

## YUHONG ZHANG

Department of Engineering  
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### EDUCATION

- **Ph.D.** Electrical Engineering, University of Toledo, Toledo, USA, 05/2008  
**Dissertation:** *Resource allocation strategies in multimedia wireless networks*  
**Adviser:** Dr. Ezzatollah Salari,
- **M.Sc.** Electrical and Computer Engineering, University of Manitoba, Winnipeg, Canada, 05/2000.  
**Thesis:** *Design and realization of FIR and Bireciprocal Wave Digital Filters.*  
**Adviser:** Dr. G. O. Martens
- **M.Sc.** Applied Mathematics, Hebei University of Technology, Tianjin, China, 07/1987.  
**Thesis:** *The Ill-posed Problem in the First Kind of Fredhold Equations,*  
**Adviser:** Shou Hao
- **B.Sc.** Mathematics, Shandong University, Jinan, China, 07/1984.

### APPOINTMENTS

- **09/2013-Present** Associate Professor, Department of Engineering Technology, Texas Southern University, Houston, Texas, USA.
- **01/2008-9/2013** Assistant Professor, Department of Engineering Technology, Texas Southern University, Houston, Texas, USA.
- **09/2002-12/2007** Teaching Assistant, Department of Electrical Engineering and Computer Science, University of Toledo, Toledo, USA.
- **01/2002-05/2002** Instructor, Department of Electrical and Computer Engineering, University of Louisiana at Lafayette, LA, USA
- **07/2000-12/2000** Research Scientist, Edge Networks Corporation, Winnipeg, Canada
- **02/1994-04/1996** Assistant Professor, Department of Mathematics, Beijing University of Science and Technology, Beijing, China.
- **07/1987-01/1994** Assistant Professor, Department of Mathematics, Hebei Normal University, Shijiazhuang, China.

### RESEARCH GRANT AS PI

- **Principal Investigator (PI)**, Advanced Speech Feature Extraction for Automated Deception Detection, DHS Science and Technology Directorate Office of University Programs, \$ 50,000, 6/01/2013-11/30/2014

- **Principal Investigator (PI)**, *EAGER: A Study of Security Countermeasures for Cyber-Physical Systems* National Science Foundation (NSF), Award No. 1059116. \$80,000, 09/15/2010-08/31/2013
- **Principal Investigator (PI)**, National Science Foundation (NSF), *Supplementary of NSF*, Award No. 1227709. \$7,800, 04/17/2010-08/31/2013
- **Principal Investigator (PI)**, *Reducing Blocking Artifacts in JPEG Compressed Images Using an Adaptive Neural Network-based Algorithm*, TSU Seed Grant, \$15,000, 2009.

## AWARDS AND HONORS

- Texas Southern University Faculty Award for Mentoring Undergraduate Research/Creative Activities, 2014
- **Summer Research Faculty** with the US Department of Home Land Security Summer Research Team Program for MSIs at the National Center for Border Security and Immigration (BORDERS) in the University of Arizona, Tucson, AZ, May 21-July 27, 2012. Research focused on the speech feature extraction for the deception detection.
- The Third Place of the Faculty Poster Presentation in 2012 TSU Research Week.

## JOURNAL PUBLICATIONS

1. **Y. Zhang** and W. Li, "Modeling and energy consumption evaluation of a stochastic wireless sensor network," *EURASIP Journal on Wireless Communications and Networking*, doi:10.1186/1687-1499-2012-282
2. **Y. Zhang** and E. Salari, "Modeling and Analysis of a Novel CAC Scheme in Heterogeneous Multimedia Wireless Networks," *International Journal of Handheld Computing Research (IJHCR)*, Vol 3, pp 23-26, 2012.
3. **Y. Zhang**, E. Salari and S. Zhang, "Reducing Blocking Artifacts in JPEG Compressed Images Using an Adaptive Neural Network-based Algorithm," *Neural Computing and Application*, DOI: 10.1007/s00521-011-0740-1, November, 2011.
4. **Y. Zhang** and W. Li, "An Energy-Based Stochastic Model for Wireless Sensor Networks," *Wireless sensor network*, Vol. 3, pp. 322-328, 2011.
5. **Y. Zhang** and E. Salari, "A Hybrid Channel Allocation Algorithm with Priority to Handoff Calls in Mobile Cellular Networks," *Computer Communications*, Vol. 32, pp. 880-887, 2009.
6. **Y. Zhang** and E. Salari, "Utilisation analysis and comparison for multimedia wireless networks," *International Journal Ad Hoc and Ubiquitous Computing*, Vol 3, No. 3, pp. 185-190, 2008.

7. G. Martins and **Y. Zhang**, "Design of Wave Digital Lattice Filters with Flat Passband, Equiripple Stopband and Nearly Constant Group Delay," *International Journal of Electronics and Communications*, Vol. 58, pp. 30-36, 2004.
8. **Y. Zhang**, "Reliability Analysis of an (N+1)-unit Standby System with Pre-emptive Priority Rule," *Journal of Microelectronics and Reliability*, vol. 36, No. 1, pp. 19-26, 1996.
9. **Y. Zhang**, "Application of the Regularization Method to the Numerical Solution of the Fredholm's Equations of the First Kind," *Journal of Hebei Normal Institute (Natural Science)* No. 3, pp. 42-52, Mar. 1990.
10. **Y. Zhang**, "Solving the Fredholm's Integral Equations of the First Kind by Using the Regularization Approach," *Journal of Hebei Normal Institute (Natural Science)* No. 12, pp. 20-24, 1989
11. **Y. Zhang**, "A Regularization Method to the Fredholm's Integral Equation of the First Kind," *Journal of Hebei Normal University (Natural Science)* No. 4, pp. 45-53, 1989.
12. **Y. Zhang**, "Solve Mellin Integral Equation by Using the Regularization Method," *Journal of Science and Technology*, No. 2, pp. 15-18, Feb, 1989.

#### **PUBLICATIONS IN CONFERENCE PROCEEDINGS**

1. **Y. Zhang**, A.C. Elkins, J. F. Nunamaker, Jr., "Pitch Detection Algorithms Modifications and Implementations towards Automated Vocal Analysis," 11<sup>th</sup> IEEE International Conference on Networking, Sensing and control, April 7-9, 2014, Miami, FL, USA.
2. **Y. Zhang**, X. Chen and L. Kehinde, "Developing Digital/Analog Telecommunication Laboratory." in *Proceedings of ASEE annual conference and exposition*, Vancouver, Canada, June 26-29, 2011.
3. X. Chen, **Y. Zhang**, L. Kehinde, and D. Olowokere, "Developing Virtual and Remote Undergraduate Laboratory for Engineering Technology," in *Proceedings of ASEE Annual Conference & Exposition*, Louisville, KY, June, 2010.
4. Y. Zhang and W. Li, "A Spectrum Sharing Scheme in Two Cellular Wireless Networks" in the Proceeding of *First International Workshop on Mobile Multimedia Networking Workshop (IWMMN) 2010*, Chicago, USA, Jun.29--Jul.2, 2010.
5. **Y. Zhang**, "The Application of MATLAB to Teaching Communication Systems," in *Proceedings of ASEE annual conference and exposition*, Austin, USA, June 14-17, 2009.
6. **Y. Zhang** and S. Salari, "A Novel Post-processing Method for Reducing Blocking Artifacts in Block-Coded Images," in *Proceedings of 2006 IEEE International Conference on Electro/information Technology*, East Lansing, MI, USA, May 9-11, 2006.
7. W. Li, **Y. Zhang**, and S. Man, "Numerical Analysis for the Optimal Reserved Channel Numbers in Reserved Channel Scheme with Hybrid Revenue of Incomplete and Complete

Calls," in *Proceedings of the IEEE Wireless Communications (WirelessCom' 2005)*, Hawaii, USA, June 13-16, 2005.

8. Wei Li , S. Man and **Y. Zhang** "The Optimal Reservation Channel Numbers in a Reserved Channel Allocation Scheme with Linear Revenue Function of Actual Call Connection Time," in *Proceedings of The 9th International Conference on Telecommunications*, pp.38-42, Beijing, China, June 23-26, 2002.
9. **Y. Zhang**, "Cascade Decomposition with Canonical Scattering Polynomials," in the *Proceeding of 1999 Graduate Conference, GRADCON'99*, Winnipeg, Manitoba, Canada, Oct. 1, 1999.

## PRESENTATION AND WORKSHOPS

1. Edilberto, M Mendez and Yuhong Zhang "Speech Recognition System Using Matlab," Poster Presentation in TSU research week, April, 2014.
2. **Yuhong Zhang**, Isidro Cervantes and Erik Lége, "Advanced Speech Feature Extraction for Automated Deception Detection," Poster presentation in TSU research week, April, 2013,
3. W. Zhao and **Y. Zhang**, "Networking Infrastructure of Secured Cyber-Physical Systems" Poster Presentation in NSF CPS principal investigator meeting, National Harbor, MD. Oct. 3-4, 2012.
4. **Y. Zhang**, "Some Pitch Detection Algorithms' Modification and Implementation," Presentation to the National Center for Border Security and Immigration (BORDERS) in the University of Arizona, Tucson, AZ, July 19, 2012.
5. **Y. Zhang**, "NSF project: Security Countermeasure for Cyber-Physical Systems," Poster presentation in the TSU Research Week, April 3, 2012
6. W. Zhao and **Y. Zhang**, "A Study of Security Countermeasures for Cyber-Physical Systems," Poster Presentation in NSF CPS principal investigator meeting, National Harbor, MD. Aug. 1-2, 2011.
7. **Y. Zhang**, "Development of Digital/Analog Telecommunication Laboratory Courses," Presentation in the TSU Virtual and Remote Laboratory (VR-Lab) Faculty Work Shop, Aug.16, 2011.
8. **Y. Zhang**, W. Li, "A Spectrum Sharing Scheme in Two Cellular Wireless Networks" Presentation at First International Workshop on Mobile Multimedia Networking Workshop ( IWMMN) 2010, Chicago, USA, Jun.29--Jul.2, 2010.

## PROFESSIONAL SERVICE

- **Editor** for *Journal of Communications and Information Sciences*.  
<http://www.aicit.org/jcis/home/editorial.html>

- **Editor** for *International Journal of Information Processing and Management*, <http://www.aicit.org/ijipm/home/editorial.html>
- **Editor** for *Journal of Next Generation Information Technology*, <http://www.aicit.org/jnit/home/editorial.html>
- Member of Technical Program Committee (**TPC**) of *IEEE CIT 2012 - Mobile Multimedia Communications*
- Member of Technical Program Committee (**TPC**) of *IEEE International Conference on Communication Technology - ICCT 2011*.
- Panelist for NSF GRFP 2011 - Computer Science
- Member, American Society for Engineering Education (ASEE).
- Referee for major Professional Journals, including *IEEE Transaction on Wireless Communication*, *Journal of Telecommunications*, *EURASIP Journal on Wireless Communications and Networking*, etc.

### UNIVERSITY SERVICE

- Service at College of Science and Technology's Research Committee, Texas Southern University
- Service at College of Science and Technology's Suspension and Re-Admission Committee
- Served at College, College of Science and Technology's Fundraising Committee, Texas Southern University.
- Service at different Departmental Committees, Department of Engineering Technology, Texas Southern University.
- Service as graduate representative at Texas Southern University

### STUDENTS ADVISED/SUPPORTED

- **Isidro Cervantes and Erik Lege**, Advised them during the Summer of 2012 with the DHS summer research team program for MSIs. The research topic is "Speech Signal Denoising"
- **Jude Agbanobi and Erik Lege** Support them by NSF research grant. The research project is "Approach for Network Security".
- **Edilberto Mendez**. Support him during the summer of 2013 with the DHS research award

### COURSE TAUGHT AT TSU

- **ECE 334 Signal and System** covers the fundamentals of signal and system analysis, focusing on representations of discrete-time and continuous-time signals and representations of linear, time-invariant systems. Prerequisites: MATH 242

- **ECE 330 Engineering Mathematics Analysis** covers the fundamental mathematics required for engineering and technology students. It includes, complex number, sequence, matrices, integration applications, differential equations and others. Prerequisites: MATH 251
- **ELET 331 Communication Systems** Study of basic communications systems with emphasis on the applications of Fourier series, Fourier transforms, modulation techniques, and transmission lines. Three hours of lecture per week. Prerequisites: MATH 242 and ELET 232. Corequisite: ELET 311.
- **ELET 311 Communication Systems Lab** Experiments on oscillators, transmitters, receiver filters and transmission lines as related to modern electronic communications techniques. Two hours of laboratory per week. Prerequisite: ELET 232. Corequisite: ELET 331.
- **ELET 353 Microproc Software Application** Write a description about the hyperlinks you are adding, so visitors will know what the site contains
- **ELET 130 Introduction to Structure Programming with C++** Structured methods of developing complex technology computer programs using a high level programming in a networked environment. Use of the C++ language as a problem-solving tool is emphasized. Two hours of lecture and two hours of laboratory per week.
- **ELET 214 Digital Logic Circuit Lab** Exercises on logic circuits, combinational and sequential logic devices, and flip-flops. Two hours of laboratory per week. Corequisite: ELET 241.
- **ELET 131 DC Circuit** Direct current topics covered: current, voltage, resistance, power, energy, series and parallel circuits, combination circuits, Ohm's law, Kirchhoff's rules, inductance, capacitance, and magnetism. Three hours of lecture per week. Corequisite: ELET 111.
- **ELET 111 DC Circuit Lab** Laboratory activities on electronic circuits, Ohm's law, voltage, current, resistance, and basic test instruments. Two hours of laboratory per week. Corequisite: ELET 131.
- **CMET 436 Application of Microproc Software** Utilization of micro assemblers to write floating point mathematical routines, special purpose languages, generate relocatable code, etc. Prerequisites: ELET 343, MATH 242. Corequisite: CMET 416.
- **CMET 416 Lab of Application of Microsystem** Practice in writing industrial application programs, such as floating point mathematical routines and special purpose languages utilizing micro assemblers. Corequisite: CMET 436
- **CMET 417 Data Communication Methods Lab** Laboratory experiments in data communication devices. Modems, multiplexers, concentrators, front-end processor, error-checking, simplex/duplex transmission, and telecommunications. Corequisite: CMET 437.
- **CMET 438 Artificial Intelligence** The fundamental principles of artificial intelligence and expert systems are introduced and their application in various areas of science and engineering. Prerequisites: ELET 422.

