Professor Yichuang Sun

Professor Yichuang Sun

Postal address:

University of Hertfordshire, Hatfield, Hertfordshire United Kingdom

y.sun@herts.ac.uk

School of Engineering and Technology Centre for Engineering Research Communications and Intelligent Systems



Overview

Yichuang Sun has received a PhD degree from the University of York, UK. He is currently a Professor and Head of Electronic, Communications and Electrical Engineering in the School of Engineering and Technology of the University of Hertfordshire, UK. Professor Sun has been conducting and leading research in wireless and mobile communications and microelectronic circuits and systems in the School. He has published over 320 papers in peer reviewed journals and conferences and contributed 10 chapters in edited research books. He has also published 4 text and research books: Continuous-time Active Filter Design, CRC Press, USA, 1999, Design of High frequency Integrated Analogue Filters, IEE Press, UK, 2002, Wireless Communication Circuits and Systems, IEE Press, 2004, and Test and Diagnosis of Analogue, Mixed-signal and RF Integrated Circuits - the Systems on Chip Approach, IEE Press, 2008. He has supervised over 30 PhD students and research fellows and over 20 visiting scholars or fellows from across the world.

Professor Sun serves on several Technical Committees of IEEE Circuits & Systems Society and IEEE Communications Society. He has been/is Series Editor of an IEE book series, Editor of 5 IEEE and international journals and Guest Editor of 8 IEEE and IEE journal special issues. He has been on the technical/scientific programme committee of numerous IEEE and international conferences and chaired many sessions. He is a referee for many book publishers, international journals and conferences. He has also been an evaluator of research grant proposals for EPSRC, Royal Society, Austrian, Finnish, Dutch, Singapore and Canadian research councils, and technology patents for USA and UK organisations. Professor Sun has given invited plenary lectures at international conferences and invited talks to industry and universities. He has been evaluator of Changjiang Scholars of China and Canada Research Chairs as well as professorships for universities in USA, Canada, Ireland and the UK, including Minnesota, McGill, Toronto, and Dublin. He has been an external PhD examiner for a number of universities including Southampton, UCL, Imperial College, Queen Mary, McGill, Nanyang Tech and Tsinghua. He has also been external examiner of several UK universities for their undergraduate teaching programmes. He has been a Guest or Visiting Professor of several foreign universities.

Professor Sun has been awarded a number of major awards, prizes and honours, which include: • Best Editor Award, ETRI Journal, from the President of ETRI (Electronics and Telecommunication Research Institute), South Korea, 2009, • First Prize of China's National Science and Technology prizes (Natural Sciences category), nominated by Ministry of Education of China, with Hunan University, China, 2005, • K. M. Stott Prize, by the University of York, UK, for particular merit in postgraduate research, 1995, • Distinguished Researcher in Science and Technology, by the Government of Liaoning Province, 1992, • The Science and Technology Prize for Outstanding Young Scientists, awarded by the Chinese Institution of Navigation (a national professional society), 1991 (only one awarded), • Sino-British Friendship Scholarship, by China's Ministry of Education and British Council, 1991, • 1988-1989 Model Worker of Dalian City, awarded by the Government of Dalian City, China, 1990, • The Young Scientist Programme Award, awarded by URSI (International Union of Radio Sciences), 1989, • Excellent Teaching Achievement Prize, awarded by the Government of Liaoning Province, 1989, • The Excellent Teacher, by Dalian Maritime University, twice in 1986 and 1987, • Listed in 5 international Who's Who books since 1992, by Marquis, USA and IBC, Cambridge, UK.

Wireless and Mobile Communications and Networks

- 1. J. Li, D.-W. Yue and Y. Sun, "Performance Analysis of Millimeter Wave Massive MIMO Systems in Centralized and Distributed Schemes," IEEE Access, Vol.6, 2018.
- 2. A. Bannour, C. Sacchi, and Y. Sun, "MIMO-OFDM Based Energy Harvesting Cooperative Communications Using Coalitional Game Algorithm," IEEE Transactions on Vehicular Technology, Vol. 66, No.12, pp.11166-11179, 2017.
- 3. D.-W. Yue and Y. Sun, "Transmit Power Minimization for MIMO Systems of Exponential Average BER with Fixed Outage Probability", Wireless Personal Communications, Vol.90, No.4, October 2016.
- X. Chen, W. Ni, X. Wang and Y. Sun, "Optimal Quality-of-Service Scheduling for Energy-Harvesting Powered Wireless Communications," IEEE Transactions on Wireless Communications, Vol.15, No.5, 2016.
- 5. X. Chen, W. Ni, X. Wang, and Y. Sun, "Provisioning quality-of-service to energy harvesting wireless communications," IEEE Communications Magazine, Vol.53, No.4, 2015.
- 6. A. Bannour and Y. Sun, "Duality of antennas and subcarriers in massive MIMO-OFDM downlink system," IET Electronics Letters, Vol.51, No.14, 2015.
- 7. D. W. Yue and Y. Sun, "Average transmit power of adaptive ZF very large multi-user and multi-antenna systems," Wireless Personal Communications, Vol.81, No.3, 2015.
- 8. F. Delestre, G. Owojaiye and Y. Sun, "Efficient space-frequency block coded pilot-aided channel estimation method for multiple-input-multiple-output orthogonal frequency division multiplexing systems over mobile frequency-selective fading channels", IET Communications, Vol.8, No.6, 2014.
- 9. G. Owojaiye, F. Delestre and Y. Sun, "Quasi-orthogonal Space-frequency Coding in Non-coherent Cooperative Broadband Networks", IEEE Transactions on Communications, Vol.62, No.4, 2014.
- 10. Y. Sun and D. -W. Yue, editorial, "Cooperative Wireless and Mobile Communications," IET Communications, Vol.7, No.17, 2013.
- 11. A. Bannour, M. L. Ammari, Yichuang Sun and R. Bouallegue, "On the capacity performance of ASTC-MIMO-OFDM system in a correlated Rayleigh frequency-selective channel," Wireless Personal Communications, Vol. 68, No. 4, 2013.
- 12. G. Owojaiye and Y. Sun, "Focal Design Issues Affecting the Deployment of Wireless Sensor Networks for Pipeline Monitoring", Ad Hoc Networks, Vol.11, No.3, 2013.
- G. Owojaiye and Y. Sun "Focal design issues affecting the deployment of wireless sensor networks for intelligent transport systems", IET Intelligent Transport Systems, Vol.6, No.4, 2012.
- A. Bannour, Yichuang Sun, M. L. Ammari, F. Delestre and R. Bouallegue, "A novel algebraic carrier frequency offset estimator for ASTC-MIMO-OFDM systems over a correlated frequency selective channel," IEEE Transactions on Vehicular Technology, Vol.61, No. 6, 2012.

RF. Analogue and Mixed-signal Circuits and Systems

- 1. H. Zhu, Y. Yang, X. Zhu, Y. Sun, and S. W. Wong, "Miniaturized Resonator and Bandpass Filter for Silicon-Based Monolithic Microwave and Millimeter-Wave Integrated Circuits," IEEE Transactions on Circuits and Systems I: Regular Papers, Vol.65, No.12,
- 2. X. Zhang, Z. Chen, Y. Gao, Y. Xu, B. Liu, Q. Yu, Y. Sun, Z. Wang, and B. Chi, "A 0.1-5.0 GHz flexible SDR receiver with digitally assisted calibration in 65 nm CMOS," Microelectronics Journal, Vol. 72, 2018.
- 3. M. Hasan, Y. Zhu, and Y. Sun, "Oscillation-based DFT for Second-order Bandpass OTA-C Filters," Circuits, Systems, and Signal Processing, Vol.37, No.5, 2018.
- 4. M. Ma, X. Cai, Y. Sun, and N. George, "A robust high-efficiency cross-coupled charge pump circuit without blocking transistors," Analog Integrated Circuits and Signal Processing, Vol.95, No.3, 2018.
- 5. X. Zhang, C. Wang, Y. Sun and H. Peng, "A Novel High Linearity and Low Power Folded CMOS LNA for UWB Receivers," Journal of Circuits, Systems and Computers, Vol. 27, No. 3, March 2018.
- 6. J. Zhang, Y. Xu, Z. Zhang, Y. Sun, Z. Wang, and B. Chi, "A 10-bit 4th-order Quadrature Bandpass Continuous-time ΣΔ Modulator with 33-MHz Bandwidth for a Dual-channel GNSS Receiver", IEEE Transactions on Microwave Theory and Techniques, Vol. 65, No.4. April 2017.
- 7. J. Sun, P. Huang, and Y. Sun, "A New Technique for the Design of Multi-phase Voltage Controlled Oscillators," Journal of Circuits, Systems, and Computers, Vol.26, No.7, 2017
- 8. Z. Hu, C. Wang, J. Sun, Y. Sun, and J. Jin, "A Wideband Linear Tunable CDTA and its Application in Field Programmable Analogue Array," Int. Journal of Analog Integrated Circuits and Signal Processing, Vol.88, No.3, September 2016.
- 9. M. Hasan, Y. Zhu and Y. Sun, "Design for Testability of High-order OTA-C filters," International Journal of Circuit Theory and Applications, No.44, October 2016.
- 10. Q. Luo, Y. He and Y. Sun, "Real-Time Fault Detection and Diagnosis System for Analog and Mixed-signal Circuits of Acousto-Magnetic EAS Devices," IEEE Design & Test Magazine, Vol.33, No.3, 2016.
- 11. Y. Sun, B. Chi and H. Zhang, editorial, "Software Defined Radio Transceivers and Circuits for 5G Wireless Communications". IEEE Transactions on Circuits and Systems-II, Vol.63, No.1, 2016
- 12. X. Yu, M. Wei, Y. Yin, Y. Song, S. Han, Q. Liu, Z. Jin, X. Liu, Z. Wang, Y. Sun, B. Chi, "A Fully-Integrated Reconfigurable Dual-Band Transceiver for Short Range Wireless Communications in 180nm CMOS," IEEE Journal of Solid State Circuits, Vol.50,
- 13. W. Zhao, Y. He and Y. Sun, "Structure and realization of pole-shared switched-current complex wavelet filter." Int. Journal of Analog Integrated Circuits and Signal Processing, Vol.85, No.1, 2015.
- 14. W. Zhao, Y. He and Y. Sun, "Switched-current filter structure for synthesizing arbitrary characteristics based on follow-the-leader feedback configuration," Int. Journal of Analog Integrated Circuits and Signal Processing, Vol.82, No.2, 2015.
- 15. X. He, X. Zhu, L. Duan, Y. Sun, and C. Ma, "A 14-mW PLL-Less Receiver in 0.18-µm CMOS for Chinese Electronic Toll Collection Standard," IEEE Transactions on Circuits and Systems-II, Vol.61, No.10, 2014.
- 16. Y. Tan, Y. Sun and D. Lauder, "Automatic Impedance Matching and Antenna Tuning using Quantum Genetic Algorithms for Wireless and Mobile Communications", IET Antenna, Microwave and Propagation, Vol.7, No.8, 2013.

Machine Learning for Electronics and Communications

- 1. Q. Luo, Y. He, Y. Sun, and L. Yuan, "Time-effective Fault Diagnosis Algorithms for Analog and Mixed-signal Circuits Using Sparsity-aware Multi-class Relevance Vector Machine," Proc. IEEE International Symposium on Circuits and Systems, Florence, Italy, May 2018
- 2. Y. Tan, Y. Sun and X. Yin, "Analog fault diagnosis using S-transform preprocessor and a QNN classifier", Measurement, Vol.46, No 7 2013
- 3. L. Yuan, Y. He, J. Huang and Y. Sun, "A new neural network based fault diagnosis approach for analog circuits by using Kurtosis and Entropy as preprocessor," IEEE Transactions on Instrument and Measurement, Vol.59, No.3, 2010.
- 4. Y. Tan, Y. Sun and Y. He, "Analog fault diagnosis based on S-Transform and PSO neural networks," Proc. International Conference on Neural Computation, Valencia, Spain, October 2010.
- 5. M. Peng, M. Shen, Y. He and Y. Sun, "Analog circuit diagnosis using RBF network and D-S evidential reasoning," Transactions of China Electrotechnical Society, No.8, 2009.
- 6. Y. Tan, Y. He and Y. Sun, "Data fused method of fault diagnosis for analog circuits," Analog Integrated Circuits and Signal Processing, Vol.61, No.1, 2009.
- 7. Y. Sun and Y. He, Neural network based approaches for analogue circuit fault diagnosis, Chapter 3 in Test and Diagnosis of Analogue, Mixed-signal and RF Integrated Circuits - the Systems on Chip Approach, IEE Press, 2008.
- 8. Y. He, Y. Tan and Y. Sun, "Wavelet neural network approach for fault diagnosis of analogue circuits," IEE Proceedings: Circuits, Devices and Systems, vol.151, No.4, pp.379-384, 2004.
- 9. Y. He, Y. Tan and Y. Sun, "Class-based neural network method for fault location of large-scale analog circuits," Proc. IEEE International Symposium on Circuits and Systems, May 2003.
- 10. Y. He, Y. Tan and Y. Sun, "A neural network approach for fault diagnosis of large-scale analogue circuits," Proc. IEEE International Symposium on Circuits and Systems, Arizona, USA, May 2002.
- 11. Y. He and Y. Sun, "Neural network-based L1-norm optimisation approach for fault diagnosis of nonlinear circuits with tolerance," IEE Proceedings: Circuits, Devices and Systems, Vol.147, No.4, 2001.
- 12. Y. He and Y. Sun, "Fault isolation in nonlinear analog circuits with tolerances using neural networks," Proc. IEEE International Symposium on Circuits and Systems, Sydney, May 2001.
- 13. Y. Deng, Y. He and Y. Sun, "Fault diagnosis of analog circuits with tolerances using back-propagation neural networks," Proc. IEEE Asia and Pacific Conference on Circuits and Systems, Tianjin, China, December 2000.

View graph of relations

Latest publications

Miniaturized Resonator and Bandpass Filter for Silicon-Based Monolithic Microwave and Millimeter-Wave Integrated

Zhu, H., Yang, Y., Zhu, X., Sun, Y. & Wong, S. W., 12 Dec 2018, In: IEEE Transactions on Circuits and Systems I: Regular Papers. 65, 12, p. 4062-4071 10 p. Article

Performance Analysis of Millimeter Wave Massive MIMO Systems in Centralized and Distributed Schemes

Li, J., Yue, D. W. & Sun, Y., 19 Nov 2018, In: IEEE Access. 6, 1

Article

Time-efficient fault detection and diagnosis system for analog circuits

Luo, Q., He, Y. & Sun, Y., 7 Nov 2018, In: Automatika. 59, 3, p. 303-311

Latest projects

Real Time Spectrum Analyser

KTP

Low Power Reconfigurable Filter for Flexible Wireless Transceiver Chip Development

Space-time Codes for Broadband Wireless

View all (9) »

ID: 65338

Home | Disclaimer | Feedback

© University of Hertfordshire