ROHIT DUA

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Cooperative Engineering Program
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PROFESSIONAL INTERESTS:

Smart Embedded Sensing Systems, Artificial Neural Networks, Optoelectronic Sensors, Biomedical and Energy Engineering Applications, and Engineering Education.

DEGREES:

Ph.D. in Electrical Engineering: Missouri University of Science and Technology (MST), July 2006; Emphasis Area: Fiber Optic Sensors and Artificial Neural Networks. Dissertation Title: "Neural Network Demodulator for Bragg Strain Sensors." Advisors: Drs. Steve E. Watkins and Donald C. Wunsch II.

M.S. in Electrical Engineering: Missouri University of Science and Technology (MST), December 2002; Emphasis Area: Fiber Optic Sensors and Artificial Neural Networks. Thesis Title: "Vibration Analysis Using Extrinsic Fabry-Perot Interferometric Sensors and Neural Networks." Advisors: Drs. Steve E. Watkins and Donald C. Wunsch II.

B.E. in Electronics & Telecommunications: University of Pune, India, February 1999.

ACADEMIC EXPERIENCE:

Jan. 2010 – Present	Assistant Teaching Professor, Department of Electrical and Computer Engineering, Missouri University of Science and Technology
Sept. 2006 – Dec. 2009	Assistant Professor, Department of Electrical and Computer Engineering, New York Institute of Technology
Jan. 2002 - July. 2006	Lecturer, Department of Electrical and Computer Engineering, Missouri University of Science and Technology
Aug. 2001- Dec. 2005	Teaching Assistant, Department of Electrical and Computer Engineering, Missouri University of Science and Technology

RESEARCH AND PROFESSIONAL EXPERIENCE:

Aug. 2000 - July 2005	Research Assistant, Department of Electrical and Computer Engineering, Missouri University of Science and Technology
Dec. 1999 - July 2000	Project Engineer, Qatar Multi-Tech Est., Qatar.
Mar. 1999 - July 1999	Assistant Marketing Executive, Aptech Computer Education, Qatar

PATENT:

R. Dua, S. E. Watkins, D. C. Wunsch II, "Neural Network Demodulator for an Optical Sensor," US Patent Application Number 11/761,814, Pub. No. US 2007/0297714 A1, Notification of Acceptance: 8/21/2009

GRANTS:

New York Institute of Technology 2008 Institutional Support of Creativity and Research grant for the project titled "Sensing Applications using Fiber Optic Sensors". Grant amount $5,850.93

SELECTED ACTIVITIES:

Session chair at International Joint Conference on Neural Networks (IJCNN) 2003, Portland, Oregon, USA.

Paper reviewer for IJCNN 2002 – present.

Member of IEEE, IEEE Neural Network Society

AWARDS:

2007 NYIT Faculty Scholars Award.

Council of Graduate Students (CGS) outstanding graduate teaching assistant for Department of Electrical and Computer Engineering, Missouri University of Science and Technology (2003-2004).

Competent Toastmaster (CTM) award from Toastmasters International on October 9th, 2003.

PUBLICATIONS AND PAPERS:

(Total Publications: 4 Archival Papers, and 9 Other Papers)

Refereed Journal Papers:

S. E. Watkins, B. A. Konz, R. Dua, A. Belarbi, and D. C. Wunsch, "Smart Truss for Education," *Journal of Intelligent Material Systems and Structures*, **22**(4), 317-326, (2011).

S. E. Watkins, F. Akhavan, R. Dua, K. Chandrashekhara, and D. C. Wunsch, "Impact-induced Damage Characterization of Composite Plates using Neural Networks," *Smart Materials and Structures,* 16, pp. 515-524, (2007).

R. Dua, S. E. Watkins, S. A. Mulder, and D. C. Wunsch, "MATLAB-Based Neural Network Introduction for Sensors Curriculum," *International Journal of Engineering Education,* 21(4), pp. 636-648, (2005).

R. Dua, S. E. Watkins, and D. C. Wunsch, "Demodulation of Extrinsic Fabry-Perot Interferometric Sensors for Vibration Testing using Neural Networks," *Optical Engineering*, 43 (12), pp. 2976-2985, December (2004).

R. Dua, D. Beetner, V. Stoecker, and D. C. Wunsch, "Detection and Classification of Basal Cell Carcinoma using Electrical Impedance and Neural Networks," *IEEE Transactions on Biomedical Engineering*, 51 (1), pp. 66-71, January (2004).

Conference Papers:

J. Seiffertt, S. Mulder, R. Dua, D.C. Wunsch, "Neural networks and Markov models for the iterated prisoner's dilemma," IEEE - International Joint Conference on Neural Networks, pp. 2860-2866, Atlanta, GA, June 14-19 (2009).

R. Dua, S. E. Watkins, "Near real-time analysis of extrinsic Fabry-Perot interferometric sensors under damped vibration using artificial neural networks," Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring: 16th Annual International Symposium, San Diego, California, USA, 9–12 March (2009).

R. Dua, "Damped Vibration Analysis of Extrinsic Fabry-Perot Interferometric Sensors using Artificial Neural Networks," *Proceedings of the 2007 International Joint Conference on Neural Networks (IJCNN)*, Orlando, Florida, August (2007). (Extended version)

R. Dua, A. Jafari, and B. Mihajlovic, "Damped Vibration Analysis of Extrinsic Fabry-Perot Interferometric Sensors using Artificial Neural Networks," *Proceedings of the International Conference on Digital Communications and Computer Applications*, Jordan, March 18-21 (2007).

R. Dua, S. E. Watkins, J. W. Fonda, and D. C. Wunsch II, "Traffic Monitoring using Strain Measurements and Neural Networks," *Proceedings of the 2006 Artificial Neural Networks in Engineering Conference*, St, Louis, MO, November 5-8 (2006).

R. Dua, J. E. Seiffertt, B. Blaha, K. Gupta, V. Satagopan, J. R. Stanley, D. Beetner, and D.C. Wunsch, "Hands-on Projects and Exercises to Strengthen Understanding of Basic Computer Engineering Concepts," *American Society of Engineering Education Annual Conference & Exposition*, Portland, Oregon (2005).

R. Dua. V. M. Eller, K. M. Isaac, S. E. Watkins, and D. C. Wunsch, " Intelligent Strain Sensing using Extrinsic Fabry-Perot Interferometric Sensors and Neural Networks," *Proc .of the IEEE/INNS International Joint Conference on Neural Networks 2003*, Portland, Oregon, July 20-24, pp. 2667-2672. (2003).

R. Dua, S. E. Watkins, and D.C. Wunsch, "Vibration Analysis Using Extrinsic Fabry-Perot Interferometric Sensors and Neural Networks," *Proc. of Artificial Neural Networks in Engineering Conference*, St. Louis, MO, 2002, vol-12, pp. 907-912. (2002).

R. Dua, S. E. Watkins, D. C. Wunsch, K. Chandrashekhara, and F. Akhavan, "Detection and Classification of Impact Induced Damage in Composite Plates using Neural Networks," *Proc. of the Neural Networks for Instrumentation, Measurement and Related Industrial Applications - NATO Conference*, Crema, Italy, (2001). [Expanded version]

R. Dua, S. E. Watkins, D. C. Wunsch, K. Chandrashekhara, and F. Akhavan, "Detection and Classification of Impact Induced Damage in Composite Plates using Neural Networks," *Proc. of the IEEE/INNS International Joint Conference on Neural Networks*, 15-19 July, Washington D.C., pp 681-686, (2001).

CONFERENCES ATTENDED:

American Society of Engineering Education: Annual Section Conference (2013), Salina, Kansas

International Joint Conference on Neural Networks (IJCNN) 2007, Orlando, Florida.

American Society of Engineering Education Annual Conference & Exposition 2005, Portland, Oregon.
International Joint Conference of Neural Networks (IJCNN) 2003, Portland, Oregon.
International Joint Conference of Neural Networks (IJCNN) 2001, Washington DC.
Artificial Neural Networks in Engineering (ANNIE) 2000, St. Louis, Missouri.

WORKSHOPS:

ONR-EPRI-AEP Faculty Workshop on Power Engineering Curriculum (July 6-11, 2008), Northern Arizona University, Flagstaff, Arizona.
Electromagnetic Compatibility (EMC) Laboratory Course (May 15-18, 2006), Missouri University of Science and Technology, Rolla, Missouri.