

# SUXIA CUI

## CONTACT

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## EDUCATION

**Ph.D.** in Computer Engineering, Mississippi State University, Starkville, MS, August 2003  
Dissertation: “Motion Estimation and Compensation in the Redundant Wavelet Domain”  
Advisor: Dr. James E. Fowler

**M.S.** in Electrical Engineering, Beijing University of Technology, Beijing, China, August 1999  
Thesis: “Research on Laser Beam Quality Analysis and Evaluation System”  
Advisor: Professor. Xiaoqi Cao

**B.S.** in Electrical Engineering, Beijing University of Technology, Beijing, China, August 1996  
*Minor:* Computer Science

## PROFESSIONAL EXPERIENCE

**Associate Professor**, Department of Electrical and Computer Engineering, Prairie View A&M University, Prairie View, TX, Sept. 2012 – present

**Assistant Professor and Computer Engineering Program Coordinator**, Department of Electrical and Computer Engineering, Prairie View A&M University, Prairie View, TX, January 2009 – Aug. 2012

**Assistant Professor**, Department of Engineering Technology, Prairie View A&M University, Prairie View, TX, September 2003 – December 2008 (**Computer Engineering Technology Program Coordinator** September 2005 – December 2008)

**Research Assistant**, Engineering Research Center, Mississippi State University, Starkville, MS, January 2000 – August 2003

**Teaching Assistant** -- Department of Electrical and Computer Engineering, Mississippi State University, Starkville, MS, Aug. 1999 – Dec. 1999

**Research Assistant**, Department of Electrical Engineering, Beijing University of Technology, Beijing, China, Sept. 1997 - July 1999

**Teaching Assistant** Department of Electrical Engineering, Beijing University of Technology, Beijing, China, Sept. 1997 – Dec. 1997

## HONORS AND AWARDS

- A finalist for the President George C. Wright Faculty Award 2010-2011 & 2015-2016.
- Roy G. Perry College of Engineering Outstanding Faculty Teaching Award 2011 & 2016.
- Appreciation Certificate for serving as mentor in SERP program 2016 & 2017.
- Appreciation Award for Service to STEM Enrichment Camp, Summer 2006, 2007, 2008, 2010.
- Appreciation Certificate for support and participation as a judge in the 1<sup>st</sup>, 2<sup>nd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, and 6<sup>th</sup> annual STEM research symposium
- Who is who among American Teachers 2005—2006.
- Research Assistantship 2000—2003, Department of Electrical & Computer Engineering, Mississippi State University, MS
- Teaching Assistantship 1999, Department of Electrical & Computer Engineering, Mississippi State University, MS
- Teaching/Research Assistantship 1996 – 1999, Department of Electrical Engineering, Beijing University of Technology, Beijing, China
- Privilege to enter graduate school waived of the national tests, Sept. 1996.
- Excellent Student Awards from Beijing University of Technology, Beijing China, 1993, 1994, 1995, 1996.

## GRANTS AND CONTRACTS

- Co-PI, “S-STEM: Engineering Scholars Program: Fostering the Next Generation of STEM Leaders,” NSF, \$997,508, Sept. 15 –Aug. 31, 2021.
- Co-PI, “Widening Implementation of Evidence-Based Pedagogies in STEM Education,” Department of Education, \$611,453, Sept. 2014–Aug. 2018.
- PI, Supplemental Award for “Targeted Infusion Project: Enriching Computing Curricula through HPC Teaching and Research,” NSF-HBCU-UP-TIP, \$79,887, July 2016–June 2017.
- PI, “Targeted Infusion Project: Enriching Computing Curricula through HPC Teaching and Research,” NSF-HBCU-UP-TIP, \$399,834, September 2013–August 2018.
- PI, “MRI: Acquisition of a High Performance Computer Cluster for Multidisciplinary Computational Research at Prairie View A&M University,” NSF-MRI, \$394,222, October 2012–September 2018.
- PI, “Establish an Intelligent Equipment Lab for Precision Agriculture at Prairie View A&M University,” Department of Agriculture, \$299,974, September 2012–August 2017.
- Senior personnel, “Acquisition and Development of a Cognitive Radio based Wireless Monitoring and Surveillance Testbed for Future Battlefield Communications Research,” U.S. Army Research Office (ARO), \$207,227, Jan.2014 –Jan.2015.
- Co-PI, “Building Computing Aptitude, Confidence, and Engagement for Students (Computing ACES),” NSF BPC-DP, \$599,085, Mar. 2010—Feb. 2016.
- PI, “Advancing Research on Hyperspectral Image Classification,” PVAMU 2013 mini-grant, \$20,000, June 2013–December 2013.
- Co-PI, “Development and Validation of Nozzle Operation Map and an Image Processing Algorithm for the Operation of Mach 4 Supersonic Wind Tunnel at AAMU,” NSF ADVANCE-PAID SEED grant, \$20,000, Aug. 2012–July 2013.
- PI, “Enhance Image and Video Coding Research at Prairie View A&M University”, NSF ADVANCE-PAID SEED grant, \$10,000, June 2011– May 2012.
- Co-PI, “The ARO Center of Battlefield LOS/BLOS Lethality Research (CBLLR),” ARO, \$520,000, Mar. 2010 – Sept. 2011.
- Co-PI, “Targeted Infusion Project: Engineering Technology Undergraduate Laboratories Enhancement with Graphical Development Tool,” NSF HBCU-UP, \$149,916, Sept. 2008 – Aug. 2011.
- Senior personnel, “Enhance Mixed Signal and DSP labs in Engineering Technology Department,” Department of Education, \$805,000, Sept. 2006 – Dec. 2008.

## PUBLICATIONS

### Journal Articles:

1. Y. Zhang, S. Cui, and Y. Wang, “Compressive Sensing Based Image Compression and Transmission for Noisy Channels,” *International Journal of Modern Research in Electrical and Electronic Engineering*, vol. 1, No. 1, pp. 29-41, January 2017.
2. S. Cui, Y. Wang, L. Li, X. Peng, and B. Yalvac, “Introducing High Performance Computing to Undergraduate Students,” *Computers in Education Journal*, vol. 7, No. 4, pp. 104-112, October 2016.
3. D. Bourgeois, S. Cui, Y. Wang, and P. H. Obiomon, “Development of a Decision Support System for Precision Agriculture,” *International Journal of Engineering Research and Technology (IJERT)*, vol. 4, Issue 10, pp. 226-231, October 2015, ISSN: 2278-0181.
4. G. Khan, S. Khan, D. Vaman, and S. Cui, “A Novel Resource Efficient DMMS Approach for Network Monitoring and Controlling Functions,” *International Journal of Wireless & Mobile Network (IJWMN)*, vol. 7, no. 1, Feb. 2015.
5. S. Khan, G. Khan, D. R. Vaman, S. T. Koay, and S. Cui, “Analyzing the Performance of the Dynamic Position Location and Tracking (D-PL&T) of Mobile Nodes Using Omni Directional Antenna in MANET,” *International Journal of Computer Networks & Communications (IJCNC)*, vol. 7, no. 4, July 2015.
6. S. Cui, Y. Wang, X. Qian, and Z. Deng, “Image Processing Techniques in Shockwave Detection and Modeling,” *Journal of Signal and Information Processing*, vol. 4, No. 3B, pp. 109-113, 2013.

7. S. Cui, Y. Wang, Y. Yang, F. M. Nave, K. T. Harris, "Connecting Incoming Freshmen With Engineering Through Hands-On Projects," *American Journal of Engineering Education*, vol. 2, No. 2, pp. 31-41, 2011.
8. Y. Wang, S. Cui, Y. Yang, and J. Lian, "Virtual Reality Mathematic Learning Module for Engineering Students," *Technology Interface Journal*, vol. 10, No. 1, Fall 2009.
9. Y. Wang and S. Cui, "Book Review: Digital Signal Processing," *The Technology Interface Journal*, vol. 9, No. 2, Spring 2009.
10. F. Nave, S. Frizell, S. Cui, J. Perkins, and P. Obiomon, "Charting the Course: The Impact and Implications of the Mentoring Experiences of Female Faculty in the College of Engineering at a HBCU", *Faculty Resource Network Online Journal: Advancing Women and Minorities in the Academy*(2008).
11. S. Cui, Y. Wang, and J. E. Fowler, "Motion Estimation and Compensation in the Redundant-Wavelet Domain Using Triangle Meshes," *Signal Processing: Image Communication*, Vol. 21, pp. 586-598, August 2006.
12. J. E. Fowler, S. Cui, and Y. Wang, "Motion Compensation Via Redundant-Wavelet Multihypothesis," *IEEE Transactions on Image Processing*, Vol. 15, pp. 3102-3113, October 2006.
13. Y. Wang, S. Cui, and J. E. Fowler, "3D Video Coding with Redundant-Wavelet Multihypothesis," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 16, pp.166-177, February 2006.

### Conference Papers:

1. B. Yalvac, X. Peng, D. Eseryel, S. Cui, L.Li, Y. Zhang, A. Ketsetzi, and T. Yuan, "STEM Faculty Development Activities to Widen the Implementation of Evidence-Based Pedagogies," 2018 American Educational Research Association Annual Meeting, New York, NY, April 13-17, 2018.
2. Y. Zhou, S. Cui, Y. Wang, and L. Zhai, "A Refined Attitude Algorithm for AUV based on IMU," *the 15<sup>th</sup> International Conference on Scientific Computing (CSC'17)*, Las Vegas, NV, July 17-20, 2017.
3. S. Wang, F. Tchodimo, H. Wu, A. Thompson, H. Fan, and S. Cui, "Modeling of Transition Metal Complexes," *the 15<sup>th</sup> International Conference on Scientific Computing (CSC'17)*, Las Vegas, NV, July 17-20, 2017.
4. B. Yalvac, A. Ketsetzi, X. Peng, S. Cui, L.Li, Y. Zhang, D. Eseryel, T. F. Eyupoglu, and T. Yuan, "Cultivating Evidence-Based Pedagogies in STEM Education," *ASEE 124<sup>th</sup> Annual Conference & Exposition*, Columbus, OH, June 25-28, 2017.
5. S. Cui, Y. Wang, L. Li, X. Peng, and B. Yalvac, "Introducing High Performance Computing to Undergraduate Students," *ASEE 123<sup>rd</sup> Annual Conference & Exposition*, New Orleans, LA, June 26-29, 2016.
6. X. Peng, T. Yuan, U. Nadeem, A. Ketsetzi, B. Yalvac, D. Eseryel, F. Eyupoglu, and S. Cui, "Assigning Students Teacher's Role: A Student-Centered Approach in Computer-Aided Design Education," *ASME 2016 International Mechanical Engineering Congress and Exposition*, vol. 5, No. IMECE2016-66871, pp. V005T06A008, Phoenix, AZ, Nov. 11-17, 2016.
7. S. Biswas, Y. Wang, and S. Cui, "Surgically Altered Face Detection Using Log-Gabor Wavelet," in *the Proceedings of The 12th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, Chengdu, China, December 18-20, 2015, pp. 154-157.
8. Y. Wang and S. Cui, "Enhance Project-Based Learning Experience for Undergraduate Students with Wireless Sensor Network," *ASEE 122<sup>nd</sup> Annual Conference & Exposition*, Seattle, WA, June 14-17, 2015.
9. S. Cui and Y. Wang, "Enhance Computing Curricula with High Performance Computing Teaching and Research," *ASEE 122<sup>nd</sup> Annual Conference & Exposition*, Seattle, WA, June 14-17, 2015.
10. Y. Zhou, S. Cui, and Y. Wang, "Design of Autonomous Underwater Vehicle (AUV) Control Unit," *2015 ASEE Gulf Southwest Annual Conference*, San Antonio, TX, March 25-27, 2015.
11. Y. Wang and S. Cui, "Hyperspectral Image Feature Classification using Stationary Wavelet Transform," *Proceedings of the 2014 International Conference on Wavelet Analysis and Pattern Recognition (ICWAPR)*, Lanzhou, China, July 13-16, 2014.
12. S. Cui, Y. Wang, E. Risch, and D. Bourgeois, "Educational Project on Decision Support System for Precision Agriculture," *2014 ASEE Gulf Southwest Annual Conference*, New Orleans, LA, Mar. 2-4, 2014. <http://asee-gsw.tulane.edu/pdf/educational-project-on-decision-support-system-for-precision-agriculture.pdf>
13. S. Cui, and Y. Wang, "Creating On-line Materials for Computer Engineering Courses," *2014 ASEE Gulf Southwest Annual Conference*, New Orleans, LA, Mar. 2-4, 2014. <http://asee-gsw.tulane.edu/pdf/creating-on-line-materials-for-computer-engineering-courses.pdf>

14. Y. Wang, S. Cui, E. Risch, Y. Lan, J. Lian, and K. Lee, "Enhance Multi-Disciplinary Experience for Agriculture and Engineering Students with Agriculture Robotics Project," *2014 ASEE Gulf Southwest Annual Conference*, New Orleans, LA, Mar. 2-4, 2014. <http://asee-gsw.tulane.edu/pdf/enhance-multi-disciplinary-experience-for-agriculture-and-engineering-students-with-agriculture-robotics-project.pdf>
15. A. Lodgher, Y. Yang, and S. Cui, "Increasing the Aptitude and Confidence for Computer Science and Engineering in Texas Rural High Schools," *2014 ASEE Gulf Southwest Annual Conference*, New Orleans, LA, Mar. 2-4, 2014. <http://asee-gsw.tulane.edu/pdf/increasing-the-aptitude-and-confidence-for-computer-science-and-engineering-in-texas-rural-high-schools.pdf>
16. Y. Wang, Y. Lan, Y. Zheng, K. Lee, S. Cui, and J. Lian, "A UGV-Based Laser Scanner System for Measuring Tree Geometric Characteristics," in *Proceedings of 2013 SPIE International Symposium on Photoelectronic Detection and Imaging*, Vol. 8905, Beijing China, June 25-27, 2013, doi: 10.1117/12.2042341.
17. S. Cui, Y. Wang, and A. Kumar, "Introduce Computer Engineering to Middle School Students through a Science Project," in *Proceedings of ASEE 120<sup>th</sup> Annual Conference & Exposition*, Atlanta, Georgia, June 23-26, 2013.
18. S. Cui and Y. Wang, "Develop a Multi-platform Information and Communication Technology System for Precision Agriculture", in *Proceedings of 2013 International Symposium on Computer Science and Electrical Engineering*, June 14-16, 2013, Beijing, China.
19. S. Cui, Y. Yang, and A. Lodgher, "Media Computation Project for High School Students," in *Proceedings of the 2012 Hawaii University International Conferences*, Honolulu, Hawaii, July 2012.
20. Y. Wang, S. Cui, and J. Lian, "Construction of Agricultural Robot Platform," in *Proceedings of the 2012 Hawaii University International Conferences*, Honolulu, Hawaii, July 2012.
21. Y. Zhang, S. Cui, D.R.Vaman, "Optimized Compressive Image Sensing System over Mobile Wireless Noisy Channel," in *Proceedings of the 2012 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, July 2012.
22. S. O. Aboagye, S. Cui, "Hyperspectral Image Feature Extraction and Selection Using Empirical Mode Decomposition PCA," in *Proceedings of the 2012 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, July 2012.
23. A. Famodimu, S. Cui, Y. Wang, and C. M. Akujuobi, "Block-based Video Compressive Sensing with Exploration of Local Sparsity," in *Proceedings of the 2012 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, July 2012.
24. Y. Wang, Y. Lan, J. Lian, and S. Cui, "Broaden Engineering Technology Students' Knowledge through Hands-on with Motion Robotics," *ASEE 119<sup>th</sup> Annual Conference & Exposition*, San Antonio, Texas, June 10-13, 2012.
25. S. Cui, Y. Yang, A. Lodgher, and K. Phelps, "Strengthen Computing Discipline Recruitment with Educators Collaboration," *2011 ASEE Gulf Southwest Annual Conference*, Houston, TX, Mar. 9-10, 2011. <http://www.tech.uh.edu/aseegsw2011/papers/T3A-3.pdf>
26. S. Cui, P. Obiomon, and P. Cofie, "Bridge Senior Design into Contemporary Issues," *2011 ASEE Gulf Southwest Annual Conference*, Houston, TX, Mar. 9-10, 2011. <http://www.tech.uh.edu/aseegsw2011/papers/T1A-5.pdf>
27. Y. Zhang, S. Cui, and D. R. Vaman, "Compressive Sensing Based Optimized Image Transmission over Wireless Gaussian Channel," in *Proceedings of the 2010 2<sup>nd</sup> International Conference on Intellectual Technique in Industrial Practice*, Changsha, China, Sept. 8-9, 2010.
28. S. Cui, J. Fuller, W. Ali, and P. Holland-Obiomon, "Educate New Generation on Nuclear Technology through Collaborating Engineering Project," in *Proceedings of the 2010 ASEE Northeast Section Conference*, Boston, MA, May 7-8 2010. (Track: Interdisciplinary programs, sustainability and alternative energy as related to engineering education)
29. S. Cui, Y. Wang, F. M. Nave, and K. T. Harris, "Teach Computer Techniques through Multimedia," *Proceedings of the 2010 ASEE Northeast Section Conference*, Boston, MA, May 7-8 2010. (Track: Tools, techniques, and best practices of engineering education for the digital generation.)
30. Y. Zhang, Y. Wang, K. M. Akujuobi, and S. Cui, "Engineering Technology Laboratory Enhancement with Lab VIEW," in *Proceedings of the 2010 ASEE annual conference & exposition*, Louisville, Kentucky, June 20-23, 2010.

31. S. Cui, Y. Wang, Y. Yang, and S. Koay, "Revamp Computer Education with Multimedia and Game," in *Proceedings of the 2010 ASEE annual conference & exposition*, Louisville, Kentucky, June 20-23, 2010.
32. Y. Wang, Y. Zhang, C. M. Akujuobi, and S. Cui, "Progress and Strategies of Engineering Technology Revamping Plan at PVAMU," *Earth & Space 2010*, Honolulu, HI, March 14-17.
33. Y. Wang, S. Cui, J. Lian, Y. Yang, and C. M. Akujuobi, "Image Completion in Redundant Wavelet Domain," in *Proceedings of the 2009 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, July 2009.
34. Y. Zhang, S. Cui, Y. Wang, and C. M. Akujuobi, "Taking Action: Enhancing Engineering Technology Laboratories with LabVIEW-Based Graphical Development Tools," in *Proceedings of ASEE annual conference & exposition 2009*, Austin, TX, June 2009.
35. M. Ketkar and S. Cui, "Development of Engineering Applications of Algebra and Trigonometry Laboratory Course for Engineering Technology Students", *2009 ASEE Gulf Southwest Conference*, Waco, TX, Mar. 2009.
36. Y. Wang, S. Cui, J. Lian, and C. M. Akujuobi, "Image Object Removal in Redundant Wavelet Transform Domain," in *Proceedings of SPIE-IS&T Electronic Imaging*, San Jose, CA, January 2009, vol. 7245, pp. 72450C-1 to 72450C-8.
37. S. Cui, Y. Wang, Y. Zhang, and C. M. Akujuobi, "Laboratories Enhancement with LabVIEW-Based Graphical Development Tools," *ASEE annual conference & exposition*, Pittsburg, Pennsylvania, June 2008.
38. Y. Wang, S. Cui, J. Lian, and C. M. Akujuobi, "Perceptual Masking Video Watermarking in 3D-RDWT Domain," in *Proceedings of the 2008 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, July 2008, vol. I, pp. 112-116.
39. S. Cui, Y. Wang, Y. Zhang, C. Akujuobi, "A Hands-on DSP Lab Design for Technology Students", *Texas Instruments Developer Conference Worldwide 2008*, Dallas, TX, Feb. 2008.
40. Y. Zhang, C. Akujuobi, S. Cui, Y. Wang, "Engineering Technology Undergraduate Labs Enhancement", *2008 National Instruments Week*, Austin, TX, Aug. 2008.
41. S. Cui, Y. Wang, and C. M. Ajujuobi, "Biomedical Image Registration Using Redundant Wavelet Transform," *Proceedings of The 24<sup>th</sup> Annual Houston Conference on Biomedical Engineering Research*, Houston, Texas, February 2007.
42. S. Cui and Y. Wang, "Redundant Wavelet Transform in Video Signal Processing," in *Proceedings of The 2006 International Conference on Image Processing, Computer Vision, & Pattern Recognition*, Las Vegas, Nevada, June 2006.
43. S. Cui, Y. Wang, and C. M. Akujuobi, "Redundant Wavelet Transform in Biomedical Image Application," in *Proceedings of NANOBIO 2006*, Irvine, California, June 2006.
44. F. Nave, S. Frizell, P. Holland-Obiomon, S. Cui, J. Perkins, "Assessing the Impacts of the STEM - Enrichment Program on Women of Color", *Women in Engineering Programs and Advocates Network Proceedings*, Pittsburgh PA, June 2006.
45. Y. Wang and S. Cui, "Using Redundant Wavelet Transform in Video Watermarking", in *Proceedings of SPIE*, Boston, Massachusetts, October 2005, vol. 6015, 60150D-1 – 60150D-8.
46. S. Cui, Y. Wang, and J. E. Fowler, "Explore the Multihypothesis Motion Compensation in Video Coding," in *Proceedings of SPIE*, Boston, Massachusetts, October 2005, vol. 6015, 60150A-1 – 60150A-10.
47. S. Cui, Y. Wang, and J. E. Fowler, "Combining Phase-Diversity with Spatial-Diversity Multihypothesis Motion Compensation", in *Proceedings of the IEEE International Midwest Symposium on Circuits and Systems*, Cincinnati, Ohio, August 2005.
48. Y. Wang, S. Cui, and J. E. Fowler, "3D Video Coding Using Redundant-Wavelet Multihypothesis and Motion-Compensated Temporal Filtering," in *Proceedings of the IEEE International Conference on Image Processing*, Barcelona, Spain, September 2003, vol. 2, pp. 755-758.
49. S. Cui, Y. Wang, and J. E. Fowler, "Multihypothesis Motion Compensation in the Redundant Wavelet Domain," in *Proceedings of the IEEE International Conference on Image Processing*, Barcelona, Spain, September 2003, vol. 2, pp. 53-56.
50. S. Cui, Y. Wang, and J. E. Fowler, "Mesh-Based Motion Estimation and Compensation in the Wavelet Domain Using a Redundant Transform," in *Proceedings of the IEEE International Conference on Image Processing*, Rochester, NY, September 2002, vol. 1, pp. 693-696.