CURRICULUM VITAE

Dr. **Yue Rong**, Professor
School of Electrical Engineering, Computing and Mathematical Sciences
Curtin University, Bentley
WA 6102, Australia
Phone: +61 8 9266 7398; Fax: +61 8 9266 3197
E-mail: y.rong@curtin.edu.au
URL: http://ddfe.curtin.edu.au/yurong/

PERSONAL BACKGROUND

Date and place of birth: Sept. 23, 1976, Jiangsu, China.

EDUCATION

Ph.D. (**summa cum laude**) in Electrical Engineering, Darmstadt University of Technology, Darmstadt, Germany, Nov. 2005. Dissertation title: "Advanced Algorithms for Multi-Antenna and Multi-Carrier Communication Systems". Advisor: Prof. Alex B. Gershman.

M.Sc. in Electrical Engineering, University of Duisburg-Essen, Duisburg, Germany, Oct. 2002.

B.E. in Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China, Jul. 1999.

ACADEMIC POSITIONS

1. Professor, Department of Electrical and Computer Engineering, Curtin University, Bentley, WA, Australia, since Dec. 2015.

2. Associate Professor, Department of Electrical and Computer Engineering, Curtin University, Bentley, WA, Australia, Dec. 2012 – Nov. 2015.

3. Senior Lecturer, Department of Electrical and Computer Engineering, Curtin University, Bentley, WA, Australia, Aug. 2010 – Nov. 2012.

4. Lecturer, Department of Electrical and Computer Engineering, Curtin University, Bentley, WA, Australia, Dec. 2007 – Jul. 2010.

5. Post-Doctoral Research Scholar, Department of Electrical Engineering, University of California, Riverside, CA, USA (with Prof. Yingbo Hua), Feb. 2006 – Nov. 2007.

6. Research Associate, Institute of Telecommunications, Darmstadt University of Technology, Darmstadt, Germany (with Prof. Alex B. Gershman), Apr. 2005 – Jan. 2006.

7. Research Associate, Department of Communication Systems, University of Duisburg-Essen, Duisburg, Germany (with Prof. Alex B. Gershman), Dec. 2002 – Mar. 2005.

8. Research Assistant, Fraunhofer Institute of Microelectronic Circuits and Systems, Duisburg, Germany, Apr. 2001 – Oct. 2001.

ACADEMIC GRANTS

1. 2024 – 2025, Cooperative Research Centres Projects, AUD 1,745,362, "Ultrasound commercialization to deliver a novel product for cannulation".

2. 2023 – 2025, Defence Science Centre Collaborative Research Grants, AUD 150,000, "A reliable underwater messaging system",
Investigators: Iftekhar Ahmad, **Yue Rong**, Jiong Jin, Daryoush Habibi, Aodh Mchugh.

3. 2022 – 2024, Defence Science Centre Collaborative Research Grants, AUD 149,500, "Situational aware undersea acoustic diver communication system",
Investigators: **Yue Rong**, Alexander Duncan, Claudio Del Deo, Gregory Whitehouse, Douglas Chai, Peng Chen.

4. 2020 – 2023, Defence Science Technology Group, AUD 904,755, "Investigation into the feasibility of long-range underwater acoustic communications",
Investigators: Dr. Alexander Duncan, Prof. **Yue Rong**, Prof. Christine Erbe.

5. 2020 – 2021, Defence Science Centre Collaborative Research Grants, AUD 148,950, "High-speed multimodal underwater wireless communications",
Investigators: Prof. **Yue Rong**, Dr. Alexander Duncan, Prof. Sven Nordholm, A/Prof. Douglas Chai.

6. 2016 – 2019, The Ministry of Higher Education, Malaysia, Fundamental Research Grant Scheme, MYR 82,000, "Mathematical modelling of robust MIMO relay system for power line communication", Investigators: Dr. Lenin Gopal,
A/Prof. Tiong Sieh Kiong, A/Prof. Zhuquan Zang, Dr. Raymond Chiong, Prof. **Yue Rong**.

7. 2014 – 2016, ARC Discovery Project, AUD 300K, "New channel estimation, tracking and equalization algorithms for real-time high-speed underwater acoustic communication systems",
Chief Investigators: A/Prof. **Yue Rong**, Prof. Sven Nordholm, Dr. Alexander Duncan, A/Prof. Zhiqiang He.

8. 2011 – 2013, ARC Discovery Project, AUD 520K, "Increasing the range and rate of underwater acoustic communication systems using multi-hop relay",
Chief Investigators: Prof. Sven Nordholm, Dr. **Yue Rong**, Dr. Defeng Huang, Dr. Alexander Duncan.

9. 2011 – 2013, ARC Discovery Project, AUD 255K, "Blind separation of mutually correlated sources",
Chief Investigators: Dr. Yong Xiang, Dr. **Yue Rong**.

10. 2015, Curtin Teaching Excellence Development Fund, AUD 14,526, "Transforming the engineering laboratory experience through remote access anytime anywhere",
Investigators: A/Prof. **Yue Rong**, Dr. Sumedha Rajakaruna, Dr. Iain Murray.

11. 2008, Curtin Faculty of Science and Engineering Startup Grant.

ACADEMIC AWARDS

1. Nov. 2020, Defence and Research Teams Initiative Winner on the topic of "Diver Undersea Communication".

2. Nov. 2011, Best Paper Award, The Third International Conference on Wireless Communications and Signal Processing, Nanjing, China.

3. Dec. 2010, Young Researcher of the Year Award, Faculty of Science and Engineering, Curtin University.

4. Nov. 2010, Best Paper Award, The 16th Asia-Pacific Conference on Communications, Auckland, New Zealand.

5. 2008 – 2012, Journal Publication Award, Department of Electrical and Computer Engineering, Curtin University.

6. May 2005, Chinese Government Award for Outstanding Self-Financed Students Abroad, China.

ACADEMIC FELLOWSHIPS

1. 2001 – 2002, DAAD/ABB Graduate Sponsoring Asia Fellowship, Germany.

2. 1996 – 1998, Outstanding Students Fellowship of Shanghai Jiao Tong University, China.

INDUSTRIAL EXPERIENCE

Internship, Division of Application-Specific Integrated Circuit (ASIC) Design, Nokia Ltd., Bochum, Germany, Oct. 2001-Apr. 2002, VHDL simulations and test coverage analysis, and implementation of auxiliary tools for VHDL simulations (Tcl/Tk, Perl).

TEACHING EXPERIENCE

Digital Signal Processing (ETEN3000) (undergraduate course), Lecturer, Semester 1, 2019 – 2021, 2023 – 2024, Semester 2, 2015, Curtin University, Australia.

Digital Signal Analysis (ETEN6002) (postgraduate course), Lecturer, Semester 1, 2019 – 2021, 2023 – 2024, Curtin University, Australia.

Communications Engineering (303, COMT3000) (undergraduate course), Lecturer, Semester 2, 2018 – 2023, Semester 1, 2014, Curtin University, Australia.

Digital Communications Engineering (601, COMT6000) (postgraduate course), Lecturer, Semester 2, 2018 – 2023, Semester 1, 2014, Curtin University, Australia.

Electronic Fundamentals (ETEN2001) (undergraduate course), Lecturer, Semester 2, 2017, Curtin University, Australia.

Control Systems (ETEN3001, ETEN6000) (undergraduate and postgraduate courses), Lecturer, Semester 1, 2017, Curtin University, Australia.

Advanced Communications Engineering (COMT3001) (undergraduate course), Lecturer, Semester 2, 2015 – 2016, Curtin University, Australia.

Signal and Systems (202) (undergraduate course), Lecturer, Semester 2, 2008 – 2014, Curtin University, Australia.

Probability Theory (201) (undergraduate course), Lecturer, Semester 1, 2008 – 2012, Curtin University, Australia.

Stochastic Process for Telecommunication Systems (601) (postgraduate course), Lecturer, Semester 1, 2008 – 2010, 2013, Curtin University, Australia.

Communication Technology III: Signal and Information Theory (postgraduate course), Tutor, Summer Semester, 2005, Darmstadt University of Technology, Germany.

MATLAB for Communication Systems (undergraduate course), Lecturer, Winter Semester, 2002-2003, University of Duisburg-Essen, Germany.

HDR STUDENTS SUPERVISION

1. Milan Marocchi, 2024 –, "Multichannel deep learning-based classification algorithms for the detection of abnormal heart sounds".

2. Matthew Fynn, 2023 –, "Multichannel signal processing of phonocardiogram and electrocardiogram recordings for the detection of coronary artery disease using a classifier".

3. Sabna Hassan, 2020 –, "Underwater acoustic communication system design based on machine learning".

4. Sana Rehman, 2020 –, "Underwater optical wireless communication".

5. Nicholas Andronis, 2016 – 2019, "Reliable long-range and high ambient noise underwater communication," now Principal Engineer with L3Harris, Perth.

6. Xuan Khoa Nguyen, 2011 – 2017, "Transceiver optimization for interference MIMO relay communication systems," now Software Engineer with HealthEngine, Perth.

7. Xiaolin Wu, 2011 – 2015, "Reliable indoor power line communication systems: via application of advanced relaying processing," now Lecturer with Chongqing University of Posts and Telecommunications, China.

8. Raymond Chiong, 2011 – 2015, "Efficient channel estimation algorithms for cooperative MIMO wireless communication networks," now Associate Professor with Curtin University, Miri, Sarawak, Malaysia.

9. Apriana Toding, 2009 – 2014, "Improving the performance of MIMO relay networks using parallel relays," now Professor with Universitas Kristen Indonesia Paulus, Makassar, Indonesia.

10. Stephan Bettermann, 2009 – 2014, "A system for improving the quality of real-time services on the Internet," now Principal Systems Engineer with Cubic Transportation Systems, Perth.

11. Mumammad Ruhul Amin Khandaker, 2009 – 2012, "Signal processing algorithms for multiuser MIMO relay communication systems," now Assistant Professor with Heriot-Watt University, UK.

POSTDOCTORAL RESEARCH FELLOWS AND VISITING SCHOLARS

1. Dr. Peng Chen (Ph.D. Beijing University of Posts and Telecommunications), 2014 – 2017, "Underwater acoustic OFDM communication system", 2020 – 2023.

2. Prof. Zhiqiang He, Beijing University of Posts and Telecommunications, 2012, "High speed underwater acoustic communications".

VISITING STUDENTS

1. Jin Xie, Xidian University, 2019, "Neural network inspired communication system design".

2. Qiao Su, Nanjing University of Science and Technology, 2018, "Transceiver design for MIMO relay communication systems".

3. Adeline Cauvet, ENSTA Bretagne, 2015, "Implementation of a 2x1 MIMO communication with USRP devices".

4. Holger Degenhardt, Darmstadt University of Technology, 2012, "Non-regenerative multi-way relaying".

<u>RESEARCH</u>

My research interests are in signal processing for communications, wireless communications, underwater acoustic communications, wireless networks, applications of linear algebra and optimization methods, and statistical and array signal processing. Specific interests include cooperative MIMO communications, MIMO multiuser receivers, adaptive OFDM communications, wireless mesh networks, precoder design, communications with limited channel state feedback, robust adaptive beamforming, blind estimation techniques, and parallel factor analysis.

<u>PUBLICATIONS</u>

Book chapter: 2; Journal: 102 (86 IEEE); Conference: 104 (89 IEEE); h-index (Google Scholar, March 2024): 37.

<u>Areas of Research</u>

1. Cooperative Communications [B2], [J8], [J12], [J16], [J17], [J26], [J27], [J32], [J33], [J36], [J38], [J40], [J42], [J43], [J44], [J45], [J47], [J48], [J51], [J53], [J54], [J55], [J56], [J57], [J58], [J59], [J60], [J62], [J64], [J65], [J66], [J67], [J68], [J69], [J72], [J73], [J76], [J77], [J78], [J79], [J80], [J81], [J82], [J83], [J84], [J85], [J86], [J87], [J88], [J90], [J91], [J92], [C16], [C29], [C32], [C33], [C38], [C43], [C44], [C47], [C48], [C49], [C54], [C56], [C57], [C58], [C59], [C60], [C61], [C62], [C63], [C65], [C66], [C67], [C68], [C69], [C71], [C72], [C73], [C74], [C75], [C76], [C77], [C78], [C79], [C80], [C81], [C82], [C83].

2. Underwater Acoustic Communication [J11], [J21], [J23], [J34], [J37], [C1], [C2], [C3], [C5], [C6], [C7], [C9], [C10], [C13], [C14], [C18], [C20], [C21], [C22], [C23], [C24], [C27], [C28], [C30], [C34], [C35], [C36], [C50], [C51], [C52].

3. Underwater Optical Wireless Communication [J1], [C8], [C11].

4. Wireless Powered Communications [J7], [J9], [J5], [J14], [J18], [J22], [J25], [J28], [J30], [C12], [C25], [C26],

5. MIMO Communications [J39], [J52], [J63], [J98], [J100], [C39], [C46], [C53], [C90], [C91], [C94], [C98], [C101], [C102].

6. Multicarrier Communications [J97], [J99], [C93], [C95], [C96], [C97].

7. Wireless Networks [J20], [J71], [J89], [J93], [J94], [J95], [C37], [C45], [C84], [C85], [C87].

8. Array and Statistical Signal Processing [J31], [J96], [J101], [J102], [C86], [C88], [C89], [C92], [C99], [C100], [C103], [C104].

9. Powerline Communication [J3], [J13], [J29], [J35], [J49], [C15], [C17], [C19], [C40], [C41], [C42].

10. Watermarking [J41], [J46], [J61], [J75].

11. Blind Signal Separation [J50], [J70], [J74].

12. Dispersity Routing [C64], [C70].

13. Biomedical Engineering [B1], [J2], [J4], [J6], [C4].

14. Indoor Positioning [C55].

15. Chaos Communication [J19].

16. Engineering Education [C31].

17. Secure Communication [J15], [J24].

18. UAV Communication [J10].

Book Chapters

[B1] **Y. Rong**, M. Fynn, and S. Nordholm, "A pre-screening technique for coronary artery disease with multi-channel phonocardiography and electrocardiography," in *Non-Invasive Health Systems based on Advanced Biomedical Signal & Image Processing*, A. Al-Jumaily, P. Crippa, A. Mansour, and C. Turchetti, Eds. CRC Press: Taylor & Francis Group, 2024, ISBN 9781032386942.

[B2] **Y. Rong**, "MIMO Relay," in *Encyclopedia of Wireless Networks*, X. Shen, X. Lin, and K. Zhang, Eds. Cham, Switzerland: Springer, 2018.

Journal Papers Published

[J1] K. Y. Islam, I. Ahmad, **Y. Rong**, and D. Habibi, "Joint energy and security optimization in underwater wireless communication networks," *IEEE Internet of Things J.*, to appear, 2023.

[J2] M. Marocchi, L. Abbott, **Y. Rong**, S. Nordholm, and G. Dwivedi, "Abnormal heart sound classification and model interpretability: A transfer learning approach with deep learning," *MDPI Journal of Vascular Diseases*, vol. 2, no. 4, pp. 438-459, Dec. 2023.

[J3] A. Liong, L. Gopal, **Y. Rong**, F. Juwono, and C. W. R. Chiong, "Power optimization of a three-node two-way relay-assisted power-line communication system," *IEEE Trans. Power Delivery*, vol. 38, pp. 200-211, Feb. 2023.

[J4] Z. Xu, K. Niu, S. Tang, T. Song, **Y. Rong**, W. Guo, and Z. He, "Bone tumor necrosis rate detection in few-shot X-rays based on deep learning," *Computerized Medical Imaging and Graphics*, vol. 102, 102141, Dec. 2022.

[J5] J. L. Bing, **Y. Rong**, L. Gopal, and C. W. R. Chiong, "Robust transceiver design for SWIPT DF MIMO relay system with time switching protocol," *IEEE Systems Journal*, vol. 16, pp. 5651-5662, Dec. 2022.

[J6] M. Fynn, S. Nordholm, and **Y. Rong**, "Coherence function and adaptive noise cancellation performance of an acoustic sensor system for use in detecting coronary artery disease," *MDPI Sensors*, vol. 22, no. 6591, Sep. 2022.

[J7] J. L. Bing, **Y. Rong**, L. Gopal, and C. W. R. Chiong, "Mutual information maximization for SWIPT AF MIMO relay systems with non-linear EH models and imperfect channel state information," *IEEE Trans. Veh. Technol.*, vol. 71, pp. 8503-8518, Aug. 2022.

[J8] Q. Su and **Y. Rong**, "Transceiver design for two-hop AF MIMO relay systems with DFE receiver and direct link," *IEEE Trans. Commun.*, vol. 70, pp. 4134-4145, June 2022.

[J9] B. Li, M. Zhang, **Y. Rong**, and Z. Han, "Transceiver optimization for wireless powered time-division duplex MU-MIMO systems: Non-robust and robust designs," *IEEE Trans. Wireless Commun.*, vol. 21, pp. 4594-4607, June 2022.

[J10] B. Li, Q. Li, Y. Zeng, **Y. Rong**, and R. Zhang, "3D trajectory optimization for energy-efficient UAV communication: A control design perspective," *IEEE Trans. Wireless Commun.*, vol. 21, pp. 4579-4593, June 2022.

[J11] S. Barua, **Y. Rong**, S. Nordholm, and P. Chen, "Real-time adaptive modulation schemes for underwater acoustic OFDM communication," *MDPI Sensors*, vol. 22, no. 3436, Apr. 2022.

[J12] Y. Lv, Z. He, and **Y. Rong**, "Multiuser uplink MIMO communications assisted by multiple reconfigurable intelligent surfaces," *IEEE Commun. Letters*, vol. 25, pp. 3975-3979, Dec. 2021.

[J13] A. Liong, F. Juwono, L. Gopal, C. W. R. Chiong, and **Y. Rong**, "Multiple blanking preprocessors for impulsive noise mitigation in OFDM-based power-line communication systems," *Int. J. Electrical Power Energy Systems*, vol. 130, Sep. 2021.

[J14] S. Wang, Z. He, and **Y. Rong**, "Joint transceiver optimization for DF multicasting MIMO relay systems with wireless information and power transfer," *IEEE Trans. Commun.*, vol. 69, pp. 4953-4967, Jul. 2021.

[J15] B. Li, M. Zhang, **Y. Rong**, and Z. Han, "Artificial noise-aided secure relay communication with unknown channel knowledge of eavesdropper," *IEEE Trans. Wireless Commun.*, vol. 20, pp. 3168-3179, May 2021.

[J16] J. L. Bing, L. Gopal, **Y. Rong**, C. W. R. Chiong, and Z. Zang, "Robust transceiver design for multihop AF MIMO relay multicasting from multiple sources," *IEEE Trans. Veh. Technol.*, vol. 70, pp. 1565-1576, Feb. 2021.

[J17] Y. Lv, Z. He, and **Y. Rong**, "Two-way AF MIMO multi-relay system design using MMSE-DFE technique," *IEEE Trans. Wireless Commun.*, vol. 20, pp. 389-405, Jan. 2021.

[J18] J. L. Bing, **Y. Rong**, L. Gopal, and C. W. R. Chiong, "Transceiver design for SWIPT MIMO relay systems with hybridized power-time splitting-based relaying protocol," *IEEE Access*, vol. 8, pp. 190922-190933, Oct. 2020.

[J19] M. Miao, L. Wang, **Y. Rong**, and W. Xu, "A polarization MDCSK modulation over multipath Rayleigh fading channels," *IEEE Trans. Veh. Technol.*, vol. 69, pp. 6813-6817, Jun. 2020.

[J20] J. Xie, S. Liu, H. Dai, and **Y. Rong**, "Distributed semi-supervised learning algorithms for random vector functional-link networks with distributed data splitting across samples and features," *Knowledge-Based Systems*, vol. 195, 105577, May 2020.

[J21] S. Wang, Z. He, K. Niu, P. Chen, and **Y. Rong**, "New results on joint channel and impulsive noise estimation and tracking in underwater acoustic OFDM systems," *IEEE Trans. Wireless Commun.*, vol. 19, pp. 2601-2612, Apr. 2020.

[J22] B. Li, M. Zhang, H. Cao, **Y. Rong**, and Z. Han, "Transceiver design for AF MIMO relay systems with a power splitting based energy harvesting relay node," *IEEE Trans. Veh. Technol.*, vol. 69, pp. 2376-2388, Mar. 2020.

[J23] P. Chen, **Y. Rong**, S. Nordholm, and Z. He, "An underwater acoustic OFDM system based on NI CompactDAQ and LabVIEW," *IEEE Systems Journal*, vol. 13, pp. 3858-3868, Dec. 2019.

[J24] Y. Zhang, Y. Xiang, L. Y. Zhang, **Y. Rong**, and S. Guo, "Secure wireless communications based on compressive sensing: A survey," *IEEE Commun. Surveys Tutorials*, vol. 21, pp. 1093-1111, 2nd quarter, 2019.

[J25] B. Li, H. Cao, **Y. Rong**, T. Su, G. Yang, and Z. He, "Transceiver optimization for DF MIMO relay systems with a wireless powered relay node," *IEEE Access*, vol. 7, pp. 56904-56919, Apr. 2019.

[J26] Y. Lv, Z. He, and **Y. Rong**, "Multiuser multi-hop AF MIMO relay system design based on MMSE-DFE receiver," *IEEE Access*, vol. 7, pp. 42518-42535, Mar. 2019.

[J27] Q. Su and **Y. Rong**, "Two-hop AF MIMO relay system optimization with own information from the relay node," *IEEE Trans. Signal Process.*, vol. 67, pp. 930-945, Feb. 2019.

[J28] B. Li and **Y. Rong**, "Joint transceiver optimization for wireless information and energy transfer in nonregenerative MIMO relay systems," *IEEE Trans. Vehicular Technology*, vol. 67, pp. 8348-8362, Sep. 2018.

[J29] X. Wu, B. Zhu, and **Y. Rong**, "Channel model proposal for indoor relay-assisted power line communications," *IET Commun.*, vol. 12, pp. 1236-1244, Jun. 2018.

[J30] B. Li and **Y. Rong**, "AF MIMO relay systems with wireless powered relay node and direct link," *IEEE Trans. Commun.*, vol. 66, pp. 1508-1519, Apr. 2018.

[J31] B. Li, **Y. Rong**, J. Sun, and K. L. Teo, "A distributionally robust minimum variance beamformer design," *IEEE Signal Process. Lett.*, vol. 25, pp. 105-109, Jan. 2018.

[J32] Z. He, J. Yang, X. Wang, Y. Liu, and **Y. Rong**, "Channel estimation of MIMO relay systems with multiple relay nodes," *IEEE Access*, vol. 5, pp. 27649-27658, Dec. 2017.

[J33] J. Yang, Z. He, and **Y. Rong**, "Transceiver optimization for two-hop MIMO relay systems with direct link and MSE constraints," *IEEE Access*, vol. 5, pp. 24203-24213, Dec. 2017.

[J34] P. Chen, **Y. Rong**, S. Nordholm, and Z. He, "Joint channel and impulsive noise estimation in underwater acoustic OFDM systems," *IEEE Trans. Veh. Technol.*, vol. 66, pp. 10567-10571, Nov. 2017.

[J35] X. Wu, B. Zhu, Y. Wang, and **Y. Rong**, "Optimization for relay-assisted broadband power line communication systems with QoS requirements under time-varying channel conditions," *KSII Trans. Internet and Inf. Systems*, vol. 11, pp. 4865-4886, Oct. 2017.

[J36] L. Gopal, **Y. Rong**, and Z. Zang, "Robust MMSE transceiver design for nonregenerative multicasting MIMO relay systems," *IEEE Trans. Veh. Technol.*, vol. 66, pp. 8979-8989, Oct. 2017.

[J37] P. Chen, **Y. Rong**, S. Nordholm, Z. He, and A. Duncan, "Joint channel estimation and impulsive noise mitigation in underwater acoustic OFDM communication systems," *IEEE Trans. Wireless Commun.*, vol. 16, pp. 6165-6178, Sep. 2017.

[J38] Z. He, X. Huang, J. Zhong, and **Y. Rong**, "Transceiver design for interference MIMO relay systems with direct links," *IEEE Trans. Veh. Technol.*, vol. 66, pp. 4476-4481, May 2017.

[J39] B. Li, **Y. Rong**, J. Sun, and K. L. Teo, "A distributionally robust linear receiver design for multi-access space-time block coded MIMO systems," *IEEE Trans. Wireless Commun.*, vol. 16, pp. 464-474, Jan. 2017.

[J40] Z. He, J. Zhang, W. Liu, and **Y. Rong**, "New results on transceiver design for two-hop amplify-and-forward MIMO relay systems with direct link," *IEEE Trans. Signal Processing*, vol. 64, pp. 5232-5241, Oct. 2016.

[J41] T. Zong, Y. Xiang, S. Guo, and **Y. Rong**, "Rank-based image watermarking method with high embedding capacity and robustness," *IEEE Access*, vol. 4, pp. 1689-1699, May 2016.

[J42] Z. He, X. Zhang, Y. Bi, W. Jiang, and **Y. Rong**, "Optimal source and relay design for multiuser MIMO AF relay communication systems with direct links and imperfect channel information," *IEEE Trans. Wireless Commun.*, vol. 15, pp. 2025-2038, Mar. 2016.

[J43] C. W. R. Chiong, **Y. Rong**, and Y. Xiang, "Blind channel estimation and signal retrieving for MIMO relay systems," *Digital Signal Processing*, vol. 52, pp. 35-44, Mar. 2016.

[J44] K. X. Nguyen, **Y. Rong**, and S. Nordholm, "Simplified MMSE precoding design in interference two-way MIMO relay systems," *IEEE Signal Process. Lett.*, vol. 23, pp. 262-266, Feb. 2016.

[J45] C. W. R. Chiong, **Y. Rong**, and Y. Xiang, "Channel estimation for time-varying MIMO relay systems," *IEEE Trans. Wireless Commun.*, vol. 14, pp. 6752-6762, Dec. 2015.

[J46] Y. Xiang, I. Natgunanathan, **Y. Rong**, and S. Guo, "Spread spectrum based high embedding capacity watermarking method for audio signals," *IEEE Trans. Audio, Speech and Language Process.*, vol. 23, pp. 2228-2237, Dec. 2015.

[J47] K. X. Nguyen, **Y. Rong**, and S. Nordholm, "MMSE-based transceiver design algorithms for interference MIMO relay systems," *IEEE Trans. Wireless Commun.*, vol. 14, pp. 6414-6424, Nov. 2015.

[J48] L. Gopal, **Y. Rong**, and Z. Zang, "Tomlinson-Harashima precoding based transceiver design for MIMO relay systems with channel covariance information," *IEEE Trans. Wireless Commun.*, vol. 14, pp. 5513-5525, Oct. 2015.

[J49] X. Wu and **Y. Rong**, "Joint terminals and relay optimization for two-way power line information exchange systems with QoS constraints," *EURASIP Journal on Advances in Signal Processing*, 2015:84.

[J50] Z. Yang, Y. Xiang, **Y. Rong**, and K. Xie, "A convex geometry based blind source separation method for separating nonnegative sources," *IEEE Trans. Neural Networks Learning Syst.*, vol. 26, pp. 1635-1644, Aug. 2015.

[J51] W. Jiang, Z. He, X. Zhang, Y. Bi, and **Y. Rong**, "Joint transceiver design for amplify-and-forward multiuser MIMO relay communication systems with source-destination links," *Journal of Communications*, vol. 10, pp. 457-465, Jul. 2015.

[J52] A. C. Cirik, R. Wang, **Y. Rong**, and Y. Hua, "MSE based transceiver designs for full-duplex MIMO cognitive radios," *IEEE Trans. Commun.*, vol. 63, pp. 2056-2070, June 2015.

[J53] K. X. Nguyen, **Y. Rong**, and S. Nordholm, "MMSE-based joint source and relay optimization for interference MIMO relay systems," *EURASIP Journal on Wireless Commun. Network.*, 2015:73.

[J54] C. W. R. Chiong, **Y. Rong**, and Y. Xiang, "Channel estimation for two-way MIMO relay systems in frequency-selective fading environments," *IEEE Trans. Wireless Commun.*, vol. 14, pp. 399-409, Jan. 2015.

[J55] Z. He, W. Jiang, and **Y. Rong**, "Robust design for Amplify-and-Forward MIMO relay systems with direct link and imperfect channel information," *IEEE Trans. Wireless Commun.*, vol. 14, pp. 353-363, Jan. 2015.

[J56] Z. He, Z. Lang, **Y. Rong**, and S. Qu, "Joint transceiver optimization for two-way MIMO relay systems with MSE constraints," *IEEE Wireless Communications Letters*, vol. 3, pp. 613-616, Dec. 2014.

[J57] Z. He, S. Guo, Y. Ou, and **Y. Rong**, "Multiuser multihop MIMO relay system design based on mutual information maximization," *IEEE Trans. Signal Processing*, vol. 62, pp. 5725-5733, Nov. 2014.

[J58] A. C. Cirik, **Y. Rong**, Y. Ma, and Y. Hua, "On MAC-BC duality of multihop MIMO relay channel with imperfect channel knowledge," *IEEE Trans. Wireless Commun.*, vol. 13, pp. 5839-5854, Oct. 2014.

[J59] M. R. A. Khandaker and **Y. Rong**, "Transceiver optimization for multi-hop MIMO relay multicasting from multiple sources," *IEEE Trans. Wireless Commun.*, vol. 13, pp. 5162-5172, Sep. 2014.

[J60] A. Toding, M. R. A. Khandaker, and **Y. Rong**, "Joint source and relay design for MIMO multi-relay systems using projected gradient approach," *EURASIP Journal on Wireless Commun. Network.*, 2014:151.

[J61] I. Natgunanathan, Y. Xiang, **Y. Rong**, and D. Peng, "Robust patchwork-based watermarking method for stereo audio signals," *Multimedia Tools and Applications*, vol. 72, pp. 1387-1410, Sep. 2014.

[J62] **Y. Rong**, "Two-way compress-and-forward relaying with multiple MIMO relay nodes," *IEEE Communications Letters*, vol. 18, pp. 1387-1390, Aug. 2014.

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[C71] **Y. Rong**, "Two-way amplify-and-forward MIMO relay communications using linear MMSE receiver," in *Proc. 11th Australian Communications Theory Workshop (AusCTW)*, Melbourne, Australia, Jan. 31-Feb. 3, 2011, pp. 55-59.

[C72] **Y. Rong**, "Optimal multicarrier multi-hop non-regenerative MIMO relays with QoS constraints," in *Proc. 11th Australian Communications Theory Workshop (AusCTW)*, Melbourne, Australia, Jan. 31-Feb. 3, 2011, pp. 100-105.

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[C74] M. R. A. Khandaker and **Y. Rong**, "Dirty paper coding based optimal MIMO relay communications," in *Proc. 16th Asia-Pacific Conference on Communications (APCC)*, Auckland, New Zealand, Nov. 1-3, 2010, pp. 328-333. (**Best Paper Award**)

[C75] A. Toding, M. R. A. Khandaker, and **Y. Rong**, "Joint source and relay optimization for parallel MIMO relays using MMSE-DFE receiver," in *Proc. 16th Asia-Pacific Conference on Communications (APCC)*, Auckland, New Zealand, Nov. 1-3, 2010, pp. 12-16.

[C76] **Y. Rong**, "Non-regenerative multi-hop MIMO relays using MMSE-DFE technique," in *Proc. 53rd IEEE Global Telecommunications Conference (GLOBECOM)*, Miami, FL, USA, Dec. 6-10, 2010.

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[C78] A. Toding, M. R. A. Khandaker, and **Y. Rong**, "Optimal joint source and relay beamforming for parallel MIMO relay networks," in *Proc. 6th Int. Conf. Wireless Commun., Networking and Mobile Computing (WiCOM)*, Chengdu, China, Sep. 23-25, 2010.

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[C80] **Y. Rong**, "Robust design for linear non-regenerative MIMO relays," in *Proc. 10th Australian Communications Theory Workshop (AusCTW)*, Canberra, Australia, Feb. 2-5, 2010, pp. 87-92.

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[C82] **Y. Rong**, "Non-regenerative multicarrier MIMO relay communications based on minimization of mean-squared error," in *Proc. 45th IEEE Int. Conference on Communications (ICC)*, Dresden, Germany, Jun. 14-18, 2009.

[C83] **Y. Rong**, "MMSE-based non-regenerative multicarrier MIMO wireless relay communications with direct source-destination link," in *Proc. 45th IEEE Int. Conference on Communications (ICC)*, Dresden, Germany, Jun. 14-18, 2009.

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[C88] **Y. Rong**, Y. C. Eldar, and A. B. Gershman, "Performance tradeoffs among beamforming approaches," in *Proc. 4th IEEE Workshop on Sensor Array and Multichannel Signal Processing (SAM)*, Waltham, MA, USA, Jul. 12-14, 2006, pp. 26-30.

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[C91] **Y. Rong**, S. A. Vorobyov, and A. B. Gershman, "Robust linear receiver design for multi-access space-time block coded MIMO systems using stochastic optimization," in *Proc. 13th IEEE Workshop on Statistical Signal Processing (SSP)*, Bordeaux, France, Jul. 17-20, 2005, pp. 65-70.

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[C93] **Y. Rong**, S. A. Vorobyov, and A. B. Gershman, "Combining error-correction coding and cutoff rate maximization based precoding," in *Proc. Int. ITG/IEEE Workshop on Smart Antennas (WSA)*, Duisburg, Germany, Apr. 4-5, 2005.

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[C97] **Y. Rong**, S. A. Vorobyov, and A. B. Gershman, "Linear OFDM precoder design for multiuser wireless communications using cutoff rate optimization," in *Proc. 12th European Signal Processing Conference (EUSIPCO)*, Vienna, Austria, Sep. 6-10, 2004, pp. 2071-2074.

[C98] **Y. Rong**, S. A. Vorobyov, and A. B. Gershman, "A robust linear receiver for uplink multi-user MIMO systems based on probability-constrained optimization and second-order cone programming," in *Proc. 3rd IEEE Signal Array and Multichannel Signal Processing Workshop (SAM)*, Barcelona, Spain, Jul. 18-21, 2004, pp. 153-157.

[C99] S. A. Vorobyov, **Y. Rong**, N. D. Sidiropoulos, and A. B. Gershman, "Robust fitting of multilinear models with application to blind multiuser receivers: Iterative weighted median filtering approach," in *Proc. 5th IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Lisbon, Portugal, Jul. 11-14, 2004, pp. 478-482.

[C100] S. A. Vorobyov, **Y. Rong**, N. D. Sidiropoulos, and A. B. Gershman, "Robust iterative fitting of multilinear models based on linear programming," in *Proc. 29th IEEE Int. Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Montreal, QC, Canada, May 17-21, 2004, vol. 2, pp. 113-116.

[C101] **Y. Rong**, S. Shahbazpanahi, and A. B. Gershman, "Robust linear receivers for space-time block coded multiple-access MIMO wireless systems," in *Proc. 29th IEEE Int. Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Montreal, QC, Canada, May 17-21, 2004, vol. 2, pp. 9-12.

[C102] **Y. Rong**, S. A. Vorobyov, and A. B. Gershman, "A robust linear receiver for multi-access space-time block coded MIMO systems based on probability constrained optimization," in *Proc. 59th IEEE Vehicular Technology Conference (VTC)*, Milan, Italy, May 17-19, 2004, vol. 1, pp. 118-122.

[C103] **Y. Rong**, S. A. Vorobyov, A. B. Gershman, and N. D. Sidiropoulos, "Deterministic Cramér-Rao bound for symmetric PARAFAC model with application to blind spatial signature estimation," in *Proc. 3rd IEEE Int. Symposium on Signal Processing and Information Technology (ISSPIT)*, Darmstadt, Germany, Dec. 14-17, 2003, pp. 411-414.

[C104] **Y. Rong**, S. A. Vorobyov, A. B. Gershman, and N. D. Sidiropoulos, "Blind spatial signature estimation using time-varying user power loading and parallel factor analysis," in *Proc. 58th*

IEEE Vehicular Technology Conference (VTC), Orlando, FL, USA, Oct. 6-9, 2003, vol. 1, pp. 79-83.

Technical Reports

[R1] **Y. Rong** and P. Chen, "Situational aware undersea acoustic diver communication system: Report 1," Nov. 2023.

[R2] J. Yuan, A. Zhang, **Y. Rong**, and P. Chen, "OTFS waveform and high-level transceiver design," June, 2023.

[R3] **Y. Rong**, P. Chen, and A. Duncan, "Investigation into the feasibility of long-range underwater acoustic communications: Final report," Jun. 2023.

[R4] A. Duncan and **Y. Rong**, "Acoustic communications simulation design study," Mar. 2023.

[R5] A. Duncan and **Y. Rong**, "Investigation into the feasibility of long-range underwater acoustic communications: Trial report," Feb. 2023.

[R6] **Y. Rong**, P. Chen, J. Yuan, and A. Zhang, "Underwater acoustic channel modeling and simulation," Mar. 2022.

[R7] **Y. Rong**, P. Chen, and A. Duncan, "Investigation into the feasibility of long-range underwater acoustic communications: Milestone 4 report," Mar. 2022.

[R8] **Y. Rong**, A. Duncan, S. Nordholm, and D. Chai, "High-speed multimodal underwater wireless communications: Completion report," Mar. 2022.

[R9] **Y. Rong** and P. Chen, "DaRT workshop diver undersea communication: Project summary report," Nov. 2021.

[R10] A. Duncan, **Y. Rong**, and P. Chen, "Investigation into the feasibility of long-range underwater acoustic communications: Milestone 2 report," Mar. 2021.

[R11] **Y. Rong**, A. Duncan, S. Nordholm, and D. Chai, "High-speed multimodal underwater wireless communications: Report 1," Aug. 2020.

INVITED TALKS

1. Nov. 16, 2023, 6G Workshop, University of New South Wales, Sydney, Australia, "Underwater wireless communications: challenges to solve before 6G".

2. Dec. 18, 2021, 5th International Conference on Electrical Information and Communication Technology, KUET, Khulna, Bangladesh, "High-speed underwater acoustic communications – challenges and solutions".

3. May 7, 2021, AusCTW, "High-speed underwater acoustic communications – challenges and solutions".

4. May 22, 2019, Total Marine Technology, Bibra Lake, WA, Australia, "High-speed underwater acoustic communication".

5. Oct. 27, 2017, L3-Oceania, Fremantle, WA, Australia, "High-speed underwater acoustic communication".

6. Oct. 20, 2015, National Tsing Hua University, Hsinchu, Taiwan, "Transceiver optimization for amplify-and-forward MIMO relay systems".

7. Jul. 8, 2013, Beijing University of Posts and Telecommunications, Beijing, China, "Transceiver optimization for amplify-and-forward MIMO relay systems".

8. Dec. 16, 2011, South East University, Nanjing, China, "Source and relay matrix optimization for MIMO relay systems".

9. Nov. 22, 2011, Beijing Institute of Technology, Beijing, China, "Source and relay matrix optimization for MIMO relay systems".

10. Aug. 10, 2011, Engineers Australia, Perth, Australia, "Great expectations: Multiple-input multiple-output technique for wireless communications," *Joint Electrical Electronic Papers (JEEP)*.

11. July 20, 2009, University of Western Australia, "Signal processing for multiple-input multiple-output wireless communications," *IEEE Signal Processing Society Western Australia Chapter Seminar*.

PROFESSIONAL ACTIVITIES AND SERVICE

Memberships:

IEEE Student Member, 2003-2005, Member, 2006-2010, Senior Member, since 2011;

Member of IEEE Signal Processing Society, IEEE Communications Society.

Associate Member of IEEE Sensor Array and Multichannel (SAM) Technical Committee.

Secretary, IEEE Signal Processing Society Western Australia Chapter, 2009-2014.

Treasurer, IEEE Communications Society Western Australia Chapter, 2022.

Vice Chair, IEEE Communications Society Western Australia Chapter, 2024.

Editorships:

1. Senior Area Editor of IEEE Transactions on Signal Processing, 2020-2024 (Outstanding editorial board member award, 2022);

2. Associate Editor of IEEE Transactions on Signal Processing, 2014-2018;

3. Editor of IEEE Wireless Communications Letters, 2012-2014;

4. Guest Editor of IEEE Journal on Selected Areas in Communications, Special Issue on Theories and Methods for Advanced Wireless Relays, published in Aug. 2013 and Sep. 2012;

Memberships of Technical Program Committee

1. Workshop on Security & Protection of Information (SPI), Brest, France, 21-23 June 2021.

2. Co-Chair, Underwater Acoustic Signal Processing and Communications Symposium, International Conference on Wireless Communications and Signal Processing (WCSP), Hangzhou, China, Oct. 2018.

3. IEEE Global Conference on Signal and Information Processing (GlobalSIP), Anaheim, CA, USA, Nov. 2018;

4. European Signal Processing Conference (EUSIPCO), Kos, Greece, Sep. 2017;

5. IEEE International Conference on Communications (ICC), Sydney, Australia, June 2014, Kyoto, Japan, June 2011;

6. International Conference on Wireless Communications and Signal Processing (WCSP), Huangshan, China, Oct. 2012.

7. IEEE International Conference on Communications in China (ICCC), Beijing, China, Aug. 2012;

8. International Wireless Communications and Mobile Computing Conference (IWCMC), Honolulu, HI, USA, Aug. 2007;

9. International Conference in Communications and Networking in China (ChinaCom), Shanghai, China, Aug. 2007.

Conference Session Chair

1. MTS/IEEE OCEANS Conference, Limerick, Ireland, June 5-8, 2023.

2. International Symposium on Information Theory and Its Applications (ISITA), Melbourne, Australia, Oct. 2014.

3. 9th International Conference on Information, Communications and Signal Processing (ICICS), Tainan, Taiwan, Dec. 2013.

4. 23rd IEEE International Symposium Personal, Indoor and Mobile Radio Communications (PIMRC), Sydney, Australia, Sep. 2012.

Reviewer for Journals

1. IEEE Transactions on Signal Processing (highly appreciated reviewer 2006, 2007);

2. IEEE Signal Processing Magazine;

3. IEEE Transactions on Information Theory;

4. IEEE Transactions on Communications;

5. IEEE Journal on Selected Areas in Communications;

6. IEEE Transactions on Wireless Communications;

7. IEEE Transactions on Vehicular Technology;

8. IEEE Journal on Selected Topics in Signal Processing;

9. IEEE Systems Journal;

10. IEEE Signal Processing Letters;

11. IEEE Communications Letters;

12. IEEE Access;

13. IEE (IET) Electronics Letters;

14. Signal Processing;

15. Transactions on Emerging Telecommunications Technologies;

16. EURASIP Journal on Applied Signal Processing;

17. EURASIP Journal on Wireless Communications and Networking.

Reviewer for Conferences

1. Underwater Communications and Networking Conference (UComms), 2022;

2. IEEE International Conference on Communications (ICC), 2011, 2009, 2008;

3. IEEE Global Telecommunications Conference (GLOBECOM), 2017, 2009, 2007;

4. Military Communications Conference (MILCOM), 2010;

5. European Signal Processing Conference (EUSIPCO), 2012, 2010, 2009, 2008, 2007, 2006;

6. IEEE Wireless Communications & Networking Conference (WCNC), 2007;

7. IEEE Vehicular Technology Conference (VTC), Spring 2009, Fall 2008, Fall 2006, Spring 2006;

8. IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2005;

9. IEEE Workshop on Statistical Signal Processing (SSP) 2014;

10. IEEE Sensor Array and Multichannel Signal Processing Workshop (SAM) 2014;

11. International Conference on Information, Communications and Signal Processing (ICICS) 2013;

12. International Conference on Signal Processing and Communication Systems (ICSPCS) 2010, 2011;

13. International Symposium on Information Theory and Its Applications (ISITA) 2014;

14. Australian Communications Theory Workshop (AusCTW) 2010, 2011.

Others

1. External reviewer for the Australian Research Council.

2. External reviewer for the Natural Sciences and Engineering Research Council of Canada.

3. External PhD and Masters thesis examiner for The University of New South Wales, The University of Sydney, McGill University, Macquarie University, The University of Wollongong, Deakin University, Victoria University.

IEEE STYLE BIOGRAPHICAL SKETCH

Yue Rong (IEEE S'03 - IEEE M'06 - IEEE SM'11) was born in 1976 in Jiangsu, China. He received the B.E. degree from Shanghai Jiao Tong University, Shanghai, China, the M.Sc. degree from the University of Duisburg-Essen, Duisburg, Germany, and the Ph.D. degree (summa cum laude) from Darmstadt University of Technology, Darmstadt, Germany, all in Electrical Engineering, in 1999, 2002, and 2005, respectively.

From April 2001 to October 2001, he was a Research Assistant at the Fraunhofer Institute of Microelectronic Circuits and Systems, Duisburg, Germany. From October 2001 to March 2002, he was with Nokia Ltd., Bochum, Germany. From November 2002 to March 2005, he was a Research Associate at the Department of Communication Systems in the University of Duisburg-Essen. From April 2005 to January 2006, he was with the Institute of Telecommunications at Darmstadt University of Technology, as a Research Associate. From February 2006 to November 2007, he was a Postdoctoral Researcher with the Department of Electrical Engineering, University of California, Riverside. Since December 2007, he has been with Curtin University, Perth, Australia, where he is now a full Professor. His research interests include signal processing for communications, wireless communications, underwater acoustic communications, wireless networks, underwater optical wireless communications, applications of linear algebra and optimization methods, and statistical and array signal processing.

Dr. Rong received the Best Paper Award at the Third International Conference on Wireless Communications and Signal Processing, Nanjing, China, 2011, the Best Paper Award at the 16th Asia-Pacific Conference on Communications, Auckland, New Zealand, 2010, the 2010 Young Researcher of the Year Award of the Faculty of Science and Engineering at Curtin University, the 2004 Chinese Government Award for Outstanding Self-Financed Students Abroad (China), and the

2001-2002 DAAD/ABB Graduate Sponsoring Asia Fellowship (Germany). He has co-authored over 200 referred journal and conference papers. He is a Senior Area Editor of IEEE Transactions on Signal Processing, and served as an Editor of IEEE Transactions on Signal Processing, IEEE Wireless Communications Letters, a Guest Editor of the IEEE JSAC special issue on Theories and Methods for Advanced Wireless Relays, and has served as a TPC member for IEEE ICC, IEEE GlobalSIP, EUSIPCO, IEEE ICCC, WCSP, IWCMC, and ChinaCom.