Xuemin Chen

Professor
Department of Engineering
Texas Southern University
3100 Cleburne Street, Houston, TX 77004
Office: (713) 313-7285 Email: xuemin.chen@tsu.edu

Professional Preparation

Nanjing Univ. of Sci. and Tech.	P. R. China	Electrical Engineering	B.S.	1985
Nanjing Univ. of Sci. and Tech.	P. R. China	Electrical Engineering	M.S.	1988
Nanjing Univ. of Sci. and Tech.	P. R. China	Electrical Engineering	Ph.D.	1991
University of Houston	USA	Subsurface Sensing	Postdoc	1998-2002

Appointments

2017/09/01–present	Professor with Tenure, Department of Engineering, Texas Southern University, Houston, Texas, USA.
2012/09/01–2017/08/31	Associate Professor with Tenure, Department of Engineering, Texas Southern University, Houston, Texas, USA.
2007/09/01–present	Graduate Faculty, Graduate School, Texas Southern University, Houston, Texas, USA.
2006/09/01–2012/08/31	Assistant Professor (Tenure track), Department of Engineering Technology, Texas Southern University, Houston, Texas, USA.
2002 - 2006	Research Assistant Professor (Non-tenure track), Department of Electrical and Computer Engineering, University of Houston, Houston, Texas, USA.
1998-2002	Postdoctoral Research Associate, Department of Electrical and Computer Engineering, University of Houston, Houston, Texas, USA.
1993-1998	Associate Professor, Department of Automation, Nanjing University of Science and Technology, Nanjing, Jiangsu, China.
1991-1993	Lecturer, Department of Automation, Nanjing University of Science and Technology, Nanjing, Jiangsu, China.

Courses Taught at TSU

Computer Engineering Technology (CMET) Courses

Java Programming, Artificial Intelligence, Operating Systems, Advanced Microcomputer Network/Lab, Application Microprocessor Software/Lab, Data Communication Methods/Lab, Senior Project

Electronic Engineering Technology (ELET) Courses

Direct Current Circuits/Lab, Advanced Structured Programming with C++, Introduction to Structured Programming C++, Alternating Current Circuits, Microprocessor Software Applications

Electrical and Computer Engineering (ECE) Courses

Real-time embedded system/Lab, Computer and Wireless Networks, Control Systems/Lab, Programming for Engineering Applications

Research Interests
Wireless sensor networks, virtual and remote laboratory, structural health monitoring, cyberlearning.

Membership
Senior Member, Institute of Electrical and Electronic Engineer (IEEE), since 2008
Member, Institute of Electrical and Electronic Engineer (IEEE), since 1999
Member, International Association of Online Engineering (IAOE), since 2018

Fellowship
NSF Research Opportunity Award (ROA) Recipient, Bandwidth Adaptation for Cooperative Active Sensing in Wireless Structure Health Monitoring, hosted by University of Houston, June – August, 2009.

Recent Journal Publications
1. K. Xu, C. Ren, Q. Deng, Q. Jin and X. Chen, "Real-time monitoring of bond slip between GFRP bar and concrete structure using piezoceramic transducer enabled active sensing," *Sensors*, vol. 18, no. 8, 2653; doi:10.3390/s18082653, 2018.
2. C. Wang, N. Wang, S. C. Ho, X. Chen, M. Pan and G. Song, "Design of a Novel Wearable Sensor Device for Real-Time Bolted Joints Health Monitoring," in *IEEE Internet of Things Journal*. doi: 10.1109/JIOT.2018.2852653, 2018.
3. Y. Ren, N. Wang, J. Jiang, J. Zhu, G. Song and X. Chen, "The Application of Downhole Vibration Factor in Drilling Tool Reliability Big Data Analytics - A Review," *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*, doi:10.1115/1.4040407, 2018.
4. X. Zhu, J. Li, M. Zhou and X. Chen, "Optimal Deployment of Energy Harvesting Directional Sensor Networks for Target Coverage," *IEEE Systems*, doi: 10.1109/JSYST.2018.2820085, 2018.
5. M. Luo, W. Li, J. Wang, N. Wang, X. Chen and G. Song, "Development of a Novel Guided Wave Generation System Using a Giant Magnetostrictive Actuator for Nondestructive Evaluation," *Sensors*, 18, no. 3: 779. doi:10.3390/s18030779, 2018.
6. N. Wang, G. Song, and X. Chen, "Framework for Rapid Integration of Offline Experiments into Remote Laboratory." *International Journal of Online Engineering (iJOE)*, vol. 13, no. 12 (2017): 192-205.
7. Y. Wanyan, X. Chen, and D. Olowokere, "Integration of artificial intelligence methodologies and algorithms into the civil engineering curriculum using knowledge-based expert systems: A case study." *Engineering Education Letters* 2017, no. 1 (2017): 3.
8. N. Wang, J. Zhu, Q. Lan, X. Chen, G. Song, and H. Parsaei. "Integration of a remote PID motor speed control experiment with teaching in engineering education." *Engineering Education Letters* 2017, no. 1 (2017): 1.
9. Z. Wang, X. Chen, P. Wang, "Adaptive-ID Secure Identity-Based Signature Scheme from Lattices in the Standard Model", *IEEE Access*, vol. 5, pp. 20791-20799 doi: 10.1109/ACCESS.2017.2757464, 2017.

10. B. Xu, H. Chen, Y.-L. Mo and X. Chen, “Multi-physical field guided wave simulation for circular concrete-filled steel tubes coupled with piezoelectric patches considering debonding defects,” *International Journal of Solids and Structures*, vol. 122-123, pp. 25-32, doi: 10.1016/j.ijsolstr.2017.05.040, 2017.
11. X. Zhu, J. Li, X. Chen and M. Zhou, “Minimum Cost Deployment of Heterogeneous Directional Sensor Networks for Differentiated Target Coverage,” *IEEE Sensors Journal*, vol. 17, no. 15, pp. 4938-4952, doi: 10.1109/JSEN.2017.2712198, 2017.
12. X. Zhu, J. Li, X. Chen and M. Zhou, “Minimum Cost Deployment of Heterogeneous Directional Sensor Networks for Differentiated Target Coverage,” *IEEE Sensors Journal*, doi: 10.1109/JSEN.2017.2712198, 2017.
13. N. Wang, X. Chen, Q. Lan, G. Song, and H. Parsaei, “A Novel Wiki-Based Remote Laboratory Platform for Engineering Education,” *IEEE Transactions on Learning Technologies*, vol. 10, no. 3, pp. 331-341, doi: 10.1109/TLT.2016.2593461, 2017.
14. N. Wang, X. Chen, G. Song, Q. Lan, and H. Parsaei, “Design a New Mobile Optimized Remote Laboratory Application Architecture for M-Learning,” *IEEE Transactions on Industrial Electronics*, vol. 64, no. 3, pp. 2382-2391 doi: 10.1109/TIE.2016.2620102, 2017.
15. N. Wang, X. Chen, G. Song, and H. Parsaei, “An Experiment Scheduler and Federated Authentication Solution for Remote Laboratory Access,” *International Journal of Online Engineering*, vol. 11, no. 3, pp. 20-26, 2015.
16. N. Wang, J. Weng, X. Chen, G. Song, and H. Parsaei, “Development of a Remote Shape Memory Alloy Experiment for Engineering Education,” *Engineering Education Letters*, vol. 2015:2, 1-20, 2015.
17. N. Wang, X. Chen, G. Song, and H. Parsaei, “Using Node-HTTP-Proxy for Remote Experiment Data Transmission Traversing Firewall,” *International Journal of Online Engineering*, vol. 11, no. 2, pp. 60-67, 2015.
18. N. Wang, X. Chen, G. Song, and H. Parsaei, “A Novel Real-time Video Transmission Approach for Remote Laboratory Development,” *International Journal of Online Engineering*, vol. 11, no. 1, pp. 4-9, 2015.

Book Publication

1. Computational Data and Social Networks, Proceedings of 7th International Conference, CSoNet 2018, Chen, X., Sen, A., Li, W.W., Thai, M.T. (Eds.), LNCS 11280, ISBN 978-3-030-04647-7, Springer, 2018.

Book Chapter Publications

1. L. Kehinde, X. Chen, K. Ayodele and O. Akinwale, "Developing Remote Labs for Challenged Educational Environments", chapter 22 in *Internet Accessible Remote Laboratories: Scalable E-Learning Tools for Engineering and Science Disciplines*, IGI Global, Edited by Abul K. M. Azad, Michael E. Auer and V. Judson Harward, pp 432 – 452, 2011.
2. R. Liu, L. Zhou and X. Chen, “Wireless sensors for structural monitoring,” chapter in *Strong Motion Instrumentation for Civil Engineering Structures (NATO Science Series E)*, Kluwer Academic Publishers, Netherlands, 2001.

Selected Recent Conference Publications

1. N. Wang, and X. Chen. "A Formal Model for Temporal-Spatial Event in Internet of Vehicles." In *International Conference on Computational Social Networks*, pp. 222-234. Shanghai, China, December 18 – 20, 2018.
2. R. Doost-Mohammady, L. Zhong, J. R. Cavallaro, E. Knightly, Z. Morley Mao, W. Wayne Li, X. Chen and A. Sabharwal, "RENEW: Programmable and Observable Massive MIMO Networks," invited paper, 5*2nd Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, California, 2018.
3. A. Mohan, K. Gauen, Y.-H. Lu, W. Wayne Li, X. Chen, "Internet of Video Things in 2030: A World with Many Cameras," *2017 IEEE International Symposium on Circuits & Systems (ISCAS)*, pp. 286-289, Baltimore, MD, May 28 – 31, 2017.

Research Grants

1. Principal Investigator, "NeTS: Medium: Collaborative Research: Riding the Stress Wave: Integrated Monitoring, Communications, and Networking for Subsea Infrastructure," National Science Foundation, Award No, CNS-1801811, $120,000, 09/01/2018 – 08/31/2021.
2. Co-Principal Investigator, "RENEW: A Reconfigurable Eco-system for Next-generation End-to-end Wireless Testbed," National Science Foundation via William Marsh Rice University, $320,998, 04/01/2018 - 03/31/2023.
3. Faculty Associate, "Development of Knowledge-Based System for Integrating Artificial Intelligence into the Undergraduate Engineering Curriculum at Texas Southern University," National Science Foundation, Award No. HRD-1533569, 9/1/2015-8/31/2018.
4. Principal Investigator, "Hands-on Experiment via Internet - To Develop a Unified Remote Laboratory Framework for Cross Nation Engineering Education," Qatar National Research Fund (QNRF), 4th cycle of the national Priorities Research Program (NPRP), Award No. 4-892-2-335. Collaboration with University of Houston and Texas A&M University at Qatar, 1/15/2012 – 5/15/2016.
5. Investigator, "Center for Research on Complex Networks," NSF CREST, Award No. HRD-1137732, 9/1/2011- 8/31/2017.
6. Principal Investigator, "Collaborative Research: Developing Virtual and Remote Undergraduate Laboratory for Engineering Technology," NSF CCLI Type 1, Award No. DUE-0942778. Collaboration with Prairie View A&M University, 1/1/2010-12/31/2012.
7. Principal Investigator, "Collaborative Research: Develop Next Generation Unified Framework for Remote Laboratory Experiments," NSF IEECI, Award No. EEC-0935008. Collaboration with University of Houston, 9/1/2009-8/31/2012.
8. Co-Principal Investigator, "Targeted Infusion Grant: Development of Virtual and Remote Laboratory for Engineering Technology Undergraduate Students," NSF HBCU-UP, Award No. HRD-0928921. 9/1/2009-5/31/2012.
9. Principal Investigator, "A New Secure Communication Scheme Based on Adaptive Observers for Delayed Uncertain Neural Networks", Texas Southern University Seed Grant, 2007-2008.

Awards

1. Distinguished Research/Scholarly Activity Award, College of Science, Engineering and Technology, Texas Southern University, 2016.

2. Best conference paper award, 11th IEEE International Conference on Networking, Sensing and Control (IEEE ICNSC 2014), Miami, FL., 2014
3. Faculty Award for Mentoring Undergraduate Research/Creative Activities, Texas Southern University, 2012.
4. Distinguished Undergraduate Advising Award, College of Science and Technology, Texas Southern University, 2011.
5. Dean's Leadership Award for Research Committee, College of Science and Technology, Texas Southern University, 2011.
6. Top Research Innovations and Findings, Texas Department of Transportation, 2004.

Synergistic Activities

1. Initiated and developed virtual and remote laboratory (http://vr-lab.tsu.edu/) for engineering and engineering technology education at Texas Southern University. It was supported by NSF HBCU-UP, CCLI, IEECI, and Qatar National Research Fund NPRP programs.
2. Developed a new unified framework for remote laboratory experiments. Made significant contributions to this research area with more than 40 publications in refereed journals, book chapter and conferences.
3. Developed thickness measurement of reinforced concrete pavement by using ground penetrating radar which claimed the Top Research Innovations and Findings award from Texas Department of Transportation (TxDOT) in 2004. Served as project Co-PI of more than 10 successful research projects sponsored by TxDOT.
4. Serving as the associate editor for Systems Science & Control Engineering from 2013 and the associate editor for International Journal of Online Engineering (iJOE) from 2017.
5. Serving as TPC co-chair of CSoNet 2018; Served as program co-chair of IEEE ICNSC 2016 and 2015, special session chair of IEEE ICNSC 2014, symposium co-chair of ASCE Earth and Space 2010 and 2012, program co-chair of IEEE ICNSC 2008, and student activity chair of IEEE ICNSC 2010. Served as technical program committee member in more than 8 international conferences organized by IEEE and ASCE.
6. Serving as active reviewer for many high impact factor journals.