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University of Central Florida
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EDUCATION

PhD, Mechanical Engineering, Michigan State University, 2002
- Research area: Dynamics and control of nonholonomic systems
- Committee: Dr. R. Mukherjee (advisor), Dr. S. Shaw, Dr. H. Khalil, Dr. S. Mahanti

MS, Mechanical Engineering, Michigan State University, 2000
- Research area: Design and analysis of nonholonomic systems
- Committee: Dr. R. Mukherjee (advisor), Dr. S. Shaw, Dr. A. Diaz, Dr. B. Feeny

B.Tech. (Honors), Mechanical Engineering, Indian Institute of Technology, Kharagpur, 1997

PROFESSIONAL EXPERIENCE

Assistant Professor, 06/11 – present
Department of Mechanical and Aerospace Engg., University of Central Florida

Assistant Professor, 09/07 – 06/11
Department of Mechanical Engineering, Rochester Inst of Tech

Visiting Assistant Professor, 08/06 – 08/07
Department of Mechanical Engineering, Michigan State University

Control Systems Engineer, 09/02 – 08/06
Emmeskay Inc. (Now LMS International), Plymouth, MI (www.emmeskay.com)

Intern Engineer, 05/02 – 08/02
Emmeskay Inc. (Now LMS International), Plymouth, MI

Research Assistant, 01/99 – 08/02
Department of Mechanical Engineering, Michigan State University

Teaching Assistant, 08/98 – 12/98
Department of Mechanical Engineering, Michigan State University

Graduate Engineer Trainee, 06/97 – 07/98
Tata Motors, India (www.tatamotors.com)

Industrial Training, 05/96 – 07/96
Tata Motors, India

RESEARCH TOPICS

Recent Energy Systems Research

- *Energy systems modeling and simulation*
  - Development of detailed mathematical models of power plants such as reformer based SOFC (Solid Oxide Fuel Cell) systems or power plant subsystems such as Heat Recovery Steam Generators (HRSG) in steam turbine power plants.
  - Development of a hierarchical arrangement of model libraries that facilitates simulation with different fuels (methane, JP8, etc.), reformers (Steam Reformer, Partial Oxidation Reformer, Auto-thermal Reformer) and stack technologies (Planar, Tubular SOFC).
  - Development of storage element models (Ultra-capacitor, Li-Ion, Lead-acid) and renewable energy system (wind-turbine system) models.

- *Real-time simulation and energy system emulation*
  - Enables control verification and validation
  - Hardware-in-the-loop system combines mathematical models with hardware components.
  - The system is used to investigate topological constraints posed by different power management approaches.

- *Fuel cell transient control and characterization*
  - Transient characteristics critical in control design for fuel cell based energy systems.
  - Leads to prediction of transient behaviors with varied time scales and extraction of steady state properties.
  - Prevention of fuel starvation and enabling fuel optimization.
  - Model independent characterization and derivation of invariant properties for a class of reformer based SOFC systems.
  - Abstraction and generalization to theoretical problem in multi-variable systems.

- *Power management of hybrid energy systems*
  - Hybridization of SOFC with ultra-capacitors and Li-Ion batteries are explored.
  - Optimal load-sharing between fuel cell and battery/super-capacitor is necessary to prolong stack life and improve transient load-following capability.
  - Robust nonlinear, adaptive, decentralized approaches, etc.

- *Wind-turbine systems*
  - Power optimization and blade pitch modulation strategies for wind-turbine systems at various wind-speed ranges, under limited sensing.
  - Switching between different energy harvesting strategies across operating regimes, and its implications on equilibria and stability.

- *Airborne wind energy systems*
  - Explore the idea of energy harvesting from strong wind fields at high altitudes.
  - Explore tethered/non-tethered options for energy harvesting.
  - Model based research on tethered balloons and airfoils.
  - Explore non-tethered devices such as UAVs for combined flight and energy harvesting.
  - Model based research on the viability of autorotation for airborne energy harvesting.

- *Plasma-based fuel reformers*

- Plasma based reforming techniques has the potential for providing better energy efficiency of hydrogen production from hydrocarbons.
- Modeling and system dynamics of plasma based reformers are explored.

Robotics Research

- *Circular Robots with diametrically translating legs*
  - Novel robotic mechanism design based on cellular locomotion.
  - Mechanism leads to effective shape morphing.
  - Planar geometry based locomotion design.
  - Overall gait generated by switching between two modes of locomotion.

PRIOR RESEARCH AND INDUSTRIAL PROJECTS

Fuel Cell Simulation and Control (*during employment in industry*)

- *Solid Oxide Fuel Cell modeling and control design*
  - Plant model development and control design for an SOFC based APU (Auxiliary Power Unit) in collaboration with Delphi Corporation.
  - Design of scalable and configurable model architectures on MATLAB/ Simulink platforms for complex systems.

- *Automated control verification and validation platform*
  - Development of real-time simulation platform for fuel cell systems for Hardware-In-the-Loop testing.
  - Design and implementation of an automated control algorithm verification and validation platform for the Delphi SOFC system using this real-time simulation environment.

- *PEM fuel cell test-stand development*
  - Real-time simulation of PEMFC as a power source for a Switched Reluctance Motor, real-time simulation of a PEMFC hybrid vehicle.

Spherical Mobile Robot Research (*doctoral research*)

- *Dynamics and Control of a Self-Propelling Sphere Leading to the Design of a Spherical Mobile Robot*
  - The spherical robot with enhanced mobility and a novel propulsion mechanism was conceptualized with potential applications in planetary explorations, reconnaissance, etc.
  - Multiple propulsion mechanisms were proposed and analyzed to determine relative merits, using Lagrangian and Newton-Euler formulations, and simulations.
  - A major area of concentration was the problem of feedback stabilization of the rolling sphere, referred to in nonholonomic systems literature as the "Ball-Plate Problem."
  - First to develop a feedback control for exponential stabilization of the rolling sphere.
  - Transformed the motion planning problem of the rolling sphere to an isoperimetric problem and obtained a class of elegant solution trajectories that evolved into a computationally efficient control algorithm.

- *Dynamics of a self-propelling wheel with reciprocating masses*
  - A precursor to the study of sphere-dynamics, the research gave elegant results, and valuable insight into the main problem.

- Achieved optimal tracking of reference wheel-acceleration profiles with bounded trajectories of unbalance masses.

Optimal Control of Hot Air Balloons (*additional research as graduate student*)

- The research was aimed at enhancing the utilities of hot air balloons as inexpensive aerial vehicles for surveying, with possible extension to planetary explorations.
- Formulated the optimal control problem for trajectory planning of a hot air balloon in presence of linear wind fields using a unidirectional switching type control input.
- Proposed an iterative method for obtaining the optimal trajectory by alternately switching between the linear and the non-linear models.

Research on Switched Systems (*collaboration with academia while employed in industry*)

- Development of theoretical framework for shared-sensing based control of systems with reversible transducers.
- Demonstration of shared-sensing through experiments.
- Optimal control of switched systems.

Automotive Powertrain Modeling (*while employed in industry)*

- Plant model development, model configurability and model management using Modelica.
- Modeling of conventional IC engines (mean value as well as cylinder based models), VVT (Variable Valve Timing) technology, and automotive powertrains in Modelica.
- Developed an automotive powertrain library in VHDL-AMS. Modeled standard and hybrid electric automotive transmissions.

FUNDED GRANTS

- A Novel Approach for Oceanographic Explorations: Multi-Scale Modeling and Simulation using CFD Enabled by AUVs Data – PI (National Science Foundation), $462,577 (2012 – 2015)
- Consulting with Redox for Fuel Cell System and Controller Design and Implementation – PI (Redox Power Systems, LLC), $12,000 (2013-2014)
- First Steps toward the Development of a T3000 based Dynamic Process Simulation Module (Siemens Energy, Inc.), $25,000 (2013-2014)
- Controlling Transient Behavior of Solid Oxide Fuel Cells Using an Invariant Property – PI (National Science Foundation), $240,000 (2010 – 2014)
- Novel Techniques for Control of Distributed Energy Systems with Application to Smart Grids – PI (RIT, Office of the Vice-President of Research), $24,600 (2009 – 2010)
- Model based Design Optimization and Control Development for Integrated High Temperature Fuel Cell Systems – PI (Office of Naval Research), $157,535 (2009 – 2010)
- Design and implementation of a novel mobile robot conducive to miniaturization – PI (RIT, Office of the Dean of Engineering), $10,000 (2009)
- Application of atmospheric micro-plasma to fuel reforming – Co-PI (National Science Foundation), $53,390 (2008-2009)
- Model-based Performance Characterization and Control Design for Integrated Fuel Cell Systems – PI (Office of Naval Research), $77,655 (2008 – 2009)

- Fuel cell Systems Research Initiation Grant – PI (RIT, Office of the Vice-President of Research), $70,000 (2007 – 2008)

COURSES TAUGHT

- Mechanical Vibrations (ME461, MSU)
- Control Systems (ME451, MSU)
- Statics (0304-336, RIT)
- Mechanics (0304-347, RIT)
- Dynamics (0304-359, RIT)
- Feedback Control (EML4312C, UCF)
- System Control (EML 5311, UCF)

New courses taught or significantly restructured:

- Advanced Control Systems (0304-843, RIT): Restructured course
- Feedback Control (EML4312C, UCF): Restructured and rebuilt laboratory component
- Digital Control in Mechatronics (EML4804C, UCF) : Restructured course
- Special Topic: Turbomachinery Design for Mechanical & Dynamics Integrity and Reliability – Rotordynamics (EML5937, UCF): New co-taught course
- Multivariable Control System Design (EML 6938, UCF): New course
- Introduction to Vibrations and Control (EML 4225, UCF): New course
- Intermediate Vibrations and Control (EML 4313, UCF): New course

STUDENT INVOLVEMENT AND ADVISING

- Advised 10 graduate students.
- Supervised 6 undergraduate students in research.
- Sponsored and advised 2 senior design teams (5 students per team) in airborne wind energy harvesting systems.
- Currently advising 6 graduate students and 1 undergraduate student.
- Involved a total of 7 undergraduate students and 16 graduate students in research between the 2007-2008 and current academic year.
- Committee member in over 15 MS thesis committees and 5 PhD thesis committees.
- Faculty advisor for UCF SAE student organization since 2011. Advising about 50 student members between the UCF Formula and Baja teams. Responsibilities include help with finances and purchases, advising senior designs, serving as the liaison between the teams and the MAE department, and facilitating equipment and space availability.

STUDENT THESIS

MS Thesis

- "Steady-State and Transient Analysis of a Steam Reformer Based Solid Oxide Fuel Cell System."
  MS Thesis by Sridharan Narayanan, 2008.

- "Dynamic Modeling and Analysis of Multiple SOFC System Configurations."
  MS Thesis by Andrew Slippey, 2009.

- "Locomotion of Circular Robots with Diametrically Translating Legs: Design, Analysis and Fabrication."
  MS Thesis by Eric Steffan, 2010.

- "Robust Control Strategies for Hybrid Solid Oxide Fuel Cell Systems."
  MS Thesis by Tahar Allag, 2010.

- "Dynamic Modeling and Characterization of a Wind Turbine System Leading to Control Development."
  MS Thesis by Greg Semrau, 2010.

- "Modeling and Start-up Simulation of a Hybrid SOFC System with JP-8 Fuel."
  MS Thesis by Kalyan Nishtala, 2010.

- "Minimizing Temperature Droop and Power-line Flicker in a Lamp-heated Xerographic Fusing System."
  MS Thesis by Jeffrey Swing, 2011.

- "Robust Adaptive Control for a Hybrid Solid Oxide Fuel Cell System."
  MS Thesis by Steven Snyder, 2011.

- "Investigating Controller Performance in Hybrid SOFC Systems in the Presence of Unknown Nonlinearities."
  MS Thesis by William Nowak, 2011.

- "Switching-Based State-of-Charge Estimation of Lithium-Ion Batteries."
  MS Thesis by Ying Chen Su, 2011.

- "Analytical and Experimental Studies on Air-borne Wind Energy Harvesting."
  MS Thesis by Sigitas Rimkus, *expected* in Spring 2014.

- "An Introductory Study of the Dynamics of Autorotation"
  MS Thesis by Bilal Salih, *expected* in Spring 2014.

- "Theoretical and Experimental Investigations on Decentralized Control in Hybrid Energy Systems and Power Grids"
  MS Thesis by Amit Bhattacharjee, *expected* in Spring 2014.

- "An Investigation of Structural Health Monitoring through Compressive Sensing"
  MS Thesis by Vaahini Ganesan, *expected* in Summer 2014.

PhD Dissertations

- "Decentralized Power Management and Transient Control in Hybrid Fuel Cell Ultra-Capacitor Systems"
  PhD Dissertation by Omid Madani, *expected* in Spring/Summer 2014.

JOURNAL PUBLICATIONS

- "Controller Performance in Hybrid Fuel Cells with Unknown Nonlinearities,"
  T. Das, and W. Nowak, *under preparation*

- "Decentralized Control of a Fuel Cell Ultra-Capacitor Hybrid Network: Analysis and Experiments"
  O. Madani, A. Bhattacharjee, T. Das, *submitted to IEEE Transactions on Control Systems Technology.*

- "Nonlinear Control of Variable Speed Wind Turbines with Switching across Operating Regimes."
  G. Semrau, S. Rimkus, T. Das, *submitted to the ASME Journal of Dynamic Systems Measurement and Control.*

- "Robust Adaptive Control of Solid Oxide Fuel Cell Ultra-Capacitor Hybrid Systems."
  T. Das, S. Snyder, IEEE Transactions on Control Systems Technology, Vol. 21, No. 2, March 2013.

- "Robust Control of Solid Oxide Fuel Cell Ultra-Capacitor Hybrid Systems."
  T. Allag, T. Das, IEEE Transactions on Control Systems Technology, Vol. 20, No.1, January 2012.

- "Steady-State and Transient Analysis of a Steam Reformer based Solid Oxide Fuel Cell System."
  T. Das, S. Narayanan, R. Mukherjee, ASME Journal of Fuel Cell Science and Technology, Vol. 7, No.1, February 2010.

- "Experimental Study of a Planar Atmospheric-pressure Plasma Operating in the Microplasma Regime."
  A. J. Wagner, D. Mariotti, K. J. Yurchenko, T. K. Das, Physical Review E, Vol. 80, 2009.

- "Swing-Up Control of the Pendubot: An Impulse-Momentum Approach."
  T. Albahkali, R. Mukherjee, T. Das, IEEE Transactions on Robotics, Vol. 25, No. 4, August 2009, pp. 975-982.

- "Fractional Derivative Reconstruction of Forced Oscillators."
  G. Lin, B. F. Feeny, T. Das, Nonlinear Dynamics, Vol. 55, No. 3, February 2009, pp. 239-250.

- "Shared Sensing and Control using Reversible Transducers."
  T. Das, R. Mukherjee, IEEE Transactions on Control Systems Technology, Vol. 17, No. 1, 2009, pp. 242-248.

- "Real Time Software-in-the-loop Simulation for Control performance Validation."
  X. Chen, M. Salem, T. Das, and C. Xiaoqun, Simulation: Transactions of The Society for Modeling and Simulation International, Vol. 84, No. 8-9, 2008, pp. 457-471.

- "Optimally Switched Linear Systems."
  T. Das, R. Mukherjee, Automatica, Vol. 44, No. 5, 2008, pp. 1437-1441.

- "Reconfiguration of a Rolling Sphere: A Problem in Evolute-Involute Geometry."
  T. Das, R. Mukherjee, ASME Journal of Applied Mechanics, Vol. 73, No. 4, July 2006, pp. 590-597.

- "Exponential Stabilization of the Rolling Sphere: An Intractable Nonholonomic System."
  T. Das, R. Mukherjee, Automatica, Vol. 40, 2004, pp. 1877-1889.

- "Optimal Trajectory Planning for Hot-Air Balloons in Linear Wind Fields."
  T. Das, R. Mukherjee, J. Cameron, AIAA Journal of Guidance, Control, and Dynamics, Vol. 26, No. 3, May-June 2003, pp. 416-424.

- "Dynamic Analysis of Rectilinear Motion of a Self-Propelling Disk with Unbalance Masses."
  T. Das, R. Mukherjee, ASME Journal of Applied Mechanics, Vol. 68, No. 1, Jan. 2001, pp. 58-66.

CONFERENCE PUBLICATIONS

- "Transient Control in Multivariable Systems: A Study Motivated by Fuel Cells,"
  O. Madani, and T. Das, ASME 2013 Dynamic Systems and Control Conference, October 2013, Palo Alto, CA.

- "An Application of the Autogyro Theory to Airborne Wind Energy Extraction,"
  S. Rimkus, and T. Das, ASME 2013 Dynamic Systems and Control Conference, October 2013, Palo Alto, CA.

- "Decentralized Control of a Fuel Cell Ultra-capacitor Hybrid Network,"
  O. Madani, and T. Das, American Control Conference, Washington DC, USA, 2013.

- "Stability Analysis of a Tethered Airfoil,"
  S. Rimkus, T. Das, and R. Mukherjee, American Control Conference, Washington DC, USA, 2013.

- "Investigating Controller Performance in Hybrid SOFC Systems with Unknown Nonlinearities,"
  T. Das, and W. Nowak, American Control Conference, Montreal, Canada, 2012.

- "Nonlinear Control of Variable Speed Wind Turbines With Switching Across Operating Regimes,"
  T. Das, G. Semrau, and S. Rimkus, ASME 2011 Dynamic Systems and Control Conference (DSCC2011), October 31–November 2, 2011, Arlington, VA

- "Two Dimensional Modeling and Simulation of a Tethered Airfoil System for Harnessing Wind Energy,"
  T. Das, R. Mukherjee, R. Sridhar and A. Hellum, ASME 2011 Dynamic Systems and Control Conference (DSCC2011), October 31–November 2, 2011, Arlington, VA

- "Adaptive Control of a Solid Oxide Fuel Cell Ultra-Capacitor Hybrid System"
  T. Das, S. Snyder, American Control Conference, San Francisco, CA, 2011.

- "Observer based Transient Fuel Utilization Control for Solid Oxide Fuel Cells"
  T. Das, A. Slippey, ASME Dynamic Systems and Control Conference, September 2010, Cambridge, MA.

- "Robust Nonlinear Control of Fuel Cell Ultra-Capacitor Hybrid System"
  T. Allag, T. Das, American Control Conference, June 2010, Baltimore, MD.

- "Locomotion of Circular Robots with Diametrically Translating Legs"
  E. Steffan, T. Das, ASME Dynamic Systems and Control Conference, October 12-14, 2009, Hollywood, CA.

- "An Adaptive Observer Design for Recirculation based Solid Oxide Fuel Cell Systems using Cell Voltage Measurement"
  T. Das, American Control Conference, June 2009, St. Louis, MO.

- "A Feedback based Load Shaping Strategy for Fuel Utilization Control in SOFC Systems"
  T. Das, R. Weisman, American Control Conference, June 2009, St. Louis, MO.

- "An Impulse-Momentum Approach to Swing-Up Control of the Pendubot."
  T. Albahkali, R. Mukherjee, T. Das, IEEE/RSJ International Conference on Intelligent Robots and Systems, September 2008, Nice, France.

- "Observer Design For A Steam Reformer Based Solid Oxide Fuel Cell System With Anode Recirculation."
  T. Das, R. Mukherjee, ASME International Mechanical Engineering Congress and Exposition, November 2007, Seattle, WA.

- "Model Based Characterization of Transient Response of Solid Oxide Fuel Cell Systems."
  T. Das, S. Narayanan, R. Mukherjee, ASME International Mechanical Engineering Congress and Exposition, November 2007, Seattle, WA.

- "Control of a Double Pendulum through Energy Management of the Underactuated Link."
  T. Albahkali, R. Mukherjee, T. Das, ASME International Mechanical Engineering Congress and Exposition, November 2007, Seattle, WA.

- "Design of Switching Laws for Shared Sensing and Control by Reversible Transducers."
  T. Das, R. Mukherjee, 26th American Control Conference, July 2007, New York City, NY.

- "Development of an Automated Verification and Validation Platform Using Hardware-In-the-Loop Simulation for a Solid Oxide Fuel Cell Control System."
  J. Absmeier, T. Das, S. Gopalswamy, R. Paike, 4th International ASME Conference on Fuel Cell Science, Engineering and Technology, June 2006, Irvine, CA.

- "An Extension of the Minimum Principle with Application to Switched Linear Systems."
  T. Das, R. Mukherjee, 25th American Control Conference, June 2006, Minneapolis, MN.

- **"**Evaluation of the Simplorer Modeling Platform for Automotive Powertrain Applications."
  T. Das, M. Tiller, S. Gopalswamy, CONVERGE, An Application Workshop for High Performance Design, Ansoft, November 2005, Detroit, MI.

- "Real-Time Simulation of Proton Exchange Membrane Fuel-Cell Hybrid Vehicle", C. Dufour, T. Das, S. Akella, Global Powertrain Congress, September 2005, Ann Arbor, MI.

- "Reconfiguration of a Rolling Sphere: A Problem in Evolute-Involute Geometry", T. Das, R. Mukherjee, AAS Shuster Symposium, Buffalo, NY, 2005.

- "Speed Control for a Switched Reluctance Motor Drive Powered by a Fuel Cell." X. Chen, M. Salem, T. Das, S. Gopalswamy, 24th American Control Conference, June 2005, Portland, OR.

- "Real Time Simulation for Speed Control of Switched Reluctance Motor Drive Powered by a Fuel Cell System." M. Salem, T. Das, X. Chen, S. Akella, S. Sivashankar, ASME Power Congress, April 2005, Chicago, IL.

- "Reconfiguration of a Rolling Sphere: A Problem in Evolute-Involute Geometry." T. Das, R. Mukherjee, ASME IMECE November 2004, Anaheim, CA.

- "Exponential Stabilization of the Rolling Sphere: Stability Analysis." T. Das, R. Mukherjee, 42nd IEEE Conference on Decision and Control, December 2003, Maui, HI.

- "Reconstructing the Phase Space with Fractional Derivatives." B. F. Feeny, G. Lin, T. Das, Proceedings of ASME International Design Engineering Technical Conferences, September 2003, Chicago, IL.

- "Configuration Control of a Rolling Sphere: Application to a Spherical Mobile Robot." T. Das, R. Mukherjee, 14th US National Congress on Theoretical and Applied Mechanics, Blacksburg, VA, 2002.

- "Feedback Stabilization of a Spherical Mobile Robot." T. Das, R. Mukherjee, 2002 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2002), September 2002, Lausanne, Switzerland.

- "Optimal Trajectory Control of Hot Air Balloons in Linear Wind Fields." T. Das, R. Mukherjee, J. M. Cameron, 40th AIAA Aerospace Science Meeting & Exhibit, January 2002, Reno, NV.

- "Design Considerations in the Development of a Spherical Mobile Robot." T. Das, R. Mukherjee, H. Yuksel, Proc. SPIE Vol. 4364, SPIE 15th Annual International Symposium on Aerospace/Defense Sensing, Simulation, and Controls, Orlando, FL, April 2001.

- "Dynamics of a Self-Propelling Wheel with Three Eccentric Masses." T. Das and R. Mukherjee, Proc. ASME International Mechanical Engineering Congress and Exposition (IMECE), Dynamics and Controls Division, Orlando, FL, November 2000.

OTHER PUBLICATIONS

- "Feedback Stabilization of the Rolling Sphere: An Intractable Nonholonomic System."

T. Das, PhD Dissertation, Michigan State University, Department of Mechanical Engineering, 2002.

- "Dynamics of Self-Propulsion with Rolling Constraints".
  T. Das, MS Thesis, Michigan State University, Department of Mechanical Engineering, 2000.

INVITED PRESENTATIONS

- "Dynamics and Control of Energy Systems: Applications in Hybrid Fuel Cells and Wind Energy."
  Presentation at the Mechanical Engineering Department, University of Washington, Seattle, WA, February, 2013.

- "Dynamic Analysis and Control Design in Mechatronics: Application to Robotics and Energy Systems."
  Presentation at Mechanical and Aerospace Engineering Department at SUNY, Buffalo, NY, November 2008.

- "A Control Strategy for Load Distribution in Hybrid Fuel Cell Systems."
  Presentation at ONR Industry Day on High Temperature Fuel Cell, Arlington, VA, August 2008.

ARTICLES REVIEWED FOR

- SAGE: Journal of Vibration and Control
- ASME Journal of Dynamic Systems, Measurement and Control
- ASME Journal of Solar Energy Engineering
- IEEE Transactions on Control Systems Technology
- Automatica (Elsevier)
- SIAM Journal of Control and Optimization
- IEEE/ASME Transactions on Mechatronics
- ACM Transactions on Embedded Computing Systems
- ASME Journal of Thermal Science and Engineering Applications
- IEEE Conference on Decision and Control (CDC)
- American Control Conference (ACC)
- ASME International Mechanical Engineering Congress and Exposition (IMECE)
- IEEE International Conference on Robotics and Automation (ICRA)
- ASME Dynamic Systems and Control Conference (DSCC)
- ASME International Design Engineering Technical Conference (IDETC)
- IEEE International Conference on Intelligent Robots and Systems (IROS)

OTHER PROFESSIONAL ACTIVITIES

- Served on NSF proposal review panels (2009, 2010).
- Session chair/co-chair at American Control Conference (2009 - 2014).
- Session chair/co-chair at ASME Dynamic Systems and Control Conference (DSCC) (2010 - 2014).
- Conference chair for ASME DSCD Robotics technical committee (2009-2010).

- Organized Invited Session titled “Biologically Inspired Design, Control and Planning for Robotics” at ASME DSCC, CA, October 2009.
- Organized Frontier Industry/Educational Session titled “Perspectives on Energy Futures” at the ASME DSCC in Cambridge, MA, September 2010.
- Co-Founded the Energy Systems technical committee (ESTC) within the ASME Dynamic Systems and Control Division in 2009. Secretary from 2009-2012, Co-chair since 2012. URL: http://www.asme-dscd.org/dscd-technical-committees/energy-systems
- Organized invited sessions at ACC and ASME DSCC (2009-2014).

OTHER OUTREACH ACTIVITIES

- Demonstrated laboratory research at IMAGINE RIT festival, (2008, 2009).
- Hosted student visitors during ‘Colleges and Careers,’ 2009.
- Demonstrated laboratory research to middle school students during RIT CBET Bioscience Summer Camp, 2009.
- Presented research at UCF CECS open house, CECS information sessions, National Merit Scholar tours, 2012, 2013.
- Graduate students of the lab participated in day-long “Camp Connect” event for middle school students, 2012, 2013.
- For more information visit: http://mmae.ucf.edu/faculty/TDas

UNIVERSITY SERVICE ACTIVITIES

- Served on faculty search committees at RIT.
- Served on faculty and staff search committees at UCF.
- Served on several PhD qualifying exam committees at UCF.
- Served on departmental ABET accreditation committees at both RIT and UCF. Actively involved in defining measures, setting up a process for data collection and executing the plans for selected courses in the undergraduate curriculum.
- Served on career and mass advising activities at both RIT and UCF.