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Academic Qualification:

Ph.D. in Communications Engineering, University of Oulu, Finland, 2018.

M.S. in Communications and Information Systems, Xiamen University, China, 2013.

B.S. in Communications Engineering, Harbin Institute of Technology, China, 2010.

Teaching Area

Artificial Intelligence

Advanced networking

Research Area

Wireless Communications

Radio localization

Artificial Intelligent and Machine Learning

Working Experience

Sep 2021 - Present Assistant Professor, International Institute for Next Generation Internet, Macau University of Science and Technology, Macau

Dec 2018 - Aug 2021 Postdoc, Centre for Wireless Communications, University of Oulu, Finland.

Sep 2013 - Feb 2015 Research Associate, State Key Laboratory of Terahertz and Millimeter Waves, City University of Hong Kong, China.

Academic Publication (selected)

- [1] **J. He**, H. Wymeersch, and M Juntti, "Channel Estimation for RIS-Aided mmWave MIMO Systems via Atomic Norm Minimization", *IEEE Transactions on Wireless Communications*, doi: 10.1109/TWC.2021.3070064, 2021.
- [2] **J. He**, H. Wymeersch, and M Juntti, "Leveraging Location Information for RIS-aided mmWave MIMO Communications", *IEEE Wireless Communications letters*, vol. 10, no. 7, pp. 1380-1384, July 2021.
- [3] S. Song, **J. He** and T. Matsumoto, "Rate-Distortion and Outage Probability Analyses of Wyner-Ziv Systems over Multiple Access Channels," *IEEE Transactions on Communications*, doi: 10.1109/TCOMM.2021.3087128.
- [4] H. Wymeersch, **J. He**, B. Denis, A. Clemente, and M Juntti, "Radio localization and mapping with reconfigurable intelligent surfaces", *IEEE Vehicular Technology Magazine*, vol. 15, no. 4, pp. 52-61, Dec. 2020
- [5] S. Song, C. Meng, **J. He**, X. Zhou, and T. Matsumoto, "Outage Probability of One Source with One Helper over Block Rayleigh Fading Multiple Access Channels", *IEEE Sensors Journal*, vol. 21, no. 2, pp. 2140-2148, 15 Jan.15, 2021.
- [6] A. Hu, and **J. He**, "Context Information Based Beam Learning for Initial Access in mmWave MIMO Cellular Networks", *IEEE Systems Journal*, doi: 10.1109/JSYST.2020.3027757, 2020
- [7] G. Wu, P. Yu, D. He, **J. He**, Y. Chen, Y. Xu, and S. Chan, "Deterministic Algorithms for Solving

- Boolean Polynomial Equations Based on Channel Coding Theory”, *IEEE Access*, vol. 8, pp. 26764-26772, 2020.
- [8] **J. He**, V. Tervo, X. Zhou, X. He, S. Qian, M. Juntti, and T. Matsumoto, “A Comprehensive Tutorial on Lossy Forwarding Cooperative Relaying”, *IEEE Communications Surveys Tutorials*, vol. 21, no. 1, pp. 66-87, Firstquarter 2019.
- [9] **J. He**, I. Hussain, Y. Li, M. Juntti, and T. Matsumoto, “Distributed LT Codes with Improved Error Floor Performance”, *IEEE Access*, vol. 7, pp. 8102-8110, 2019.
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- [12] G. Wu, Y. Lyu, and **J. He**, “Design of High-Rate LDPC Codes Based on Matroid Theory”, *IEEE Communications Letters*, vol. 23, no. 12, pp. 2146-2149, Dec. 2019.
- [13] **J. He**, V. Tervo, S. Qian, Q. Xue, M. Juntti, and T. Matsumoto, “Performance Analysis of Lossy Decode-and-Forward for Non-Orthogonal MARCs”, *IEEE Trans. Wireless Commun.*, vol. 17, no. 3, pp. 1545-1558, Mar. 2018
- [14] **J. He**, V. Tervo, S. Qian, M. Juntti, T. Matsumoto, “Performance Analysis of OSTBC Transmission in Lossy Forward MIMO Relay Networks”, *IEEE Commun. Lett.*, vol. 21, no. 8, pp. 1791-1794, Aug. 2017.
- [15] **J. He**, Y. Li, G. Wu, S. Qian, and T. Matsumoto, “Performance Improvement of Joint Source-Channel Coding with Unequal Power Allocation”, *IEEE Wireless Commun. Lett.*, vol. 6, no. 5, pp. 582-585, Oct. 2017.
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- [17] S. Qian, **J. He**, M. Juntti, T. Matsumoto, “Performance Analysis for Two-Way Lossy- Forward Relaying with Time-Varying Rician K-factor”, *IEICE Communications Express*, 2017.
- [18] S. Qian, X. Zhou, X. He, **J. He**, M. Juntti, T. Matsumoto, “Performance Analysis for Lossy-Forward Relaying over Nakagami-m Fading Channels”, *IEEE Trans. Veh. Technol.*, vol. 66, no. 11, pp. 10035-10043, Nov. 2017.
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- [21] **J. He**, H. Wymeersch, M. Juntti, “Channel Estimation for RIS-Aided mmWave MIMO Channels”, in *Proc. of IEEE Globecom*, Taipei, Dec 7-11, 2020.
- [22] **J. He**, L. Kong, T. Frondelius, O. Silven, M. Juntti, “Decision Triggered Data Transmission and Collection in Industrial Internet of Things”, in *Proc. of IEEE WCNC*, Seoul, South Korea, April 6-9, 2020.
- [23] **J. He**, H Wymeersch, T Sanguanpuak, O Silven, M Juntti, “Adaptive beamforming design for mmwave RIS-aided joint localization and communication”, in *Proc. of IEEE WCNC*, Seoul, South Korea, April 6-9, 2020.
- [24] **J. He**, H Wymeersch, L Kong, O Silven, M Juntti, “ Large intelligent surface for positioning in millimeter wave MIMO systems”, in *Proc. of IEEE VTC*, Antwerp, Belgium, May 25-28, 2020.
- [25] **J. He**, I. Hussain, M. Juntti, T. Matsumoto, “End-to-End Outage Probability Analysis for Multi-Source Multi-Relay Systems”, in *Proc. of IEEE ICC*, Kuala Lumpur, Malaysia, May 23-27, 2016.
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Gaussian MACs”, in Proc. of IEEE ICC, Kuala Lumpur, Malaysia, May 23-27, 2016.

- [1] **J. He**, T. Kim, H. Ghach, K. Liu, G. Wang, “Millimeter Wave MIMO Channel Tracking Systems,” in proc. Of IEEE Globecom, Austin, USA, 2014.

Authorized Patents

- [1] Rong Wen, Kunpeng Liu, **Jiguang He**, Taejoon Kim, “Beam Tracking Method, Apparatus, and System”, US Patent no. 10320457

Professional Society Membership

Member of IEEE, TPC for VTC, WCNC, etc