

Sesh Commuri

Technical Director, Nevada Advanced Autonomous Systems
Innovation Center
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Engineering
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A. Professional Preparation

1. Doctor of Philosophy in Electrical Engineering, May 1996.
University of Texas, Arlington, Texas.
Dissertation: *A Framework for Intelligent Control of Nonlinear Systems*.
Advisor: **Prof. Frank L. Lewis**
2. Master of Technology in Electrical Engineering, May 1989.
Indian Institute of Technology, Kanpur, India.
Thesis: *Collision-Free Path Planning for Robot Manipulators*.
Advisor: **Prof. Arindam Ghosh**
3. Bachelor of Technology in Electrical and Electronics Engineering, August 1985.
Jawaharlal Nehru Technological University, Hyderabad, India.

B. Appointments

1. University of Nevada, Reno, since January 2016

Technical Director, Nevada Advanced Autonomous Systems Innovation Center
Professor, Department of Electrical and Biomedical Engineering

2. University of Oklahoma, 2002-2015

Gerald Tuma Presidential Professor, School of Electrical and Computer Engineering,
Associate Professor 1/14/2002 – 7/31/2011, tenured 2008, Professor 2010, Presidential
Professor 2013.

Member, University Research Council, Office of the Vice President for Research, University
of Oklahoma, August 2014 - July 2017

- Evaluation of research proposals for internal funding by the University Vice President for Research

- Evaluation of faculty nominations for university-wide awards by the University Vice President for Research

Chairman, Graduate Studies Committee, School of Electrical and Computer Engineering, University of Oklahoma, since August 2013

- Managed the transition to electronic processing of graduate applications
- Implemented mechanisms for Fellowships to recruit quality graduate students

Member, Committee 'A', School of Electrical and Computer Engineering, University of Oklahoma, 2010 – 2012

- Responsible for annual performance evaluations of ECE faculty
- Mentoring and evaluating performance of tenure track faculty

Member, Undergraduate Studies Committee, School of Electrical and Computer Engineering, University of Oklahoma, 2007-2010.

3. **Editor-at-Large**, Journal of Intelligent and Robotic Systems, Springer, Netherlands, since 2014. Chief Editor: Dr. Ing. Prof. Kimon P Valvanis (Senior Editor 2012-2014; Area Editor 2006-2012).
4. **Staff Engineer**, Motorola, Champaign, Illinois, 5/15/2000 – 11/28/2001.
 - Coordinated international teams located in Sydney Australia; Beijing, China; Hyderabad, India; Libertyville, Illinois, USA; Luton, UK; Paris, France for the development of 3G cellular phone
 - Implemented Protocol Test Platform and tested functionality of 3G WCDMA phone hardware
 - First 3G Voice Call accomplished using hardware base station simulator
 - Championed software development methodologies and helped PTF group in Motorola Urbana-Champaign Software Development Center get CMM level 3 certification
5. **Senior Systems Engineer**, Vermeer Manufacturing Co., Pella, Iowa, 9/1/1999 – 5/15/2000
 - Controls design for Horizontal Directional Drills
 - Development of eStrategy for the ACS group in Vermeer
 - Recruitment and training of Systems Engineers
6. **Engineering Manager**, CGN & Associates, Peoria, Illinois, 2/1/1996 – 8/31/1999.
 - Business Development. Started the Embedded Systems Consulting group and grew it to over 40 employees with annual budget of over \$4M
 - Managed a staff of over 40 engineers including their performance evaluations, training, and career development
 - System Architect
 - Project Management
 - Technical Sales

7. **Research Associate**, Automation and Robotics Research Institute, University of Texas, Arlington, 9/1/1991 – 2/1/1996.
 - Control of ship-board antenna for acquiring and tracking satellites
 - Control of flexible link robot for improving yield in the manufacture of silicon wafers
8. **Research Associate**, School of Engineering Science, Simon Fraser University, Canada, 1/14/1991 – 8/31/1999.
9. **Research Engineer**, School of Electrical Engineering, Indian Institute of Technology, Kanpur, India, 3/1/1989 – 12/31/1990.
 - Hardware in the loop system simulator
 - Design of networked microcomputer systems for microprocessor education
10. **Research Associate**, School of Electrical Engineering, Indian Institute of Technology, Kanpur, India, 7/1/1987 – 2/28/1989.
11. **Customer Engineer**, Xerox Ltd., India, 8/15/1985 – 7/31/1986.

C. Patents and Invention Disclosures

1. S. Commuri and M. Zaman. "Method and apparatus for determining the stiffness of a roadway," USPTO, application number 61/621,259, filed April, 2013 (Also filed for International Patent Protection /PCT/US13/35504, 04/05/2013. Projected publication date 01/29/2015).
2. S. Commuri. "Method and apparatus for compaction of roadway materials," Chinese Patent ZL 2009 8 0142023.3, issued June 18, 2014.
3. S. Commuri and M. Zaman. "Method and apparatus for determining the stiffness of a roadway," ref. 68930.160, PCT Application no. PCT/US2013/035504, November 2013.
4. S. Commuri. "An apparatus to digitize residual limb of an amputee and a device to test a prosthetic socket for fit," Invention Disclosure 13NOR002, Office of Technology Development, University of Oklahoma, Norman, OK, July 2012.
5. S. Commuri. "An apparatus to design the sole for orthotic footwear," Invention Disclosure 13NOR005, Office of Technology Development, University of Oklahoma, Norman, OK, July 2012.
6. S. Commuri and F. Beainy. "Model of compactor-pavement interaction for closed loop control of vibratory compactors," Invention Disclosure 12NOR012, Office of Technology Development, University of Oklahoma, Norman, OK, November 2011.
7. S. Commuri and M. Zaman. "A method to determine the effective modulus of an asphalt pavement during its construction," Invention Disclosure 11NOR049, Office of Technology Development, University of Oklahoma, Norman, OK, August 2010 (PCT/US13/35504, April 05, 2013; European Patent Application No. 13772090.0, October 23, 2014).
8. S. Commuri and M. Zaman. "Method and apparatus for predicting the density of asphalt," USPTO, Patent 7,669,458, March 02, 2010.

9. S. Commuri. "Method and apparatus for compaction of roadway materials," USPTO, Patent 8,190,338 B2, May 29, 2012.

D. Awards and Recognition

1. **Engineering News-Record Top 25 Newsmakers for 2015.**
2. **Gerald Tuma Presidential Professor, University of Oklahoma, 2013** in recognition of outstanding teaching and research contributions.
3. **OU Vice President for Research 2011 Outstanding Research Impact Award**, May 2011
4. **OU Research Council**, Member, 2014-2017.
5. **Editor-at-Large**, Journal of Intelligent and Robotic Systems, Springer, Netherlands (Senior Editor 2012-2014; Area Editor 2006-2012).
6. **Panelist** (Invited), ENR FutureTech East Conference, New York, NY, September 30 – October 01, 2015.
7. **Presenter** (Invited), Volvo Ocean Race Technology Summit, Newport, RI, May 16-19, 2015.
8. **Invited Session Chair**, 2011 *IEEE Multi Systems Conference*, Denver, CO, September 28-30, 2011 (solicited and managed the invited sessions' portion of the conference).
9. S. Commuri and R. Fierro (Eds.), "**Special Issue on Unmanned Autonomous Vehicles**," *Journal of Intelligent Robotic Systems*, vol. 56, no. 1-2, September 2009.
10. Paper coauthored by my graduate student Anh Mai was **Nominated for Best Student Paper Award in Signal Processing, Systems Modeling and Control** at the International Conference on Informatics in Control, Automation, and Robotics, ICINCO 2013, Reykjavik, Iceland, July 2013.
11. **Recipient of the Best Paper Award in Signal Processing, Systems Modeling and Control** at the International Conference on Informatics in Control, Automation, and Robotics, ICINCO 2010, Funchal, Portugal, June 2010.
12. My graduate student **Anh Mai** received the "**Best Doctoral Research Proposal Award**" at the 2010 IEEE International Conference on Networking, Sensing, and Control, held in Chicago, Illinois, during April 11-13, 2010 for his research titled "Intelligent Control of a Human Ankle Prosthesis."
13. Technical Advisor – WorkSmart Inc., The student project team won the **First place** in the Donald W. Reynolds Oklahoma Governor's Cup Business Plan Competition, 2007.
14. Industry Advisor - Society of Women Engineers, University of Illinois, Urbana-Champaign. The team bagged the **First place** in the National SWE Conference in Denver, 2001.
15. Recipient of Controls Award from Caterpillar, Inc for the modeling and control of D11R Tractor, 1996.
16. Recipient of **Sigma Xi Outstanding Doctoral Dissertation** award at University of Texas at Arlington for 1995-1996.
17. Designated "**University Scholars Fellow**" at the University of Texas at Arlington, 1993.
18. Recipient of the National Science Foundation Grant Research Assistantship from the University of Texas at Arlington, Department of Electrical Engineering for the years 1991-1995.

19. Recipient of Rudolf Hermann Graduate Fellowship for academic excellence at the University of Texas at Arlington for the academic year 1993-94.
20. Recipient of UTA Alumni Fellowship for academic excellence for the academic years 1991-92 and 1992-93.

Several articles on my research in Asphalt Compaction have appeared in industry magazines and trade publications:

- J. Stafford, "OU's Asphalt Technology Aims to Increase Life of Roadways", in *The Daily Oklahoman*, February 09, 2016.
- S. Kirby, "When Asphalt Meets the Road", in *The Norman Transcript*, April 12, 2015.
- P. Grady, "Compass Briefs", in OKC BIZ, March 23, 2009.
- J. Zirlin, "Bringing Innovations to Market", in Public Roads, US Department of Transportation, Federal Highway Administration, vol. 72, #4, January-February 2009.
- "Intelligent Asphalt Compaction Analyzer", in Technology Partnerships Program, Focus Magazine, FHWA-HRT-08-010, January/February 2008.
- "Intelligent Asphalt Compaction Analyzer", in Highways for LIFE Program Overview, PCPS Showcase Accelerating innovation for the American driving experience, Mt Arlington, NJ October 14, 2008.
- Asphalt Contractor Technology Partnerships, July 8, 2008.
<http://www.forconstructionpros.com/online/Asphalt-News/Asphalt-Contractor-Technology-Partnerships/41FCP10363>
- ISSA Report, January 2008. <http://www.slurry.org/Newsletters/ISSAReport2007No4.pdf>
Also in 'ACEC: Industry News', March 2008.
www.acec.org/publications/newsbriefs2008/in-032708.cfm.
- "University of Oklahoma project aims to help roads last longer," in The Oklahoma City Journal Record, November 18, 2008.

E. Funding (Total Research Funding: \$19,354,584; Individual Research Expenditure: \$2,795,228)

1. Co-I, Oklahoma Center for the Advancement of Science and Technology, "Work Performance in Men with Trans-femoral Amputation," 10/2015 - 9/2018.
2. PI, Volvo Construction Equipment Company, "Field evaluation of ICA," 1/2015 - 12/2015.
3. Co-I, OU Health Sciences Center - Presbyterian Health Foundation Seed Grant, "Work-related Performance Characteristics in Men with TTAT at Risk for Residuum Injury," 10/1/2014 – 9/30/2015.
4. PI, Southern Plains Transportation Center, "Innovations in Construction of Climate Resilient Transportation Infrastructure," 10/2014 - 9/2016.
5. PI, Volvo Construction Equipment Company, "Intelligent Compaction of Pavements," 1/2014 - 12/2014.
6. PI, Volvo Construction Equipment Company, "Tech Transfer of Intelligent Compaction Analyzer," 1/2013 - 12/2013.
7. PI, Harrison Gypsum, "Design and Analysis of Concrete Mixers," 08/2012-05/2013.

8. PI, Speech-Soft, LLC, "Speech-enabled Interactive Voice Response (IVR)," 08/2012-05/2014.
9. PI, Oklahoma Department of Transportation, "Evaluation of Performance of Asphalt Pavements Constructed Using Intelligent Compaction Techniques," 10/2012-9/2014.
10. Co-PI, Oklahoma Department of Transportation, "Recommended Fatigue Test for Oklahoma Department of Transportation," 10/2012 -9/2013.
11. PI, Volvo Construction Equipment Company, "Continuous Compaction Control," 1/2012 - 12/2012.
12. PI, Volvo Construction Equipment Company, "Technology Transfer – Intelligent Asphalt Compaction Analyzer," 1/2012 - 12/2012.
13. PI, Oklahoma Department of Transportation, "New Asphalt Mix Design Program," 10/2011 - 9/2012.
14. PI, Oklahoma Transportation Center (OK-OSU), "Pavement Evaluation using a Portable Lightweight Deflectometer," 10/2011 - 9/2012.
15. Co-PI, Oklahoma Transportation center (OK-OSU) and Oklahoma Department of Transportation, "Develop Draft Chip Seal Cover Aggregate Specifications Based on Aggregate Imaging System (AIMS) Angularity, Shape and Texture Test Results," 10/2011 - 9/2014.
16. Co-PI, OU Health Sciences Center, "Residual Limb Measures During Biomechanical Work-Related Activities in Adult Oklahomans with Unilateral Trans-tibial Amputation due to a Traumatic Event," 3/2011 – 2/2012.
17. Co-PI, Oklahoma Center for the Advancement of Science and Technology, "Residual Limb Measures During Biomechanical Work-Related Activities in Adult Oklahomans with Unilateral Trans-tibial Amputation due to a Traumatic Event," 8/2011 - 7/2013.
18. PI, Volvo Construction Equipment Company, "Continuous Real-Time Measurement of Quality During the Compaction of Subgrade Soils," 1/2011 - 12/2011.
19. PI, Oklahoma Transportation Center (OK-OSU), "Pavement Evaluation using a Portable Lightweight Deflectometer," 10/2011 - 9/2012.
20. Co-PI, Oklahoma Transportation Center (OK-OSU), "Improved Cover Aggregate Specifications to Enhance Chip Seal Performance," 10/2011 - 9/2013.
21. Co-PI, Oklahoma Transportation Center (OK-OSU), "Enhancing Laboratory facilities in Asphalt Research and Education: Sharing to Gain," 6/2010 - 5/2011.
22. PI, Oklahoma Transportation Center (OK-OSU), "Continuous Real-Time Measurement of Quality During the Compaction of Subgrade Soils," 6/2010 - 5/2012.
23. PI, Volvo Construction Equipment Company, "Continuous real-time measurement of pavement quality during construction," 1/2010 – 12/2010.
24. PI, Volvo Construction Equipment Company, "Refinement and Development of IACA," 7/2007 - 10/2008.
25. Co-PI, Oklahoma - Economic Development Generating Excellence (EDGE), "Shape Engineering for Advanced Manufacturing," 1/2009 - 12/2010.
26. PI, Volvo Construction Equipment Company, "Continuous real-time measurement of pavement quality during construction," 10/2008 - 9/2009.

27. PI, Oklahoma Transportation Center (OK-OSU), "Continuous real-time measurement of pavement quality during construction," 10/2008 - 9/2009.
28. PI, Highways for Life (Hfl) program, Federal Highway Administration (FHWA), "Intelligent Asphalt Compaction Analyzer" 10/1/2007 - 9/30/2009.
29. PI, Volvo Construction Equipment Company, "Refinement and Development of IACA," 7/2007 - 10/2008.
30. PI, Cross disciplinary research grant, College of Engineering, OU, 5/2008 - 4/2009.
31. Co-PI, US Department of Transportation, "Inter-modal Containerized Freight Security," 5/2007 - 12/2008.
32. PI, GbG Energy Systems Inc., "Evaluation of Energy Optimizing Induction Motor Controls," 12/2006 - 03/2007.
33. Co-PI, Rockwell Collins Inc., "Hybrid Robust Control for Unmanned Aerial Vehicles," 1/2007 - 9/2007.
34. Co-PI, US Department of Transportation, "Inter-modal Containerized Freight Security," 7/2006 - 5/2007.
35. Co-PI, OK-TRAN, "Inter-modal Containerized Freight Security," 3/2006 - 11/2007.
36. PI, Oklahoma Department of Transportation, "Development of Field Calibration and Test Procedure for TransTech Systems' PQI 301 Non-Nuclear Density Gauge," 7/2006 - 10/2006.
37. Co-PI, DEPSCoR, Army Research Office (ARO), Department of Defense, "Adaption and Learning at All Levels in Intelligent Robot Teams for Reconnaissance, Surveillance, and Battlefield Assessment," 7/2003-6/2006.
38. PI, Oklahoma Department of Transportation, "A Field Testing Facility for Development of Intelligent Asphalt Compaction Analyzer," 9/2004-9/2004.
39. PI, OU-VPR, "A Field Testing Facility for Development of Intelligent Asphalt Compaction Analyzer," 11/2004-10/2005.
40. PI, Oklahoma Center for the Advancement of Science and Technology, "Intelligent Asphalt Compaction Analyzer," with Musharraf Zaman, 9/2003 - 11/2006.
41. PI, Broce Construction, "Intelligent Asphalt Compaction Analyzer," with Musharraf Zaman, 9/2003-11/2006.
42. PI, CASI, DOD-AF, "Non-Contact 3-D Digitization Scanning Technology," 6/2002 - 7/2002.

F. Journal Publications

1. M. Barman, S. Imran, M. Nazari, S. Commuri, and M. Zaman. (2015). "Quality Improvement of Subgrade through Intelligent Compaction," Paper 16-4340, Journal of the Transportation Research Board, Washington, D.C. (to appear).
2. M. Nazari, R. Ghabchi, M. Zaman, and S. Commuri. (2015). "Influence of Tensile Strain at Failure on Flexural Properties of a Cementitiously-Stabilized Subgrade Soil," Paper GMENG-1496, International Journal of Geomechanics (submitted September 2015).
3. A. Mai and S. Commuri. (2015). "Intelligent control of prosthetic ankle joint using gait recognition," in in 'Recent Advances and Future Directions in Adaptation and Control,' eds. J. Sarangapani and K.G. Vamvoudakis, Elsevier Publications, to appear (2016).

4. A. Mai and S. Commuri. (2016). "Robust Control of Prosthetic Ankle through the Integration of User Intent," IFAC Journal of Control Engineering Practice, vol. 49, pp. 1-16.
5. M. Barman, M. Nazari, S. Imran, S. Commuri, and M. Zaman. (2014). "Application of Intelligent Compaction Technique in Real-Time Evaluation of Compaction Level During Construction of Subgrade," ASCE Journal of Construction Engineering and Management, (submitted March 2014).
6. S. Imran, M. Barman, M. Nazari, S. Commuri, and M. Zaman. (2014). "Continuous Monitoring of Subgrade Stiffness during Compaction," Elsevier Transportation Research Procedia (accepted for publication, November 2014).
7. A. Mai and S. Commuri. (2014). "Intelligent Control of a Prosthetic Ankle Joint," J.A. Cetto et al. (Eds.): Informatics in Control, Automation and Robotics, Lecture Notes in Electrical Engineering, Springer Verlag, Berlin, pp. 91-106.
8. D.V. Singh, F. Beainy, S. Commuri, and M. Zaman. (2015). "Application of Intelligent Compaction Technology for Estimation of Effective Modulus for a Multilayered Asphalt Pavement," ASTM Journal of Testing and Evaluation, vol. 43, no. 2 (March 2015) (published online on October 07, 2014).
http://www.astm.org/DIGITAL_LIBRARY/JOURNALS/TESTEVAL/PAGES/JTE20130305.htm.
9. F. Beainy, D.V. Singh, S. Commuri, and M. Zaman. (2014). "Laboratory and Field Study on Compaction Quality of an Asphalt Pavement," International Journal of Pavement Research and Technology (IJPRT), vol. 7, no. 5, pp. 317-323.
10. F. Beainy, S. Commuri, S. Imran, and M. Zaman. (2014). Closure to discussion on "A visco-elastic-plastic model of asphalt/roller interaction," ASCE International Journal of Geomechanics, 10.1061/(ASCE)GM.1943-5622.0000426, 07014004.
[http://dx.doi.org/10.1061/\(ASCE\)GM.1943-5622.0000426](http://dx.doi.org/10.1061/(ASCE)GM.1943-5622.0000426).
11. C.P. Dionne, W.W.J. Ertl, J. Day, S. Commuri, B.J. Smith, and J.L. Regens. (2014). "Cross-sectional study of residuum measures during gait and work-related activities in men with trans-tibial amputation due to a traumatic event," Journal of Prosthetics and Orthotics, vol. 26, no. 3, pp. 128-133.
12. F. Beainy, S. Commuri, and M. Zaman. (2014). "Dynamical Response of Vibratory Rollers during the Compaction of Asphalt Pavements," ASCE Journal of Engineering Mechanics, vol. 140, no. 7, 04014039.
10.1061/(ASCE)EM.1943-7889.0000730. [http://dx.doi.org/10.1061/\(ASCE\)EM.1943-7889.0000730](http://dx.doi.org/10.1061/(ASCE)EM.1943-7889.0000730).
13. A. Mai, S. Commuri, C.P. Dionne, J. Day, W.W.J. Ertl, and L.J. Regens. (2013). "Effect of prosthetic feet on end-bearing characteristics in users with Transtibial Osteomyoplastic Amputation," International Journal of Prosthetics and Orthotics, vol. 25, no. 3, pp. 151-158.

14. F. Beainy, S. Commuri, S. Imran, and M. Zaman. (2013). "A visco-elastic-plastic model of asphalt/roller interaction," *ASCE International Journal of Geomechanics*, vol. 13, no. 5, 581–594.
[http://dx.doi.org/10.1061/\(ASCE\)GM.1943-5622.0000240](http://dx.doi.org/10.1061/(ASCE)GM.1943-5622.0000240).
15. D.V. Singh, M. Zaman, and S. Commuri. (2013). "Effects of Production and Sample Preparation Methods on Aggregate Shape Parameters," *International Journal of Pavement Engineering*, vol. 14, no. 2, pp. 154-175.
16. D.V. Singh, M. Zaman, and S. Commuri. (2013). "Artificial Neural Network Modeling of Dynamic Modulus Using Aggregate Shape Properties" *Journal of Materials in Civil Engineering*, vol. 25, no. 1, pp. 54–62.
17. A. Mai, S. Commuri, C.P. Dionne, J. Day, W.W.J. Ertl, and L.J. Regens. (2012). "Effect of Prosthetic Feet on End-bearing Characteristics in an otherwise Healthy Male with Transtibial Osteomyoplastic Amputation," *International Journal of Prosthetics and Orthotics*, vol. 24, no. 4, pp. 211-220.
18. D.V. Singh, M. Zaman, and S. Commuri. (2012). "Inclusion of Aggregate Angularity, Texture, and Form in Estimating Dynamic Modulus of Asphalt Mixes," *International Journal of Road Materials and Pavement Design*, vol. 13, no. 2, pp. 327-344.
19. D.V. Singh, M. Zaman, and S. Commuri. (2012). "A Laboratory Investigation into the Effect of Long- Term Oven Aging on RAP Mixes Using Dynamic Modulus Test," *International Journal of Pavement Research and Technology*, vol. 5, no. 3, pp. 142-152.
20. D.V. Singh, M. Zaman, and S. Commuri. (2012). "Comparison of Shape Parameters for Selected Coarse Aggregates in Oklahoma," *ASTM Journal of Testing and Evaluation*, paper ID # JTE104455, vol. 40, no. 3, pp. 1-18.
21. F. Beainy, S. Commuri, and M. Zaman. (2012). "Quality assurance / Quality control during the construction of hot mix asphalt pavements," *ASCE Journal of Construction Engineering and Management*, vol. 138, no. 2, pp. 178-187.
22. D.V. Singh, M. Zaman, and S. Commuri. (2012). "Evaluation of Dynamic Modulus for Modified and Unmodified Asphalt Mixes on Different Input Levels of the MEPDG," *International Journal of Pavement Research and Technology*, vol. 5, no. 1, pp. 1-11.
23. D.V. Singh, M. Zaman, and S. Commuri. (2012). "Comparison of Shape Parameters for Different Types and Sizes of Coarse Aggregates for Pavement Applications," *Journal of Transportation Research Board*, Paper #12-0758, pp.1-19.
24. D.V. Singh, M. Zaman, and S. Commuri. (2011). "Evaluation of Measured and Estimated Dynamic Moduli for Selected Asphalt Mixes," *Journal of ASTM International (JAI)*, vol. 8, no.9, pp. 1-19.
25. D.V. Singh, M. Zaman, and S. Commuri. (2011). "Evaluation of Predictive Models for Estimating Dynamic Modulus of HMA Mixes Used in Oklahoma," *Journal of Transportation Research Board*, Washington, D.C., vol. 4, no. 2210, pp. 57-72.

26. D.V. Singh, A. Mai, F. Beainy, S. Commuri, and M. Zaman. (2011). "In-Situ Assessment of Stiffness during Construction of an HMA Pavement," *International Journal of Pavement Research and Technology*, vol.4, no. 3, pp. 131-139.
27. P. Pham and S. Commuri. (2011). "Distributed Kalman Filter-based target tracking in wireless sensor networks," J.A. Cetto et al. (Eds.): *Informatics in Control, Automation and Robotics*, Lecture Notes in Electrical Engineering, LNEE 89, Springer-Verlag, Berlin, pp. 349–362.
28. S. Commuri, A.T. Mai, and M. Zaman. (2011). "Neural Network-based Intelligent Compaction Analyzer for Estimating Compaction Quality of Hot Asphalt Mixes," *ASCE Journal of Construction Engineering and Management*, vol. 137, no. 9, pp. 633-715.
29. S. Commuri, J. Day, D.P. Dionne, W.J.J. Ertl. (2010). "Assessment of pressures within the prosthetic socket of a person with osteomyoplastic amputation during varied walking tasks," *International Journal of Prosthetics and Orthotics*, vol. 22, no. 2, pp. 127-137.
30. N.M. Wasiuddin, M. Zaman, and S. Commuri. (2009). "Calibration of non-nuclear PQI gauges and field comparison of PQI and nuclear gauge densities," *International Journal of Pavement Research and Technology*, vol. 2, no. 5, pp. 181-187.
31. S. Commuri, A. Mai, and M. Zaman. (2009). "Calibration Procedures for the Intelligent Asphalt Compaction Analyzer," *ASTM Journal of Testing and Evaluation*, vol. 37, no. 5, pp. 454-462.
32. M. Watfa and S. Commuri. (2009). "Energy Efficient Approaches to the Border Coverage Problems in Wireless Sensor Networks", *Journal of Communications and Networks (JCN)*, vol. 11, no.1, pp. 57-71.
33. S. Commuri and R. Fierro. (2009). "Guest Editorial: **Special Issue on Unmanned Autonomous Vehicles**," *Journal of Intelligent Robotic Systems*, vol. 56, no. 1-2, pp. 3-4.
34. S. Commuri and M. Zaman. (2008). "Neural Network Based Compaction Analyzer for Density Measurement during the Construction of an Asphalt Pavement," *International Journal of Pavement Engineering*, vol. 9, no. 3, pp. 177-188.
35. S. Commuri, V. Tadigotla, and M. Atiquzzaman. (2008). "Reconfigurable Hardware based Dynamic Data Aggregation in Wireless Sensor Networks," eds. A. Durresi, and L. Barolli, *Special Issue on Heterogeneous Wireless Ad Hoc and Sensor Networks*, *International Journal of Distributed Sensor Networks*, vol. 4, no. 2 , pp. 194 – 212.
36. M. Watfa and S. Commuri. (2008). "An Energy Efficient and Self-Healing 3-Dimensional Sensor Cover", *International Journal of Ad Hoc and Ubiquitous Computing (IJAHUC)*, vol. 3, no. 1, pp. 33-47.
37. M. Watfa and S. Commuri. (2007). "Boundary Coverage and Coverage Boundary Problems in WSNs", *International Journal on Sensor Networks*, Special issue on Theoretical and Algorithmic Aspects in Sensor Networks. (Guest Editors: Dr. Xiuzhen (Susan) Cheng, The

- George Washington University and Dr. Yingshu Li, Georgia State University), vol. 2, nos. 3/4, pp. 275-285.
38. S. Commuri, V. Tadigotla, and L. Sliger. (2007). "Dynamic Reconfiguration of Intelligent Robot Teams," *International Journal of Intelligent and Robotic Systems*, vol. 49, no. 2, pp. 111-134.
- (Also in Springer Open Choice, *International Journal of Intelligent and Robotic Systems*, March 2007, Article DOI: 10.1007/s10846-007-9131-3).
39. V. Tadigotla and S. Commuri. (2007). "Design and Implementation of Reconfigurable Mobile Sensor Systems," *WSEAS Transactions on Systems*, vol. 6, no. 2, pp. 400 – 408.
40. V. Tadigotla and S. Commuri. (2006). "Efficient Implementation of Imaging filters using Partially Reconfigurable FPGAs", *WSEAS Transactions on Signal Processing*, vol. 2, no. 11, pp. 1448-1456.
41. S. Commuri and M. Watfa. (2006). "Coverage strategies in 3D wireless Sensor Networks", *International Journal of Distributed Sensor Networks*, vol. 2, no. 4, pp. 333-353.
42. M. Watfa and S. Commuri. (2006). "An Energy Efficient Approach to Dynamic Coverage in Wireless Sensor Networks", *Journal of Networks*, vol. 1, no. 4, pp. 10 – 20.
43. S. Jagannathan, S. Commuri, and F.L. Lewis. (1998). "CMAC Control of a Feedback Linearizable Nonlinear Systems ", *Automatica*, vol.34, no.5, pp. 547-557.
44. S. Commuri and F.L. Lewis. (1997). "A New Methodology for the Design of Adaptive Controllers using "State-Strict Passivity: Application to Neural Network Controllers", in *Special Issue: New Directions in Control and Automation II, Kybernetika*, vol. 33, no. 1, pp. 1-16.
45. S. Commuri, S. Jagannathan, and F.L. Lewis. (1997). "CMAC Neural Network Control of Robot Manipulators," *Journal of Robotic Systems*, vol. 14, no. 6, 465-482.
46. S. Commuri and F.L. Lewis. (1996). "CMAC Neural Networks for Control of Nonlinear Dynamical Systems: Structure, Stability, and Passivity", *Automatica*, vol. 33, no. 4, pp. 635–641.
47. S. Commuri and A. Ghosh. (1993). "Optimum Path Planning for Robot Manipulators Amid Static and Dynamic Obstacles", *IEEE Transactions on Systems, Man, and Cybernetics*, vol. 23, no. 2, pp. 576 - 584.
48. S. Commuri, J. Albus, and A. Barberra. (2006). "Intelligent Systems," in *Autonomous Mobile Robots: Sensing Control, Decision Making and Applications*, ed. S.S. Ge and F.L. Lewis, Marcel Dekker, pp. 660–700.
49. R. Fierro, J. Clark, D. Houghton, and S. Commuri. (2005). "A multi-robot testbed for biologically-inspired cooperative control," in *Multi-Robot Systems. From Swarms to Intelligent Automata*, vol. 3, L. E. Parker, F. E. Schneider, and A. C. Schultz (eds.), Springer, pp. 171-182.

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51. S. Commuri and F.L. Lewis. (1997). "CMAC Neural Networks for Control Applications," Encyclopedia of Electrical and Electronics Engineering, ed. John G. Webster, John Wiley and Sons, vol. 3, pp. 153-165.

Refereed Conference Papers

1. M. Barman, S. Imran, M. Nazari, S. Commuri, and M. Zaman, " Intelligent Compaction of Stabilized Subgrade of Flexible Pavement," Paper ID # 655, International Foundations Congress and Equipment EXPO, IFCEE-2015, San Antonio, Texas. March 17-21, 2015. (Accepted for publication in Proceedings of the IFCEE 2015).
2. S. Imran, M. Barman, M., Nazari, S. Commuri, and M. Zaman, "Continuous Monitoring of Subgrade Stiffness during Compaction," Paper ID # 233, 11th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries, TPMDC, IIT Bombay, India, December 10-12, 2014.
3. D.V. Singh, F. Beainy, M. Zaman, and S. Commuri, "Application Of Intelligent Compaction Technology For Estimation Of Effective Modulus For A Multilayered Asphalt Pavement," GSP 249: Recent Developments in Evaluation of Pavements and Paving Materials Geo-Hubei 2014, Edited by Rafiqul A. Tarefder, Jiong Hu, Musharraf Zaman, and Dar-Hao Chen, ISBN (print): 978-0-7844-7849-3, Publisher: American Society of Civil Engineers.
4. M. Barman, R. Ghabchi, D.V. Singh, M. Zaman, and S. Commuri, "Evaluation of Fatigue Performance of Asphalt Mixes Using Semi-Circular Bend and Four Point Beam Fatigue Test Methods," in the 14th International Conference of the International Association for Computer Methods and Advances in Geomechanics, Kyoto, Japan, September 22-25, 2014.
5. S. Imran, F. Beainy, S. Commuri, and M. Zaman, " Dynamical Model of Asphalt-Roller Interaction During Compaction," ICINCO - 11th International Conference on Informatics in Control, Automation and Robotics, paper ID# 210, Vienna, Austria, September 1-3, 2014.
6. M. Barman, M. Nazari, S. Imran, S. Commuri, and M. Zaman, "Application of Intelligent Compaction Technique in Real-Time Evaluation of Compaction Level During Construction of Subgrade," Transportation Research Board 93th Annual Meeting, Washington, D.C., Paper #14-5183, January 2014.

7. A. Mai and S. Commuri, "Intelligent Control of a Prosthetic Ankle Joint," ICINCO - 10th International Conference on Informatics in Control, Automation and Robotics, paper ID# 181, Reykjavik, Iceland, 2013. **(Nominated for Best Student Paper Award)**.
8. D. Vigouroux, F. Beainy and S. Commuri, "Identification of Orientation Dynamics of Miniature Helicopter in Hover Mode," ICINCO - 10th International Conference on Informatics in Control, Automation and Robotics, paper ID# 128, Reykjavik, Iceland, 2013.
9. P. Pham and S. Commuri, "Enhancing the Life Time of a Wireless Sensor Network in Target Tracking Applications," ICINCO - 10th International Conference on Informatics in Control, Automation and Robotics, paper ID# 84, Reykjavik, Iceland, 2013.
10. D.V. Singh, M. Zaman, and S. Commuri, "Comparison of Morphological Properties of Different Types of Coarse Aggregates," 2013 Airfield and Highway Pavement Conference, Los Angeles, USA, pp. 1254-1263, June 9-12, 2013.
<http://ascelibrary.org/doi/abs/10.1061/9780784413005.106> (last accessed 1/26/2014).
11. D.V. Singh, M. Zaman, and S. Commuri, "Comparison of Angularity and Texture for Different Types of Coarse Aggregates," GeoCongress 2012, ASCE Geo-Institute Conference, Oakland, California, USA, March 25-29, 2013.
12. S. Imran, F. Beainy, S. Commuri, and M. Zaman, "Transient Response of a Vibratory Roller during Compaction," 51st IEEE Conference on Decision and Control, Maui, Hawaii, pp. 4378-4383, 2012.
13. P. Pham, A. Mai, and S. Commuri, "Mobile Robots Assisted Target Tracking in Wireless Sensor Networks," IEEE Globecom, Anaheim, California, paper ID. #1569633143, 2012.
14. A. Mai, S. Commuri, C.P. Dionne, J. Day, and W.W.J. Ertl, "Residual Muscle Contraction and Prosthetic Socket Interface Force in a Transtibial Amputee upon the Osteomyoplastic Procedure – A Preliminary Study," IEEE ISSNIP Biosignals and Biorobotics Conference: Biosignals and Robotics for Better and Safer Living, Manaus, Brazil, pp. 1-6, January 2012.
15. D.V. Singh, M. Zaman, and S. Commuri, "Effects of Long Term Oven Aging on Dynamic Modulus of Hot Mix Asphalt," ASCE Geotechnical Special Publication no. 211, pp. 4773-4781, 2011.
16. D.V. Singh, M. Zaman, and S. Commuri, "Laboratory Performance Evaluation of Hot Mix Asphalt Mixes with RAP," presented at International Symposium on Testing and Specification of Recycled Materials for Sustainable Geotechnical Construction, Baltimore, Maryland, USA, February 2-4, 2011.
17. D.V. Singh, M. Zaman, and S. Commuri, "Evaluation of Predictive Models for Estimating Dynamic Modulus of HMA Mixes Used in Oklahoma," Transportation Research Board 90th Annual Meeting, CD-ROM Publication, Washington, D.C., Paper no. 11-3885, 2011.
18. A.T. Mai and S. Commuri, "Gait identification for an intelligent prosthetic foot," IEEE Multi-Conference on Systems and Control, Denver, Colorado, USA, pp. 1341-1346, September 28-30, 2011.

19. D.V. Singh, M. Zaman, and S. Commuri, "Comparison of Hierarchical Levels of MEPDG for Predicting Dynamic Modulus of Asphalt Mix," Proceeding of 13th International Conference of International Association for Computer Methods and Advances in Computational Mechanics (IACMAG2011), Melbourne, Australia May 9-11, 2011.
20. D.V. Singh, M. Zaman, and S. Commuri, "Effect of Sample Preparation Method on Aggregate Shape Characteristics," Proc. 61st Highway Geology Symposium, Oklahoma City, 2011.
21. D.V. Singh, A. Mai, F. Beainy, S. Commuri, and M. Zaman, "In Situ Measurement of the Stiffness during the Construction of a HMA Pavement," Transportation Research Board 89th Annual Meeting, CD-ROM Publication, Paper no. 10-3533, January 10-14, Washington, D.C., 2011.
22. F. Beainy and S. Commuri, "Asphalt Compaction Quality Control Using Artificial Neural Network," Proceedings of the 49th IEEE Conference on Decision and Control, Atlanta, Georgia, pp. 4643-4648, December 15-17, 2010.
23. P. Pham and S. Commuri, "Distributed Kalman filter-based target tracking in wireless sensor networks," in the Proceedings of the International Conference on Informatics in Control, Automation, and Robotics, ICINCO 2010, Funchal, Portugal, paper # 278, June 2010.
(Recipient of the Best Paper Award in Signal Processing, Systems Modeling and Control).
24. S. Mallireddy and S. Commuri, "Run Time Compression of Image Data in Wireless Sensor Networks" in the Proceedings of the IEEE International Conference on Networking, Sensing and Control, Chicago, pp. 512 - 517, April 2010.
25. S. Commuri, A.T. Mai, and M. Zaman, "Calibration Procedures for the Intelligent Asphalt Compaction Analyzer," 3rd International Conference on Asphalt Materials, Shandong, China, August 2009.
26. S. Commuri and A.T. Mai, "Field Validation of the Intelligent Asphalt Compaction Analyzer," 17th Mediterranean Conference on Control & Automation, Thessaloniki, Greece, pp. 651-656, Jun 24 - 26, 2009.
27. S. Commuri, F. Beainy, and A.T. Mai, "Unmanned Aerial Vehicles Operational Requirements and Fault-Tolerant Robust Control in Level Flight," 17th Mediterranean Conference on Control & Automation, Thessaloniki, Greece, pp. 700-705, June 24 - 26, 2009.
28. S. Commuri and F. Beainy, "Development of an Autonomous ATV for Real-Life Surveillance Operations," 17th Mediterranean Conference on Control & Automation, Thessaloniki, Greece, pp. 904-909, June 24 - 26, 2009.
29. S. Commuri, A.T. Mai, and M. Zaman, Neural Network-based Intelligent Compaction Analyzer for Estimating Compaction Quality of Hot Asphalt Mixes, Proceedings of the 17th World Congress of the International Federation of Automatic Control Seoul, Korea, pp. 2224-2229, July 6-11, 2008.

30. S. Commuri and V. Tadigotla, "Dynamic Data Aggregation in Wireless Sensor Networks," 2007 IEEE Multi-conference on Systems and Control, Suntec City, Singapore, MoA06.1, pp 1-6, October 1-3, 2007.
31. V. Tadigotla and S. Commuri, "Efficient Controller Implementations for Robot Control," 5th WSEAS International Conference on Circuits, Systems, Electronics, Control & Signal Processing (CSECS '06), ISBN # 960-8457-55-6, pp. 48-53, November 2006.
32. V. Tadigotla and S. Commuri, "Dynamic Image Filter Selection using Partially Reconfigurable FPGAs for Imaging Operations," 5th WSEAS International Conference on Circuits, Systems, Electronics, Control & Signal Processing (CSECS '06), ISBN # 960-8457-55-6, pp. 60-65, November 2006.
33. M. Watfa and S. Commuri, "Energy-Efficient Approaches to Coverage Holes Detection in Wireless Sensor Networks," Proceedings of the IEEE International Symposium on Intelligent Control, Munich, Germany, pp. 131-136, October 2006.
34. M. Watfa and S. Commuri, "Optimal Sensor Placement for Border Perambulation," Proceedings of the IEEE International Symposium on Intelligent Control, Munich, Germany, pp. 137-142, October 2006.
35. S. Commuri, V. Tadigotla, and L. Sliger, "FPGA-Based design of Intelligent Robot Teams," Proceedings of the IEEE International Symposium on Intelligent Control, Munich, Germany, pp. 1220-1225, October 2006.
36. M. Watfa and S. Commuri, "Power Conservation Approaches to the Border Coverage Problem in Wireless Sensor Networks," ICWN'06, Proceedings of the 2006 International Conference on Wireless Networks, Las Vegas, pp. 143-150 June 26-29, 2006.
37. M. Watfa and S. Commuri, "A Reduced Cover Approach to Energy Efficient Tracking using Wireless Sensor Networks," ICWN'06, Proceedings of the 2006 International Conference on Wireless Networks, Las Vegas, pp. 128-135, June 26-29, 2006.
38. M. Watfa and S. Commuri, "The 3-Dimensional Wireless Sensor Network Coverage Problem", Proceedings of the 2006 IEEE International Conference On Networking, Sensing and Control, Florida, pp. 856-861, April 2006.
39. M. Watfa and S. Commuri, "Sensor Selection for Border Covering 3D Spherical Region", Proceedings of the 9th Communications and Networking Simulation Symposium (CNS'06), Alabama, pp. 413-419, April 2006.
40. M. Watfa and S. Commuri, "Sensor Border Patrol for Target Detection", Proceedings of the 9th Communications and Networking Simulation Symposium (CNS'06), Alabama, pp. 420-425, April 2006.
41. M. Watfa and S. Commuri, "An Energy Efficient 3-Dimensional Sensor Cover", Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC06), Las Vegas, NV, USA, pp. 892 - 896, January 2006.

42. M. Watfa and S. Commuri, "Optimal 3-Dimensional Sensor Deployment Strategy", Proceedings of the IEEE Consumer Communications and Networking Conference (CCNC06), Las Vegas, NV, USA, IEEE Catlog # 06EX1273C, January 2006.
43. M. Watfa and S. Commuri, "Optimality Measures for Coverage in 3D Wireless Sensor Networks", Proceedings of the International Symposium on Wireless Pervasive Computing, Phuket, Thailand, IEEE Catlog # 06EX1173C, January 2006.
44. M. Watfa and S. Commuri, "A Coverage Algorithm in 3D Wireless Sensor Networks", Proceedings of the International Symposium on Wireless Pervasive Computing, Phuket, Thailand, IEEE Catlog # 06EX1173C, January 2006.
45. S. Commuri, "A Framework for Implementing Intelligence in Embedded Controls," Proceedings of the IEEE International Conference on Industrial Electronics and Control Applications, Ecuador, IEEE Catlog # 05EX1175C, December 2005.
46. Yushan Li, Sesh Commuri, John Cheung, and Pramod Verma, "A Robust Controller for Uncertain Nonlinear Systems and Its Application to a Motor Driven System," American Control Conference, pp. 1307-1312, Portland, 2005.
47. R. Muthuraman, A. Fajebe, and S. Commuri, "Intelligence in Embedded Controls – A Case Study," Proceedings of the IEEE Region 5 Technical Conference: Annual Technical and Leadership Workshop, pp. 125-130, April 2004.
48. Sesh Commuri, Rafael Fierro, Dean Hougen, and R. Muthuraman, "System Intelligence Requires Distributed Learning," Proceedings of the IEEE International Symposium on Intelligent Control, pp. 67-72, Taipei, Taiwan, 2004 (submitted November 2003, revised April 2004).
49. Sesh Commuri, Yushan Li, Dean Hougen, and Rafael Fierro, "Designing for System Intelligence A Case Study," Proceedings of the 5th IFAC Symposium on Intelligent Autonomous Vehicles, Lisbon, Portugal, July 2004.
50. Sesh Commuri, Yushan Li, Dean Hougen, and Rafael Fierro, "Evaluating Intelligence in Unmanned Ground Vehicle Teams," Proceedings of PerMIS '04, Performance Metrics for Intelligent Systems Workshop, National Institute of Standards and Technology, Gaithersburg, Maryland, August 2004.
51. R. Fierro, J. Clark, J. Sanchez, K. Walling, M. Leuschen, S. Commuri, and D. Hougen, "A Low Cost Modular Multi-Vehicle Testbed for Cooperative Control," 2nd Annual Swarming: Network Enabled C4ISR Conference, Washington DC, June 2004.
52. S. Commuri, S. Jagannathan and F. L. Lewis, "Control of Robot Manipulators Using CMAC Neural Networks", Proceedings of the IEEE Mediterranean Conference on Control and Systems, Paphos, Cyprus, paper TP4-3, July 1997.
53. S. Commuri and S. Jagannathan, "Modular Controls Design for Robot Manipulators Using CMAC Neural Networks," Proceedings of the IEEE International Conference on Robotics and Automation, pp. 1725 - 1730, April 1997.

54. S. Commuri and F.L. Lewis, "Design and Stability Analysis of Adaptive-Fuzzy Controllers for a Class of Nonlinear Systems," IEEE International Conference on Decision and Control, 1996.
55. S. Jagannathan, S. Commuri and F. L. Lewis, "Feedback Linearization using CMAC neural networks", Proceedings of the IEEE Conference on Decision and Control, pp.3304-3309, 1996.
56. S. Commuri and F.L. Lewis, "Design of Discrete-Time Nonlinear Adaptive-Fuzzy Controllers with Guaranteed Performance," Proceedings of the IEEE Mediterranean Symposium on New Directions in Control and Automation, pp.753-758, 1996.
57. S. Commuri and F.L. Lewis, "Adaptive-Fuzzy Logic Control of Robot Manipulators," Proceedings of the IEEE International Conference on Robotics and Automation, pp. 2604-2609, 1996.
58. S. Commuri and F.L. Lewis, "A Framework for the Discrete Time Design of Intelligent Controllers Using 'State-Strict Passivity'," Proceedings ISAI/IFIS, pp. 386-393, Cancun, Mexico, 1996.
59. S. Jagannathan, S. Commuri and F.L. Lewis, "Feedback Linearization of Nonlinear Systems using Fuzzy Logic Systems," Proceedings ISAI/IFIS, Cancun, Mexico, 1996.
60. S. Commuri and F.L. Lewis, "CMAC Neural Networks for Control of Nonlinear Dynamical Systems: Structure, Stability, and Passivity", Proc. of the IEEE Intl. Symp. on Intelligent Control, pp. 123-129, 1995.
61. S. Commuri and F.L. Lewis, "Discrete-time CMAC Neural Networks for Control Applications", 34th IEEE Conf. on Decision and Control, pp. 2420-2426, 1995.
62. S. Commuri and F.L. Lewis, "A New Methodology for the Design of Adaptive Controllers using 'State-Strict Passivity' ", Proceedings of the 3rd IEEE Mediterranean Symposium on New Directions in Control and Automation, vol. 1, pp. 266-271, 1995.
63. S. Commuri, F.L. Lewis, and Kai Liu, "Approximation-based Neural Network and Fuzzy Logic Control," in Invited Session on Approximation-Based Control, Proceedings of the IFAC World Congress, pp. 119-124, 1995.
64. S. Commuri and F.L. Lewis, "Stabilization of a Class of Nonlinear Systems with Ill-Defined Relative Degree", Proceedings of the of the American Control Conference, pp. 2712-2716, June 1995.
65. S. Commuri, F.L. Lewis, S.Q. Zhu, and K. Liu, "CMAC Neural Networks for Control of Nonlinear Dynamical Systems", Proceedings of the First International Conference on Neural, Parallel, and Scientific Computing, pp. 119-124, May 1995.
66. S.Q. Zhu, S. Commuri, and F.L. Lewis, "A Singular Perturbation Approach to Stabilization of the Internal Dynamics of Multilink Flexible Robots", Proceedings of the American Control Conference, pp. 1386-1390, June 1994.

67. S. Commuri and F.L. Lewis, "Robust Practical Stabilization of Nonlinear Systems with Ill-Defined Relative Degree", Proceedings of the 2nd IEEE Symposium on New Directions in Control and Automation, pp. 299-306, June 1994.
68. C. Seshadri and A. Ghosh, "Optimum Path Planning for Two Robots - A Variational Approach", in Proceedings of the International Symposium on Intelligent Robotics, Bangalore, India, editors: M. Vidyasagar and Mohan Trivedi, January 2-5, 1991.
69. A. Ghosh and C. Seshadri, "Collision-free Optimum Paths for Manipulators using Geometric Collision Avoidance Strategy", SME Fourth World Conference on Robotics Research, pp. 6.23 - 6.32, Pittsburgh 1991.
70. A. Ghosh, C. Seshadri and A.M.Patrikar, "Time Optimal Path Planning for Robot Manipulators", in Proceedings of the IEEE International Symposium on Circuits and Systems, New Orleans, 1990.
71. C. Seshadri and A. Ghosh, "Minimum-time Trajectory Planning for Two Robots", in Proceedings of the IEEE Industrial Electronics Society Conference, California, pp. 676 – 681, 1990.

Presentations

1. S. Commuri, and M. Zaman, "Intelligent Compaction – OU Experience," EDC - Intelligent Compaction Task Force Meeting, FHWA-Oklahoma Division, U.S. Department of Transportation, Oklahoma City, OK, September 05, 2013.
2. M. Nazari, S. Imran, M. Barman, D.V. Singh, S. Commuri, and M. Zaman, "Characterization of Resilient Modulus for Chemically Stabilized Pavement Subgrade," in GPIS 2013, Oklahoma University, Oklahoma, Norman OK, April 05, 2013.
3. M. Nazari, M. Barman, S. Imran, S. Commuri, and M. Zaman, "Application of ICA in Real Time Evaluation of Stiffness during the Compaction of Stabilized Subgrade," in ODOT-OTC Research Day, Department of Transportation, Oklahoma, September 12, 2013.
4. M. Barman, R. Ghabchi, D.V. Singh, M. Zaman, and S. Commuri, "Evaluation of Fatigue Performance Testing Procedures using Virgin and Reclaimed Asphalt Mixes," in ODOT-OTC Research Day, Department of Transportation, Oklahoma, September 12, 2013.
5. F. Beainy, D.V. Singh, H. Gadigota, S. Imran, S. Commuri, and M. Zaman, "Intelligent Compaction of Asphalt Pavements and Soil Subgrade," 2nd Annual Summer Symposium, Oklahoma Transportation Center, Oklahoma, 2011.
6. D.V. Singh, M. Zaman, and S. Commuri, "Application of AIMS to Identify Change in Aggregate Shape Characteristics" Student Research and Performance Day, The University of Oklahoma, 2011.

7. D.V. Singh, M. Zaman, and S. Commuri, "Use of Aggregate Imaging System (AIMS) for Measuring the Aggregate Shape Parameters" BGSA Graduate Student Research Symposium, The University of Oklahoma, 2011.
8. D.V. Singh, S. Commuri, and M. Zaman, "Continuous Real-Time Measurement of Pavement Quality During Construction" ODOT-OTC Research Day, Department of Transportation, Oklahoma, 2011. **(Awarded 1st Prize).**
9. D.V. Singh, S. Commuri, and M. Zaman, "Measurement of Stiffness of Pavement Using Intelligent Asphalt Compaction Analyzer" Student Research and Performance Day, The University of Oklahoma, 2010.
10. D.V. Singh, A. Mai, B. Fares, S. Commuri, and M. Zaman, "In Situ Measurement of Stiffness During Construction of HMA Pavements", ODOT-OTC Research Day, Oklahoma Department of Transportation, Oklahoma City, Oklahoma, 2009.
11. D.V. Singh, S. Commuri, and M. Zaman, "Measurement of Compaction Level of Pavement by Intelligent Asphalt Compaction Analyzer (IACA)," Student Research and Performance Day, The University of Oklahoma, 2009.
12. S. Commuri, J. Day, C. Dionne, and W.J.J. Ertl, "Assessment of pressures within the prosthetic socket of a person with osteomyoplastic amputation during varied walking tasks," Boston National APTA Conference, June 2010.
13. S. Commuri, "Advances in Intelligent Prosthetics," presented at the Ertl Symposium, OU-HSC, University of Oklahoma, April 2010.
14. D. Singh, A. Mai, F. Beainy, S. Commuri, and M. Zaman, "In Situ Measurement of Stiffness during the Construction of HMA Pavements," presented at the TRB 89th Annual Meeting, Washington, DC., paper # 10-3533, January 10-14, 2010.
15. S. Commuri, A.T. Mai, M. Zaman, "Calibration Procedures for the Intelligent Asphalt Compaction Analyzer," 3rd International Conference on Asphalt Materials, Shandong, China, August 2009.
16. S. Commuri, M. Zaman, 'Advances in Intelligent Compaction - An Overview of Intelligent Asphalt Compaction Analyzer' at FHWA, Virginia Transportation Research Center, McLean, VA, January 06, 2009.
17. S. Commuri, M. Zaman, Highways for LIFE Technology Transfer Program - Field Validation of Intelligent Asphalt Compaction Analyzer, presented at the TRB 88th Annual Meeting, Washington, DC., January 11-15, 2009.
18. S. Commuri, M. Zaman, 'Performance Validation of the Intelligent Asphalt Compaction Analyzer' at the Workshop on Intelligent Construction for Earthworks, EERC, Iowa Department of Transportation, Des Moines, IA, April 14-16, 2009.

19. S. Commuri, "A new approach for asphalt IC," Second Annual Workshop on Intelligent Construction for Earthworks, Iowa Department of Transportation, Des Moines, IA, April 14-16, 2009.
20. S. Commuri, "New approaches to intelligent compaction," Highways for LIFE – Technology Partnerships Program, Annual Meeting of the Transportation Research Board, Washington DC, January 2009.
21. S. Commuri, "Intelligent Compaction Analyzer," Highways for LIFE – Technology Partnerships Program, Virginia Transportation Research Center, McClean, VA, January 2009.
22. S. Commuri, M. Zaman, 'Intelligent Compaction of Asphalt Pavements' presented to the Asphalt Quality Improvement Task Force, Oklahoma City, OK, April 07, 2009.
23. S. Commuri, D. Singh, A. Mai, F. Beainy, M. Zaman 'Intelligent Asphalt Compaction: Quality and Statistical Measures,'" ' poster presented at the 2009 ODOT-OTC Transportation Research Day, Oklahoma City, OK, October 7, 2009.
24. S. Commuri, Residual limb weight bearing during gait of an individual with an osteomyoplastic transtibial amputation, presented at the Ertl Symposium, OU-HSC, University of Oklahoma, April 2009.
25. S. Commuri, "Field Evaluation of the IACA," Highways for LIFE – Technology Partnerships Program, Annual Meeting of the Transportation Research Board, Washington DC, January 2008.
26. S. Commuri, "Field Evaluation of Intelligent Asphalt Compaction Analyzer," Oklahoma Department of Transportation, October 2008.
27. **(Invited) Panelist**, Towards Global Execution Effectiveness, MESA Plant2Enterprise Conference, Orlando, September 2005.
28. S. Commuri, S. Radhakrishnan, Adaptive computing Systems using mobile Ad-Hoc Grid Networks, CBMANET, DARPA Preproposers Conference, Arlington, VA, September 2005.
29. R. Fierro, D. Hougen, S. Commuri, Adaptation and Learning at All Levels (AL²) in Intelligent Robot Teams, Workshop on Swarming in Natural and Engineered Systems, Napa Valley, California, August 3-4, 2005.
30. MESA 2005 Plant2Enterprise Conference, Orlando, September 2005 (Invited Panelist). Intelligent Control and Applications using Matlab, del DÍA MATLAB 2005, Universidad el Bosque, Bogotá, Columbia, August 2005.
31. Intelligent Asphalt Compaction, Oklahoma Transportation Center Workshop, Oklahoma City, OK, April 2005.
32. Workshop on Smart Embedded Systems for Control, 2003 IEEE International Symposium on Intelligent Control, Houston, TX, October 2003.

Reports

1. S. Commuri, M. Zaman, M. Barman, M. Nazari, and S. Imran, "Evaluation of Performance of Asphalt Pavements Constructed Using Intelligent Compaction Techniques," Final Report for project ODOT SP&R Item #2246, submitted to Oklahoma Department of Transportation, Oklahoma City, USA, October 2014.
2. S. Commuri, "Intelligent Compaction of Soil Subgrades," submitted to Volvo Construction Equipment, Ekilstune, Sweden, November 2014.
3. S. Commuri, M. Zaman, M. Barman, M. Nazari, and S. Imran, "Evaluation of Performance of Asphalt Pavements Constructed Using Intelligent Compaction Techniques," Annual Report for project ODOT SP&R Item #2246, submitted to Oklahoma Department of Transportation, Oklahoma City, USA, October 2014.
4. S. Commuri, M. Zaman, F. Beainy, D.V. Singh, M. Nazari, S. Imran, and M. Barman, "Pavement Evaluation Using a Portable Lightweight Deflectometer," OTCREOS11.1-14-F, Final Report submitted to the Oklahoma Transportation Center, pp. 1-47, June 2013.
5. S. Commuri, M. Zaman, M. Barman, M. Nazari, S. Imran, F. Beainy, and D.V. Singh, "Real-time measurement of quality during the compaction of subgrade soils," OTCREOS10.1-11-F, Final Report submitted to the Oklahoma Transportation Center, pp. 1-90, July 2013.
6. S. Commuri, M. Zaman, M. Barman, M. Nazari, S. Imran, and F. Beainy, "Evaluation of Performance of Asphalt Pavements Constructed using Intelligent Compaction Techniques," Annual Report for project ODOT SP&R Item #2246, submitted to Oklahoma Department of Transportation, Oklahoma City, USA, pp. 1-72, October 2013.
7. S. Commuri, M. Zaman, M. Barman, M. Nazari, S. Imran, and F. Beainy, "Continuous Real-Time Measurement of Pavement Quality during Construction," submitted to Volvo Construction Equipment, Shippensburg, PA, USA, pp. 1-88, December 2013.
8. S. Commuri, F. Beainy, and S. Imran, "Continuous Control of Vibratory Compactors for Intelligent Compaction of Asphalt Pavements," submitted to Volvo Construction Equipment, Shippensburg, PA, USA, pp. 1-20, August 2013.
9. M. Zaman, S. Commuri, M. Barman, R. Ghabchi, and D.V. Singh, "Recommended Fatigue Test for Oklahoma Department of Transportation," Annual Report for project ODOT SP&R Item #2243, submitted to Oklahoma Department of Transportation, Oklahoma City, USA, pp. 1-60, October 2013.
10. S. Commuri, "Final report for assistance agreement DTFH61-08-G-0002," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, June 2010.
11. S. Commuri, "Detailed work plan for assistance agreement DTFH61-08-G-0002," report presented to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, March 2009.

12. S. Commuri, "User Manual: Intelligent Asphalt Compaction Analyzer," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, May 2009.
13. S. Commuri, "Phase I progress report for assistance agreement DTFH61-08-G-0002," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, February 2009.
14. S. Commuri, "Q1-09 Quarterly progress report for assistance agreement DTFH61-08-G-0002," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, April 2009.
15. S. Commuri, "Q2-09 Quarterly progress report for assistance agreement DTFH61-08-G-0002," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, July 2009.
16. S. Commuri, "Q3-09 Quarterly progress report for assistance agreement DTFH61-08-G-0002," submitted to the Federal Highway Administration, Highways for LIFE Technology Partnerships Program, October 2009.
17. S. Commuri, "Inter-modal containerized freight: Systems engineering for container instrumentation and surveillance," submitted to the Center for infrastructure protection and hardening through education and research (CIPHER), Oklahoma, October 2008.
18. S. Commuri, "Energy Optimizing Induction Motor Controls," GbG Energy Systems, March 2007.
19. S. Commuri and M. Zaman, "Intelligent Asphalt Compaction Analyzer – Final Report," OCAST, February 2007.
20. S. Commuri and M. Zaman, "Intelligent Asphalt Compaction Analyzer – Year II Report," OCAST, July 2005.
21. S. Commuri and M. Zaman, "Intelligent Asphalt Compaction Analyzer – Year I Report," OCAST, June 2004.
22. S. Commuri, "Non-Contact 3-D Digitization Technology – Phase I," Tinker Air Force Base, Oklahoma City, July 2002.
23. S. Commuri, "Controls Design and Evaluation of D11R Autonomous Track-Type Tractor," Caterpillar Inc., Peoria, IL, 1998.
24. S. Commuri, "Testing and Evaluation of Fuel Benches," Caterpillar Inc., Peoria, IL, 1997.
25. S. Commuri, "Automation of Mining Trucks," Caterpillar Inc., Peoria, IL, 1996.
26. J.A. Lowe, S. Commuri, and F.L. Lewis, "WSC-6 Antenna Control : Test Procedures", prepared for Electrospace Systems, Inc., March 1995.
27. J.A. Lowe, S. Commuri, and F.L. Lewis, "WSC-6 Antenna Control : Phase II Report", prepared for Electrospace Systems, Inc., November 1994.

G. Courses Taught

1. ECE 5973 Biomechanics (Fall 2013, Fall 2014)
2. AME 3623 Embedded Real-Time Systems (Spring 2014).
3. ECE 2713 Digital Signals and Filtering (Spring 2002, Spring 2003).
4. ECE 4413 Control Systems Engineering (Fall 2002, Fall 2003, Fall 2009, Fall 2010, Fall 2011)
(also co-listed as AME 4383 in Fall 2002, Fall 2003).

(Typical projects: Development and autonomous operation of an ATV; Design of an autonomous car with an inverted pendulum mounted on it; Design of a guidance and tracking system that will enable an autonomous car to chase and trap a radio controlled target;)

5. ECE 5043 Fuzzy Logic (Fall 2003).
6. ECE 5413 Control Theory (Spring 2004, Spring 2005).
7. AME 2623 Circuits and Sensors (Spring 2004, Spring 2005, Spring 2006, Spring 2007).
8. ECE 4973/5973 Robotics (Fall 2004, Fall 2005, Fall 2006, Fall 2007, Fall 2008).

(Typical projects: Design of robots using mobile base and articulated arms from Lynxmotion Inc., to sort parts, and recognize and reproduce characters; Design of mobile track and destroy robots based on mobile base and robots from Lynxmotion Inc., that can play laser tag; Design and control of an autonomous pipe crawling robot for the monitoring and inspection of gas pipelines;

9. ECE 3793 Signals and Systems (Spring 2009, Spring 2010, Spring 2011, Spring 2012).
10. ECE 5973 Advanced Manipulation (Spring 2013) (Also co-listed as AME 5973/CS 5973)

(DARPA Robotics Challenge 2013, DARPA. OU Team (students in ECE 5970/AME 5970 Advanced Manipulation Course) competed and qualified for the second round of DARPA's Robotics Challenge!)

H. Students Supervised

Doctoral:

1. Syed Imran (May 2016).
Dissertation: Closed Loop Control of a vibratory compactor for intelligent compaction.
2. Fauzia Ahmed (December 2015).
Dissertation: *Coordination and control of knee and ankle joints in a prosthetic leg.*
3. Anh T. Mai (December 2014).
Dissertation: *Intelligent control of a prosthetic ankle joint.*

4. Phuong Pham (December 2012).
Dissertation: *Learning in wireless sensor networks*.
5. Fares Beainy (November 2011).
Dissertation: *Non-Contact sensor for the real-time measurement of the quality of asphalt pavements during their construction*.
6. Dharamveer Singh (Jointly with Prof. Musharraf Zaman) (October 2011).
Dissertation: *A Laboratory investigation and modeling of dynamic modulus of asphalt mixes for pavement applications*.
7. Mohamed Watfa (July 2006).
Associate Professor, University of Wollongong in Dubai.
Dissertation: *Coverage issues in wireless sensor networks*.

Masters:

1. Bhanu Prasad Kotamraju (May 2016).
Thesis: Gait Analysis of people with unilateral trans-tibial and trans-femoral amputation.
2. Satish Palpunoori (December 2014).
Thesis: Interactive Voice Response Systems.
3. Damian Viagaroux (January 2013).
Thesis: Identification of the dynamics of a helicopter.
Engineer, Halliburton, Houston, Texas.
4. Asif Imran (May 2012).
Thesis: *Modeling and control of the compaction process*.
Doctoral Candidate, University of Oklahoma, Norman, Oklahoma.
5. Harish Reddy Gadigota (December 2011).
Thesis: *Development of a prosthetic activity monitor*.
Embedded Software Engineer, EControls, San Antonio, Texas.
6. Sreekant Reddy Mallireddy (August 2011).
Thesis: *Reconfigurable sensor node for imaging applications in wireless sensor networks*.
Senior Analyst - Embedded Systems, Dell Computers, Peoria, Illinois.
7. Tandy Jones (August 2009).
Systems Engineer, Federal Aviation Administration, Oklahoma City, Oklahoma.
Thesis: *Development of a testbed for a reconfigurable manufacturing system*.
8. Gregario Balandran (April 2009).
Automation Engineer, Spirit Airlines, Wichita, Kansas.
Thesis: *Intelligent manufacturing approach to flexible problem solving*.
9. Madhu Pankaj (April 2009).
Hardware Engineer, Caterpillar, Peoria, Illinois.

Thesis: *Hardware accelerated implementation of a baseline grayscale JPEG encoder for a WSN using Xilinx Virtex-II Pro FPGA.*

10. Lee A. Sliger (2006).
Systems Engineer, Raytheon, Tucson, Arizona.
Thesis: *Application of dynamic partial reconfiguration for fault-correction in embedded systems.*
11. Viswanath Tadigotla (2006).
Senior Research Engineer, Xilinx Inc., Longmont, Colorado.
Thesis: *Design and implementation of reconfigurable mobile sensor node.*
12. Johann G. Nino (2005).
Senior Software Engineer, PCI Systems, Norman, OK.
Thesis: *Design and Development of a Real Time Neural Network-Based Compaction Analyzer.*
13. Deepa Yerrabommanahalli (2005).
Senior Software Engineer, PCI Systems, Norman, OK.
14. Deji Fajebe (2005).
Doctoral Candidate, Georgia Institute of Technology, Atlanta, GA.
Thesis: *A software methodology for embedded intelligent systems.*
15. Ramanathan Muthuraman (2004).
Senior Systems Engineer, Hewlett Packard, San Jose, California.
Thesis: *An architecture for the implementation of intelligent unmanned ground vehicles (UGVs).*

J. Professional Service

Member, IEEE

Vice-Chair for IEEE PES and IAS societies OKC region since 2014.

Editor-at-Large, Journal of Intelligent and Robotic Systems (Area Editor 2006-2012).

Committee Member (Invited), FHWA Oklahoma City Intelligent Compaction Task Force. (Since June 2013).

Elected Member, American Association of Pavement Technologists (Since January 2013).

Member, International Program Committee, ICINCO2015 – 12th International Conference on Informatics in Controls, Automation and Robotics, Colmar, Alsace, France, July 21-23, 2015.

Member, International Program Committee, ICINCO2014 – 11th International Conference on Informatics in Controls, Automation and Robotics, Vienna, Austria, September 1-3, 2014.

Member, International Program Committee, ICINCO2014 – 11th International Conference on Informatics in Controls, Automation and Robotics, Vienna, Austria, September 1-3, 2014.

Chair (Invited Sessions), 2011 IEEE Multi Systems Conference to be held in Denver, CO, September 28-30, 2011.

Session Co Chair, Fault Tolerant Systems, 17th Mediterranean Conference on Control & Automation, Thessaloniki, Greece, Jun 24 - 26, 2009.

Session Co-Chair, Fault-Tolerant Control, 17th Mediterranean Conference on Control & Automation, Thessaloniki, Greece, Jun 24 - 26, 2009.

Associate Editor, IEEE Multi-conference on Systems and Control, Suntec City, Singapore, October 2007.

Member, International Program Committee, IEEE Symposium on Intelligent Control, Munich, Germany, October 2006.

International Program Committee Member, 2006 IEEE International Conference on Networking, Sensing and Control, Ft. Lauderdale, Florida, April 2006.

Session Chair, Special Session on Subsurface Sensing and Imaging, IEEE ICNSC 2006.

Session Chair, Wireless Sensor Networks for Intelligent Systems, ISIC 2006.

Session Chair, Intelligent Systems and Intelligent Control, ISIC 2006.

Member, Technical Program Committee, WiQoS2005, IEEE WirelessCom 2005 Conference.

Chair, Systems and Control session, SAE Earthmoving Conference, 1997, 1998, and 1999.

Reviewer:

IEEE Transactions on Control Systems Technology; IEEE Transactions on Neural Networks;
IEEE Transactions on Systems, Man, and Cybernetics; International Computer Aided
Engineering; International Journal of Robotics and Intelligent Systems; International Journal
of Field Robotics; Robotica; Elsevier Computer Communication Journal; Journal of
Supercomputing ASME Journal of Manufacturing Science and Engineering; Mathematical
Problems in Engineering

University/Department Service

Member, University Research Council, Since 2014

Chairman, Graduate Studies Committee, Since 2013

Member, Committee 'A', 2010 - 2012

Member, OU Instructional Development Program, 2002 - 2007

Student Mentor, Adopt-a-faculty Program, 2006-2008

Member, Undergraduate Committee, 2007-2010.

I have mentored several disadvantaged/minority students and recruited minority students to the graduate program in ECE. I also helped my undergraduate student, Mr. Balandran, to obtain a (nationally competitive) GEM fellowship to pursue higher education. Another undergraduate

student, Mr. Akanimoh Adeleye, obtain the prestigious McNair Fellowship to pursue undergraduate research under my supervision.