis of Band Saw Vibration," A. G. Ulsoy, in Mote, C. D., Jr. (editor), *Optimizing Circular Saw Design and Operation*, Technical Report No. 35.01.130, Progress Report No. 9, Section E, University of California Forest Products Laboratory, Richmond, CA, Nov. 1978.
- (T3) "Band Saw Vibration and Stability Research," A. G. Ulsoy, in Mote, C. D., Jr. (editor), *Control of Vibration in Thin Circular Saws*, Interim Progress Report No. APR77-11557, Section C, Dept. of Mechanical Engineering, University of California, Berkeley, CA, May 1978.
- (T2) "Band Saw Vibration Research", A. G. Ulsoy, in Mote, D. C., Jr. (editor), *Optimizing Circular Saw Design and Operation*, Technical Report No. 35.01.130, Progress Report No. 8, Section E, University of California, Berkeley, CA, May 1978.
- (T1) *Full Utilization of a Rail Right of Way: A Case Study of Philadelphia's Media-Westchester Line*, A. G. Ulsoy, (editor, contributor), Urban Transportation Series Report No. 3, Dept. of Engineering, Swarthmore College, Swarthmore, PA, Feb. 1973.

TECHNOLOGY TRANSFER

Contributions to Technology Transfer

Galip Ulsoy, with co-workers and students, has worked closely with industry to apply the results of his research. These efforts have led to three patents. The Agile Line Boring project, with Lamb Technicon, led to an *Industry Week* magazine award and a new machine tool for line boring. Galip Ulsoy's work on vehicle active safety and road-departure accident prevention, has led to several prototype systems being built at Ford and to two Ford Innovation Awards. Furthermore, both Ford and GM currently use methods and software developed in Galip Ulsoy's research to design their engine accessory drive belts. Three of Galip Ulsoy's former students have founded or co-founded successful new companies, while several have taken positions in industry and contribute to transfer of technology to the companies they work for (e.g., the award winning research on process control in drilling was implemented at Ford). Galip Ulsoy also spent a sabbatical year, and two summers, working at Ford Research Laboratories and interacted extensively with various companies through the Engineering Research Center for Reconfigurable Machining Systems and its technology transfer activities. In the past Galip Ulsoy has been Director (and Associate Director) of the NSF industry-University Cooperative Research Center and the Consortium for Diagnostics in Machining. Galip Ulsoy also served on the executive board of the NIST Advanced Technology Project (ATP) "2mm Project," one of the most successful University of Michigan efforts ever in terms of technology transfer, and a project often highlighted by NIST as a successful ATP project. He served as a member of the Corporate Board for the US Army TACOM Ground Vehicle Industrial Enterprise, and is currently a member of the Board of Directors for Intellicass, a stamping press automation company utilizing results from his research on stamping process control.

Patents Issued

- (3) "Reconfigurable Manufacturing System Having A Production Capacity, Method for Designing Same, and Method for Changing Its Production Capacity," Y. Koren and A.G. Ulsoy, U.S. Patent 6,349,237 issued February 19, 2002. Assigned to University of Michigan.

- (2) "Vehicle Steering System and Method for Control," T. Pilutti, D. Hrovat and A.G. Ulsoy, U.S. Patent 6,021,367 issued February 1, 2000. Assigned to Ford Motor Company.
- (1) "Method and Apparatus for Vehicle Yaw rate Estimation," N. Sivashankar, A.G. Ulsoy, and D. Hrovat. U.S. Patent 5,878,357 issued March 2, 1999. Assigned to Ford Motor Company.

PROFESSIONAL SERVICE

Contributions to Service

Galip Ulsoy has contributed extensively to professional service at all levels. At the national/international level he is Past President, and former President, Vice-President and member of the Board of Directors, of the American Automatic Control Council; the national member organization representing the USA in the International Federation of Automatic Control (IFAC). He has served as an Editor of an American Society of Mechanical Engineers (ASME) Transactions journal, and is on the editorial board of several international journals. Galip Ulsoy is General Chair of the first ASME Dynamic Systems and Control Conference in 2008, and has served as the General Chair of the 2000 American Control Conference and Chair of the Dynamic Systems and Control Division of the ASME. Galip Ulsoy and has served as the Director of the Division of Civil and Mechanical Systems at the National Science Foundation during 2003-2005. As NSF Division Director, he testified before a subcommittee of the US Senate Committee on Commerce, Science, and Transportation and briefed the US House Committee on Science and Technology. At the University of Michigan Galip Ulsoy served as the founding Deputy Director of the Engineering Research Center for Reconfigurable Machining Systems, the Chair, Associate Chair and Graduate Program Chair of the Mechanical Engineering (ME) Department, founding Director of the Program in Manufacturing and of the Industry-University Cooperative Research Center, and founding Director of the Ground Robotics Research Center. As Chair, he led the ME Department to a number two ranking in the April 2003 *US News & World Report* ranking of graduate programs. He currently serves as an elected member of the College of Engineering Executive Committee and has received Service Excellence Awards from the College of Engineering and the Mechanical Engineering Department as well as an ASME Dynamic Systems and Control Division Leadership Award. Galip Ulsoy has also served as a consultant to both industry and governmental organizations worldwide and was elected to membership in the National Academy of Engineering (NAE) in 2006. He serves on the NAE Board on Manufacturing and Engineering Design and the NAE Awards Selection Committee.

Major Committee Assignments at University of Michigan

University of Michigan (UM)

- Workshop Leader, Advanced Manufacturing Workshop, University Research Corridor Conference, The Role of Engaged Universities in Economic Transformation, October 2007.
- Member, SACUA Faculty Grievance Procedures Task Force, 2006.
- Member, Hearing Committee for Regents Bylaws 5.09 Faculty Dismissal Proceedings, 2006-8.
- Member, Internal Review Committee for the Tauber Manufacturing Institute, 2000.
- Member, Executive Committee, Tauber Manufacturing Institute, 1996-98.
- Member, Director Search Committee, MI Joint Manufacturing Initiative Between College of Engineering and Business School, 1992-93.
- Member, Rackham School of Graduate Studies, ITS Certificate Program Committee, 1990-94.
- Member, College of Engineering/Business School, Ford Manufacturing Education Initiative, Program Advisory Committee, 1989-93.
- Member, Engineering College Dean Search Committee, 1989.
- Member, College of Engineering/Business School, Ford Mfg. Education Initiative, 1988.
- Member, Rackham School of Graduate Studies, Dissertation Grant Selection Committee, 1986.
- Member, Rackham School of Graduate Studies, Predoctoral Fellowship Committee, 1985.

UM College of Engineering

- Promotion and/or Tenure Review Committee for J. L. Stein (Chair, 1987), R.S. Rao (Member, 1989), R.B. Brown (Member, 1990), D. Wehe (Member, 1991), M. Walker (Member, 1991), W. Ribbens (Member, 1992), W. Birmingham (Member, 1993), E. Kannatey-Asibu (Member, 1993), J. Ni (Member, 1996), J. Liker (Member, 1997), A. Stefanopoulou (Chair, 2002 and 2005).
- Reappointment Review Committee for C. Pierre (Member, 1987), H. Peng (Chair, 1996), and D. Brei (Chair, 1997).
- Chair, Interdisciplinary Faculty Search Committee in Autonomous Vehicles and Robotics, 2007-2008.
- Budget task team, 2007 – present
- Elected Member, College of Engineering Executive Committee, 2006-2010.
- Member, Committee on PIM-TMI Relations, 2001
- Member, Chairs Advisory Committee/College Council, 1993-2001.
- Member, Technology Transfer and Commercialization Committee, 1998.
- Member, Graduate Professional Programs Committee, 1998.
- Member, Advisory Board, NSF Sponsored Combined Research-Curriculum Development in Lasers for Manufacturing, 1996-98.
- Member, World Wide Web Committee, 1996-97.
- Chair, Michigan Institute for Manufacturing Technology Task Force, 1994.
- Member, Strategic Resource Planning Group, 1993-94.
- Member, Fraunhofer-USA Initiative Team, 1993-94.
- Co-Director, Advanced Vehicle Control Research Cluster, Intelligent Vehicle-Highway Systems Research Program, 1992.
- Member, Manufacturing Strategy Planning Group, 1991-92.
- Member, Faculty Goals Review Committee, 1991-92.
- Member (Chair for 1991), Control, Systems and Optimization Coordinating Committee, 1990-92.
- Member, Search Committee for a Senior Faculty Member in Automotive Simulation, 1990.
- Member, Design and Manufacturing Colloquium Organizing Committee, 1990.
- Member, Search and Screening Committee for the Anderson Chair in Manufacturing, 1985-86.
- Member, Center for Research in Integrated Manufacturing (CRIM) Management Committee, 1984-85.
- Member, Robot Systems, Management Committee, 1984-86.
- Representative, Faculty Candidate Interviews, 1984-.
- Member, Committee on an Interdisciplinary Program in Manufacturing, 1983-84.
- Member, Manufacturing Committee, 1980.

UM Department of Mechanical Engineering

- Member, Faculty Search Committee, 2007-2008.
- Chair, Planning Committee, 1998-01.
- Chair, Advisory Committee, 1998-01.
- Elected Member, Advisory Committee, 1996-98 and 1989-92.
- Coordinator, Dynamics, Systems and Controls Instructional Area, 1998.
- Member, Facilities Planning Task Force, 1996.
- Member, Planning Committee, 1992-93.
- Member, Honors and Awards Committee, 1990-92.
- Chair, Laboratories and Safety Committee, 1992.
- Chair, Faculty Search Committee for Manufacturing Processes/Materials Processing, 1990-91.
- Member, Search Committee for Faculty in Mechanical Sciences, 1990-92 and 1984-86.
- Chair, Ad Hoc Committee on Instruction, 1989-90.
- Member, Graduate Admissions and Financial Aid Committee, 1988-89.
- Organizer, "Current Research in Mechanical Systems" Seminar Series, 1988-89 and 1982-86.

- Member (Chair, 1987-1989), Graduate Program Committee, 1982-90.
- Examiner, Ph.D. Qualifying Exams in "Dynamics and Vibrations," and "Systems and Control." 1981.
- Member, Publicity Committee, 1981-82.

Administrative Duties at UM

- Founding Director, Ground Robotics Research Center, 2007- .
- Chair, Department of Mechanical Engineering, 1998-2001.
- Founding Deputy Director, Engineering Research Center for Reconfigurable Machining Systems, College of Engineering, 1996-2002, and 2006-.
- Founding Director, Program in Manufacturing, College of Engineering, 1993-98.
- Director (1992-94), and Founding Associate Director (1990-92), National Science Foundation Industry-University Cooperative Research Center for Dimensional Measurement and Control in Manufacturing.
- Associate Chair, Dept. of Mechanical Engineering and Applied Mechanics, 1992-93.
- Director of Laboratories, Dept. of Mechanical Engineering and Applied Mechanics, 1992.
- Chair, Mechanical Engineering Graduate Program, H.H. Rackham Graduate School, 1987-89.
- Director, Consortium on Diagnostic Sensing and Control for Metal Cutting, 1984-86.

Service to Government or Professional Organizations

- Editorial Activities:
 - Editor, *ASME J. of Dyn. Syst., Meas. & Control*, 1999-2004.
 - Member, Editorial Board, *Mech. Syst. & Signal Processing*, 1987- 2008.
 - Member, Editorial Board, *International Journal of Manufacturing Research*, 2006 -.
 - Member, Editorial Board, *Inter. J. of Control, Automation and Systems*, 2003-2008.
 - Member, Editorial Board, *Intern. J. of Vehicle Autonomous Systems*, 2000-.
 - Member, Editorial Board, *Trans. on Control, Automation & Syst. Engin.*, Korea, 2000-.
 - Member, Editorial Board, *Mechanical Systems Design Handbook*, Wiley, 1998-2001.
 - Member, Editorial Board, *I. Mech. E. J. of Engineering Manufacture*, 1999-2001.
 - Member, Editorial Board, *GSU Engin. & Techn. Journal* (Istanbul), 1996.
 - Technical Editor, *IEEE/ASME Trans. on Mechatronics*, 1995-98.
 - Member, Management Committee, *IEEE/ASME Trans. on Mechatronics*, 2006-.
 - Associate Editor, *ASME J. of Dyn. Syst., Meas. & Control*, 1987-93.
 - Guest Editor, *Mech. Syst. & Signal Processing*, Special issue, July 1988.
- Reviewer for a variety of journal and book publishers in the areas of control, manufacturing, design, vibrations, dynamics, automotive engineering, etc.
- Member of various (e.g., Dynamics, Control, Manufacturing, NYI, SBIR) proposal review panels at the National Science Foundation.
- External evaluator for various programs:
 - Mechanical Engineering Department, Carnegie Mellon University, 2008
 - Mechanical Engineering Department, Ohio State University, 2007.
 - Board of Directors, Ground Systems Industrial Enterprise, US Army TACOM, 2002-2005
 - Singapore Institute of Manufacturing Technology, 2002-2004
 - Mechanical and Nuclear Engineering Department, Penn State University, 2003-2005.
 - Mechanical and Industrial Engineering Department, University of Toronto, 1999.
 - The Strategic Foundation, Stockholm, Sweden, 1997.
 - Swedish National Board for Industrial and Technical Development, 1996.
 - Manufacturing Research Center, Georgia Institute of Technology, 1995-1998.
 - Technical Review Board, USAF Next Generation Controller Project, 1990.
- External referee for promotion and tenure reviews at various U.S. and international institutions.
- External evaluator for Ph.D. dissertations:
 - Royal Institute of Technology, Stockholm, Sweden, 1996.

- University of British Columbia, Vancouver, Canada, 1994 and 2004.
- University of Windsor, Windsor, Canada, 2006.
- Organizer or Invited Participant at Various International Workshops:
 - NSF Workshop on The 5xME (Arlington, VA, 2007-2008)
 - NSF Workshop on Redefining Mechanical Engineering (Clearwater, FL, 2002)
 - Focused NIST ATP in Automotive Manufacturing (Ann Arbor, MI, 1994)
 - NSF Workshop on Research for National Competitiveness (Ann Arbor, MI, 1991).
 - NSF West Germany - USA Workshop on Manufacturing (Dearborn, MI, 1982).
- American Society of Mechanical Engineers (ASME) Activities:
 - Founding General Chair, Dynamic Systems and Control Conference, 2008.
 - Technical Editor, *J. Dyn. Sys Meas Control*, 1999-2003
 - Plenary Session Organizer, ASME/MEDH Education Conference, 2002
 - Chair, Dyn. Syst. & Control Division, Executive Committee, 1997.
 - Member, Advisory Committee, Turkey Section of ASME International, 1996-.
 - Member, Dyn. Syst. & Control Division, Executive Committee, 1994-98.
 - Dyn. Syst. & Control Division, Honors Committee, 1991-97.
 - Member, Committee to promote participation in ACC, 1988-89.
 - Member, Technical Panel on Manufacturing Systems, 1986-.
 - Symposium Co-Organizer at WAM (Miami,1985).
 - Session Chair at numerous conferences since 1983.
- National Academy of Engineering (NAE) Activities:
 - Moderator, Panel on Vehicle Safety and Regulatory Issues in a Global Environment, Automotive Engineering in a Global Competitive Environment, A Regional Meeting of the NAE, Ann Arbor, April 17, 2006.
 - Reviewer, NAE Report on Benchmarking the Research Competitiveness of the US in Mechanical Engineering.
 - Member (2008-2010) and Chair (2009-2010), NAE Awards Selection Committee.
 - Member (2008-), Board on Manufacturing and Engineering Design (BMED), NAE
- General Chair (Chicago, 2000), Best Paper Award Selection Committee Member (Philadelphia, 1997), Program Chair (Seattle, 1995), Publications Chair (Boston, 1991), Program Committee Member (1989-90) and Session Chair and Reviewer for various American Control Conferences since 1983.
- Member, Board of Directors of American Automatic Control Council, representing the American Society of Mechanical Engineers, Alternate Director (2002-2003) and Director (2004-2005).
- Member, Organizing/Program Committees for Japan-USA Symposium on Flexible Automation (Osaka, 1986; Kobe, 1994; Boston, 1996; Otsu, 1998; Ann Arbor, 2000; Hiroshima, 2002).
- Member of Organizing/Program Committees for Various International Conferences:
 - CIRP Conference on Reconfigurable Manufacturing (Ann Arbor, 2001, 2003, 2005)
 - CIRP Seminar on Manufacturing Systems (Berkeley 1998)
 - CIRP Conference on Dies & Molds (Istanbul 1997)
 - Turkish Mechanical Engineering Congress (Istanbul 1997).
 - S.M. Wu Symposium (Chicago 1994; Ann Arbor 1996).
 - North American Manufacturing Research Conference (Ann Arbor 1996).
 - 4th International Workshop on Advanced Motion Control (Mie 1996).
 - 14th IAVSD Symposium on Dynamics of Vehicles (Ann Arbor 1995).
 - International Conference on Recent Advances in Mechatronics (Istanbul 1995 & 99).
 - CIRP Seminar on Manufacturing Systems (Ann Arbor 1995).
 - International Workshop on Open-Architecture Control (Ann Arbor 1994).
- Member, Executive Committee of the Board of Directors, 2 mm Program, Inc., National Institute of Standards and Technology, Advanced Technology Program, 1992-95.

- Member, Steering Committee, Greenfield Coalition for New Manufacturing Education (Focus: Hope, University of Detroit Mercy, Wayne State University, Lawrence Institute of Technology, Central State University, University of Michigan, Lehigh University), 1993-94.
- Member, Industrial and Professional Advisory Council, Mechanical Engineering Division, College of Engineering, Penn State University, 2003.
- Member of the Korea Advanced Institute of Science and Technology (KAIST) International Advisory Committee, South Korea.
- Member, Scientific Advisory Board, Singapore Institute of Manufacturing Technology (SIMT), 2003.
- Member, Scientific Advisory Board, Woxencentrum Manufacturing Research Program, Sweden, 2000-2003.
- Member, Corporate Board of Directors, Ground Systems Industrial Enterprise, US Army TACOM, 2002-2005.
- Organizer, NSF Sponsored Workshop on the future of mechanical engineering education and research entitled "The 5X ME," 2006-2008.
- Member, Board of Directors, Intellicass, Montreal, Canada, 2006-
- Member, Scientific Advisory Board, NSF ERC for Compact and Efficient Fluid Power, University of Minnesota, 2006-

Consulting

- Research Proposal Reviewer and Faculty Search Committee Member, KAUST and UC Berkeley Academic Excellence Alliance.
- Expert, Directorate for Engineering, National Science Foundation, Arlington, VA.
- Academic Advisor to the LG Production Research Center, Seoul, South Korea.
- Reconfigurable Manufacturing - Implications for Materials Handling, Jervis B. Webb Company, Farmington Hills, MI.
- External Review of the Department of Mechanical and Industrial Engineering at the University of Toronto, Toronto, Canada.
- Evaluation of Proposed Manufacturing Research and Education Program - PROPER, The Strategic Foundation, Stockholm, Sweden.
- Evaluation of Manufacturing Research Program - TIME, Swedish National Board for Industrial and Technical Development (NUTEK), Stockholm, Sweden.
- University-Industry Relations, Transfer of Knowledge Through Expatriate Nationals (TOKTEN), United Nations, Ankara, Turkey.
- Predictive Process Control, National Center for Manufacturing Sciences (NCMS), Ann Arbor, MI.
- Vehicle Control Systems, General Motors Technical Center, Warren, MI.
- Lateral Control of Vehicles, Scientific Research Laboratories, Ford Motor Co., Dearborn, MI.
- Sources of Flatness Errors in Milling, Transmission Plant, Ford Motor Co., Livonia, MI.
- Stability Robustness of Controllers for Active Suspensions, Scientific Research Laboratories, Ford Motor Co., Dearborn, MI.
- Design of a Window Raising Mechanism, Johnson Controls, Madison Heights, MI.
- Adaptive Controller Design for a Semi-Active Suspension, Electrical and Electronics Division, Ford Motor Co., Dearborn, MI.
- Vibration of Accessory Belt Drives, Cummins Engine Co., Columbus, Indiana.
- Circular Saw Vibration and Stability Analysis, Research Department, California Cedar Products Co., Stockton, CA.

OTHER
Collaborative Activities

Galip Ulsoy has had extensive collaborations with researchers at the University of Michigan and at other institutions. For example, his co-authors on various publications include not only his advisors, graduate students and research associates, but also Yoram Koren, Panos Papalambros, Jeff Stein, Huei Peng, Noel Perkins, Christophe Pierre, Dick Scott, Dawn Tilbury and Noboru Kikuchi from the Department; Pierre Kabamba, Dennis Bernstein, Kang Shin and Harris McClamroch from the College; Bob Ervin, Dave LeBlanc, Patrick Nelson and Peter Heytler from the University; Charles Wu, Davor Hrovat, Shiva Sivashankar, Rick Meckstrof and Mahmoud Demeri from Ford, and Paul Wright and Masayoshi Tomizuka from UC Berkeley; and U. Heisel, F. Jovane, C.W. Lee, E. Lenz, T. Moriwaki, M. Pakdemirli, G. Pritchow, H. VanBrussel, and A. Yigit from academic institutions in Europe, the Middle East and Asia. Also, Galip Ulsoy currently collaborates with a large number of researchers through the interdisciplinary Engineering Research Center for Reconfigurable Machining Systems and the Ground Robotics Research Center. Galip Ulsoy has also collaborated extensively with other faculty in teaching (e.g., Microcomputer Applications, Vehicle Control Systems, Sensors and Signal Processing) including development of two courses (i.e., Manufacturing Technologies and Strategies; Agile, Reconfigurable Manufacturing) jointly with faculty in the UM Business School.

Invited Presentations

- (P78) "Control of Time Delay Systems via the Lambert W Function," Mechanical Engineering Department Seminar, Worcester Polytechnic Institute, Worcester, MA December 2008.
- (P77) "Control of Time Delay Systems via the Lambert W Function," Oldenburger Medal Lecture, 1st ASME Dynamic Systems and Control Conference, Ann Arbor, MI, October 2008.
- (P76) "Recommendations from the 5XME Workshop on Transforming Mechanical Engineering Education," Invited Plenary, ASME Mechanical Engineering Education Conf., Galveston TX, April 2008.
- (P75) "Analysis and Control of Time Delay Systems via the Lambert W Function," Control Seminar Series, University of California at San Diego, February 2008.
- (P74) "Mechatronic Design," Dept. of Mechanical Engineering, Purdue University, November 2006.
- (P73) "Analysis of Delay Differential Equations via the Matrix Lambert W Function," Dept. of Mechanical Engineering, Purdue University, Nov. 2006.
- (P72) "Some Current Research Topics in Design of Mechatronic Systems," IMS Centre, University of Windsor, Windsor, Canada, August 2006.
- (P71) "Dynamics and Control of Driver-Vehicle Systems using Driving Simulators," Toyota Central R&D Laboratories, Nagoya, Japan, July 2006.
- (P70) "A 21st Century Engineering Education for Leading Concurrent Discovery and Innovation," Invited Keynote Paper for CIRP President's Roundtable, CIRP General Assembly, Antalya, Turkey, August 2005.
- (P69) "Challenges and Opportunities in the Engineering of Intelligent Systems," 4th International Workshop on Structural Control, Columbia University, NY, June 2004.
- (P68) "Civil and Mechanical Systems at NSF, and Combined Optimal Design and Control," Texas A&M University, College Station, TX, April 2004.
- (P67) "Civil and Mechanical Systems Division of NSF," Univ Maryland Baltimore, MD, October 2003.
- (P66) "21st Century Manufacturing," W.R. DeVries and A.G. Ulsoy, CIRP General Assembly, STC-M, Montreal, CA, August 2003.
- (P65) "Perspectives on RMS," Speaker, Panelist and Moderator, 2nd CIRP Conference on Reconfigurable Manufacturing, Ann Arbor, MI, August 2003.
- (P64) "Manufacturing Responsiveness in US Army Depots and Their Commercial Counterparts," US Army Ground Systems Industrial Enterprise Board Meeting, Rock Island Arsenal, IL, June 2003.

- (P63) "Writing a Winning NSF CAREER Proposal," Speaker and Panelist at Plenary Session, American Control Conference, Denver, CO, June 2003.
- (P62) "Forum on Advanced Control and Sensors" Speaker and Panelist at Plenary Session, American Control Conference, Denver, CO, June 2003
- (P61) "Network for Earthquake Engineering Simulation (NEES) Research," NEES Consortium Meeting, Park City, UT, May 2003.
- (P60) "Civil and Mechanical Systems Division of NSF," Univ. of California, Berkeley, CA, April 2003.
- (P59) "Fuel Cell Control Research at the National Science Foundation," Univ. of California, Irvine, CA, April 2003.
- (P58) "Reconfigurable Manufacturing Systems," Univ. of Florida, Gainesville, FL, April 2002.
- (P57) "Report from the Workshop on Redefining Mechanical Engineering," ASME/MEDH Education Conference, Clearwater, FL, April 2002.
- (P56) "Keeping Cars on the Road," University of Minnesota, Department of Mechanical Engineering, Minneapolis – St. Paul, MN, February 2002.
- (P55) "Reconfigurable Manufacturing Systems," Computer Integrated Studies Research Center, University of British Columbia, Vancouver, February, 2002.
- (P54) "Reconfigurable Manufacturing Systems," Department of Mechanical Engineering, University of Missouri, Rolla, MO, November 2001.
- (P53) "Reconfigurable Manufacturing Systems," Keynote Paper at the Manufacturing and Materials of Ontario Workshop on Reconfigurable Manufacturing: Beyond Flexible, McMaster University, Canada, October 2001.
- (P52) Reconfigurable Manufacturing Systems (RMS) and Research Topics in RMS," Manufacturing and Materials of Ontario, Distinguished Lecture Series, National Research Council, Canada, London, Hamilton, Waterloo and Windsor, Ontario, Mar. – June 2001.
- (P51) "Some Topics in Control Research for Reconfigurable Manufacturing Systems," A.G. Ulsoy, Dept. Mechanical Engineering, Michigan State University, E. Lansing, MI, Jan. 2001.
- (P50) "Reconfigurable Machine Tools and Reconfigurable Systems," Y. Koren and A.G. Ulsoy, 9th International Machine Tool Engineers' Conference, Tokyo, Japan, Oct. 2000.
- (P49) "Reconfigurable Manufacturing Systems," LG Production Research, Seoul, Korea, Aug. 2000.
- (P48) "Engineering Research Center for Reconfigurable Machining Systems" Frontiers in Engineering Conference, College of Engineering, University of Michigan, MI, May 2000.
- (P47) "Welcoming Remarks," Automotive Laser Applications Workshop, Dearborn, MI, March 2000.
- (P46) "Control Issues in Reconfigurable Manufacturing," Mechanical Engineering Department, Penn State University, PA, Feb. 2000, Distinguished Lecture Series.
- (P45) "Control Issues in Reconfigurable Manufacturing," Mechanical Engineering Department, Purdue University, IN, Feb. 2000, Feddersen Distinguished Lecture.
- (P44) "Reconfigurable Manufacturing Systems," Jervis B. Webb Co., Farmington Hills, MI, Sept. 1999.
- (P43) "Reconfigurable Manufacturing Systems and Controllers," Carnegie-Mellon University, Pittsburgh, PA, Jan. 1999.
- (P42) "Controllers for Reconfigurable Manufacturing Systems," Oakland Univ., Auburn Hills, MI, Oct. 1998.
- (P41) "Research Issues in Reconfigurable Machine Tool Controllers," Georgia Institute of Technology, Atlanta, GA, Apr. 1998.
- (P40) "Reconfigurable Controllers for Machining Systems," University of Connecticut, Hartford, Connecticut, Mar. 1998.
- (P39) "Active Safety Systems for Preventing Vehicle Road Departure Accidents," University of Michigan ITS Speakers Series, January 1998.
- (P38) "Panel on New Directions in Manufacturing," ASME IMECE, Dallas, TX, Nov. 1997.
- (P37) "Panel on Advances in Manufacturing Education," ASME IMECE, Dallas, TX, Nov. 1997.
- (P36) "Reconfigurable Machining Systems and Their Control," Univ. of Illinois, Urbana, IL, Apr. 1997.

- (P35) "Panel on Real-Time Open Architecture Systems for Manufacturing," ASME IMECE, Atlanta, GA, Nov. 1996.
- (P34) "Open Architecture Controllers for Machine Tools," University of Michigan, Manufacturing Systems Seminar, Dearborn, MI, May 1996.
- (P33) "NSF IUCRC for Dimensional Measurement and Control in Manufacturing, and Vibration Reduction in CMM's," Distinguished Lecturer Series in Manufacturing, University of California, Davis, CA, Nov. 1995.
- (P32) "Dynamics and Control of Rotating Shafts, With Application to Drilling," South West Mechanics Lecture presented at Univ. Oklahoma (Norman, OK), Southern Methodist Univ. (Dallas, TX), South West Research Institute (San Antonio, TX), and Univ Houston (Houston, TX), Sept. 1995.
- (P31) "Manufacturing Research and Education in the USA and at University of Michigan," Scania Corporation, Sweden, May 1995.
- (P30) "Control of a Drilling Process," Royal Institute of Technology, Stockholm, Sweden, May 1995.
- (P29) "Dynamics and Control Research with Automotive Applications," Ford Research Laboratory Seminar, Ford Motor Company, Dearborn, MI, Apr. 1995.
- (P28) "Control of Machining Processes," NSF Workshop on Nonlinear Dynamics and Manufacturing, University of California, San Diego, CA, Mar. 1995.
- (P27) "Control of Machining: A Drilling Application" Univ. of California, Berkeley, CA, Feb. 1995.
- (P26) "Flexible Line Boring," Warsaw University of Technology, Warsaw, Poland, May 1994.
- (P25) "Education and Research in Manufacturing at the University of Michigan," Warsaw University of Technology, Warsaw, Poland, May 1994.
- (P24) "Predictive Process Control," National Center for Manufacturing Sciences, Annual Meeting and Conf., Anaheim, California, May 1994.
- (P23) "Panel on Industry-University-Government Cooperative Research," ASME Winter Annual Meeting, New Orleans, Louisiana, Dec. 1993.
- (P22) "Research in Dynamics and Control of Manufacturing Systems," Istanbul Technical University, Istanbul, Turkey, Aug. 1993.
- (P21) "An Nonlinear Adaptive Observer for On-Line Tool Wear Estimation in Turning," Department of Mechanical Engineering, Wayne State University, Detroit, MI, Nov. 1991.
- (P20) "Self-Tuning Adaptive Control and Supervisory Control," Next Generation Controller Technology Review Board, St. Petersburg, FL, Nov. 1990.
- (P19) "Axially Moving Material Systems: Application to Automotive Belt Vibrations," General Motors Advanced Engineering Staff, Technical Center, Warren, MI, May 1990.
- (P18) "Modeling and Finite Element Analysis of Drill Bit Vibrations," General Motors Research Laboratories, Technical Center, Warren, MI, Oct. 1989.
- (P17) "Experimental Results in Modeling, Analysis, and Control of Flexible Multi-Body Systems," NASA/UCLA 5th Annual SCOLE Workshop, Lake Arrowhead, CA, Oct. 1988.
- (P16) "Experimental Validation of Flexible Robot Arm Modeling and Control," NASA Workshop on Computational Aspects in the Control of Flexible Systems, Williamsburg, Virginia, July 1988.
- (P15) "Simulation of Experimental Structures With Impact: Experimental Validation," NASA Workshop: Computational Aspects in Control of Flexible Systems, Williamsburg, VA, July 1988.
- (P14) "Control of a Flexible Robot Arm", Department of Aerospace Engineering, Istanbul Technical University, Istanbul, Turkey, Dec. 1986.
- (P13) "An Adaptive Observer for Tool Wear Sensing in Turning", Department of Mechanical Engineering, Bogazici University, Istanbul, Turkey, Dec. 1986.
- (P12) "Implementation of a Model Reference Adaptive Force Controller in Milling", Sibley School of Mechanical and Aerospace Engineering, Cornell University, Ithaca, NY, Dec. 1985.
- (P11) "Lectures on Dynamics and Control of Manufacturing Systems," Northwestern Polytechnical University, Xian, China, Aug., 1985 .
- (P10) "Lectures on Dynamics and Control of Manufacturing Systems," Nanjing Institute of Technology, Nanjing, China, Aug. 1985.

- (P9) "Lectures on Dynamics and Control of Manufacturing Systems," Jiao Tong University, Shanghai, China, July 1985.
- (P8) "Applications of Adaptive Control Theory to Metal Cutting," Department of Mechanical Engineering, Ohio State University, Columbus, Ohio, May 1985.
- (P7) "Applications of Adaptive Control Theory to Metal Cutting," Corporate Research and Development, General Electric Company, Schenectady, NY, Feb. 1985.
- (P6) "Adaptive Control Systems for Machine Tools," General Motors Research Laboratories, Warren, MI, Feb. 1984.
- (P5) "Research in Control of Manufacturing Processes," Industrial Technology Institute, Ann Arbor, MI, Jan. 1984.
- (P4) "Adaptive Control of Machine Tools," General Motors Institute, Flint, MI, May 1982.
- (P3) "Variable-Gain Adaptive Control Systems for Machine Tools," NSF Workshop on Manufacturing Systems and Productivity, Dearborn, Mar. 1982.
- (P2) "On-Line Saw Stability Control Using Electro-magnets," Workshop on Design and Operation of Circular and Band Saws, Richmond, CA, Sept. 1981.
- (P1) "Analysis of the Dynamic Behavior of Band Saws," 33rd Annual Meeting of the Forest Products Research Society, San Francisco, July 1979.

Articles in Popular Press that Quote A.G. Ulsoy

- WWJ Radio, "Robotics Conference Heralds Expansion of Industry in Michigan" *Great Lakes IT Report*, August 7, 2008.
- Saini, Ekjyot, "Researchers vie for state grants," *Michigan Daily*, April 11, 2006.
- Brown, Alan S., "Redefining the ME," *Mechanical Engineering*, September 2004,
- Mullen, R., "A Consensus Has Emerged On Car Of The Future," *New Technology Week*, April 21, 2003, pp 1 and 8.
- DeGaspari, J., "All in the Family," *Mechanical Engineering*, Feb. 2002, pp 56-58.
- Mellor, C., "Quick Change Artists," *Ontario Technologist*, Jan./Feb. 2002, pp 12-15.
- Anon, "Breakaway (A Special Report): 20th Century Legacy – Henry Ford: Transportation for All," *Wall Street Journal*, Nov. 29, 1999.
- Fuhrmann, H., "The 50: People who Most Influenced Business This Century; Ford Offered the Masses Freedom of Movement," *Los Angeles Times*, Oct. 25, 1999

Professional Societies

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- Fellow, American Society of Mechanical Engineers (ASME).
- Fellow, Society of Manufacturing Engineers (SME)
- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, American Society of Engineering Education (ASEE).
- Member, Research Club of the University of Michigan.
- Associate Member, CIRP: The International Academy for Production Engineering.
- Member, Sigma Xi - The Scientific Research Society.