

# ROHIT DUA

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## CAMPUS ADDRESS

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## OBJECTIVE

**To obtain a fulltime position as an assistant professor in Electrical/Electronics and Computer Engineering.**

## RESEARCH INTERESTS

As a researcher, my goals are to further develop the field of optical sensor data processing technology, smart structure systems. My dissertation emphasis has been to develop neural network demodulator for Bragg optical strain sensors. Additional research projects have concentrated on applying neural networks to multi-disciplinary problems. I intend to place high priority in developing neural processing solutions to inter-disciplinary engineering and science problems.

## EDUCATION

UNIVERSITY OF MISSOURI-ROLLA, PhD in Electrical Engineering.  
Planned graduation in August 2005. Dissertation: Neural Network Demodulators for Bragg Strain Sensors. Advisors: Drs. Donald C. Wunsch and Steve E. Watkins

University of Missouri-Rolla, MS Electrical Engineering, December 2002.  
Thesis: Vibration Analysis Using Extrinsic Fabry-Perot Interferometric sensors and Neural Networks. Advisors: Drs. Donald C. Wunsch and Steve E. Watkins.

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

## RELEVANT COURSES OF STUDY

Neural Networks, Communication Systems II, Electromagnetic Engineering, Digital Signal Processing, Fiber Optic Communications, Microwave and Radar Techniques, Telematics, Smart Materials & Sensors, Information Theory and Coding, Dynamic Programming & Markov Processes, Fourier Optics, Optical and Quantum Electronics, Adaptive Critic Designs, Electromagnetic optics, Semiconductor Devices, Fiber and Integrated Optics, Intelligent Search Techniques, and Teaching Engineering, Antenna Theory, Introduction to Computer Engineering and Digital Systems Design.

## EXPERIENCE

### **Research Assistant, University of Missouri-Rolla, August 2000-present**

- Active research in the area of Smart Structures with extensive application of neural network architectures to fiber optic signal processing, feature extraction and interpretation.
- Active research in application of neural networks in the area of skin cancer detection and classification.

### **Instructor, University of Missouri-Rolla, August 2001-present**

- Teaching assistant in teaching undergraduate Electrical Engineering lab courses (Circuits 1 & 2, and Electromagnetics).
- Course revision and remodeling of lab course and manual.
- Instructor for undergraduate lecture (Introduction to Computer Engineering, Digital System Design).
- Training in teaching by taking a course in "Teaching Engineering"

### **QATAR MULTI-TECH EST., Doha, Qatar, December 1999-July 2000**

- Worked as a Project Engineer
- Monitored and managed the daily activities of the company
- Uplifted the company's position in the market via extensive marketing And Public relations
- Quality control to provide excellent service to the customers
- Quantity estimation and Cost control for projects and tenders. Introduced new products to the Board of Directors for Approval. This included communication with international companies including MacroTel Corporation, ABL Canada, HFCL India, Commscope

### **APTECH Computer Education, Doha, Qatar March 1999-July 1999**

- Worked as a Marketing Executive
- Marketed computer software courses via extensive advertising
- Accelerated the corporate education program

### **HONORS & ACTIVITIES**

- Member of Student **IEEE**
- Member of IEEE Neural Network Society.
- Member of Student **Toastmasters** at **UMR**. Received Competent Toastmaster (CTM) certificate on October 9<sup>th</sup>, 2003.
- Member of Electrical and Computer Engineering honor society Eta Kappa Nu (HKN)
- Session chair at International Joint Conference on Neural Networks (IJCNN) 2003, Portland, Oregon, USA.
- Council of Graduate Students (CGS) outstanding graduate teaching assistant for department of Electrical and Computer Engineering (2003-2004)

### **PUBLISHED PAPERS**

#### **JOURNAL:**

- 1) 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), January 2004, pp. 66-71.
- 2) R. Dua, S. E. Watkins, and D. C. Wunsch, "Demodulation of Extrinsic Fabry-Perot Interferometric Sensors for Vibration Testing using Neural Networks," Accepted to Journal of Optical Engineering, 43 (12), December 2004.
- 3) R. Dua, S. E. Watkins, S. Mulder, and D. C. Wunsch, " Matlab-Based Neural Network Introduction for Sensors Curriculum," Accepted to International Journal of Engineering Education.

#### **CONFERENCE:**

- 1) 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," Proceedings of the IJCNN 2001, 15-19 July, Washington D.C., pp 681-686. (2001)
- 2) 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," Proceedings of the NIMIA-NATO conference, Crema, Italy, (2001) [different version].
- 3) R. Dua, S. E. Watkins, and D.C. Wunsch, "Vibration Analysis Using Extrinsic Fabry-Perot Interferometric Sensors and Neural Networks,"

Proceedings of the ANNIE conference, St. Louis, MO, 2002, vol-12, pp. 907-912. (2002).

- 4) 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,” Proceedings of the IJCNN 2003, Portland, Oregon, July 20-24, pp. 2667-2672. (2003).

## REFERENCES

- 1) Dr. Donald C. Wunsch, Mary K. Finley Distinguished Professor in Computer Engineering, University of Missouri-Rolla, Tel: 573-341-4521, E-mail: [dwunsch@ece.UMR.edu](mailto:dwunsch@ece.UMR.edu)
- 2) Dr. Steve E. Watkins: Associate Professor in Electrical Engineering, University of Missouri-Rolla, Tel: 573-341-6321, E-mail: [watkins@umr.edu](mailto:watkins@umr.edu)
- 3) Dr. Daryl Beetner: Associate Professor in Computer Engineering, University of Missouri-Rolla, Tel: 573-341-6203, E-mail: [daryl@umr.edu](mailto:daryl@umr.edu)
- 4) Dr. Richard E. DuBroff: Professor in Electrical Engineering, University of Missouri-Rolla, Tel: 573-341-4719, E-mail: [red@umr.edu](mailto:red@umr.edu)