Ruibo Wang

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Education

King Abdullah University of Science and Technology (KAUST) **June 2022 – Now**
Advisor: Prof. Mohamed-Slim Alouini Ph.D. of Electrical Engineering

King Abdullah University of Science and Technology (KAUST) **Jan. 2021 – June 2022**
GPA: 4.00/4.00 Advisor: Prof. Mohamed-Slim Alouini Master of Electrical Engineering
Thesis: Stochastic Geometry-Based Spherical Routing in Massive LEO Satellite Constellations

University of Electronic Science and Technology of China (UESTC) **Sep. 2016 – June 2020**
GPA: 3.94/4.00 985 & 211 University Subject ranking A^+ Bachelor of Communication Engineering

Journal (First Author)

- 1: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Ultra-dense LEO satellite-based communication systems: A novel modeling technique." IEEE Communications Magazine 60.4 (2022): 25-31.
- 2: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Low Latency Routing in Massive LEO Satellite Networks." IEEE Transactions on Aerospace and Electronic Systems 58, no. 5 (2022): 3881-3894.
- 3: **Ruibo Wang** , Mustafa A. Kishk, and Mohamed-Slim Alouini. "Evaluating the Accuracy of Stochastic Geometry Based Models for LEO Satellite Networks Analysis." IEEE Communications Letters 26, no. 10 (2022): 2440-2444.
- 4: **Ruibo Wang**, Anna Talgat, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Conditional Contact Angle Distribution in LEO Satellite-Relayed Transmission." IEEE Communications Letters 26, no. 11 (2022): 2735-2739.
- 5: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Resident Population Density-inspired Deployment of K-tier Aerial Cellular Network." Accepted by IEEE Transactions on Wireless Communications.
- 6: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Reliability Analysis of Multi-hop Routing in Multi-tier LEO Satellite Networks." Accepted by IEEE Transactions on Wireless Communications.
- 7: **Ruibo Wang**, Zhengying Lou, Lijie Hu, Di Wang, and Mohamed-Slim Alouini. "How Stochastic Geometry and Machine Learning Coexist in Wireless Networks: Collaboration or Competition?" Submitted to IEEE Wireless Communications.
- 8: **Ruibo Wang**, Washim Uddin Mondal, Mustafa A. Kishk, Vaneet Aggarwal, and Mohamed-Slim Alouini. "Terrain-based Coverage Manifold Estimation: Machine Learning, Stochastic Geometry, or Simulation?" Accepted by IEEE Open Journal of the Communications Society.
- 9: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Ultra Reliable Low Latency Routing in LEO Satellite Constellation: A Stochastic Geometry Approach." Submitted to IEEE Journal on Selected Areas in Communications, major revision.
- 10: **Ruibo Wang**, Baha Eddine Youcef Belmekki, Howard H. Yang, and Mohamed-Slim Alouini. "Non-Terrestrial Network Models Using Stochastic Geometry: Planar or Spherical?" Submitted to IEEE Wireless Communications Letters.
- 11: **Ruibo Wang**, Mustafa A. Kishk, Howard H. Yang, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Analysis of Inter-Satellite Routing and Satellite-Terrestrial Routing." Submitted to IEEE Transactions on Wireless Communications.
- 12: **Ruibo Wang**, Mustafa A. Kishk, Howard H. Yang, and Mohamed-Slim Alouini. "Orbit Geometry Model-Based Time-Relevant LEO Satellite Network Coverage Analysis." In progress.

Journal (Second Author)

- 1: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Terrain-Based UAV Deployment: Providing Coverage for Outdoor Users." Accepted by IEEE Transactions on Vehicular Technology.
- 2: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Exploring Terrain-Based UAV Networking: From Terrain Information Completeness Perspective." Submitted to IEEE Open Journal of Vehicular Technology.

- 3: Zhangzhi Zhao, Zhengying Lou, **Ruibo Wang**, Qingyao Li, and Xing Xu. "I-WKNN: Fast-Speed and High-Accuracy WiFi Positioning for Intelligent Sports Stadiums." Computers & Electrical Engineering 98 (2022): 107619 (Student Second Author).
- 4: Ziyuan Shi, **Ruibo Wang**, and Mohamed-Slim Alouini. "A Novel Markov Detection Model-Based Analytical Framework for High Speed PPM-PCD Systems." In progress.
- 5: Xue Zhang, **Ruibo Wang**, Baha Eddine Youcef Belmekki, and Mohamed-Slim Alouini. "Network Level Analysis of Integrated Sensing and Communication Based on Stochastic Geometry." Submitted to IEEE Internet of Things Magazine.
- 6: Anna Talgat, **Ruibo Wang**, Mustafa A. Kishk and Mohamed-Slim Alouini. "Physical Layer Security of Direct Uplink Multitier LEO Satellite-based IoT" In progress.
- 7: Zhengying Lou, **Ruibo Wang**, and Mohamed-Slim Alouini. "Towards Biosensor Enabled Human Healthcare Monitoring: State-of-the-art, Performance, Future, and Challenge." In progress.
- 8: Jiusi Zhou, Ruibo Wang, Basem Shihada, and Mohamed-Slim Alouini. "End-to-End Uplink Performance Analysis of Satellite-based IoT Networks: A Stochastic Geometry Approach." In progress.

Conference

- 1: Full paper: **Ruibo Wang**, Xue Zhang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Localizability Analysis in LEO Satellite Constellations." Submitted to IEEE International Conference on Communications (ICC).
- 2: Full paper: Xue Zhang, **Ruibo Wang**, Bodong Shang, and Mohamed-Slim Alouini. "Secure ISAC With Active RIS for LEO Satellite Systems." Submitted to IEEE ICC.
- 3: Full paper: Jiusi Zhou, **Ruibo Wang**, Basem Shihada, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Uplink Performance for Analysis Satellite-Enabled IoT Netowrk", in Progress.
- 4: Poster: The European Conference on Networks and Communications (EuCNC) | 7-10 June 2022 | Grenoble, France
  Ruibo Wang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Low Latency Routing in Massive LEO Satellite Networks."
- 5: Oral: IEEE INGR Workshop: Advanced Solutions for 6G Satellite Systems | 19-21 July 2022 | Virtual
  Ruibo Wang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Reliability Analysis of Multi-hop Routing in Multi-tier LEO Satellite Networks."
- 6: Poster: IEEE Communication Theory Workshop (CTW) | 2-5 Oct. 2022 | Marbella, Spain
  Ruibo Wang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Resident Population Density-inspired Deployment of K-tier Aerial Cellular Network."
- 7: Oral: Wireless World Research Forum (WWRF) Meeting 49 | 28-30 Mar. 2023 | Poznan, Poland
  Ruibo Wang, Zhengying Lou, Mustafa A. Kishk, Baha Eddine Youcef Belmekki, and Mohamed-Slim Alouini. "Evaluating the Accuracy of Stochastic Geometry Models for Wireless Communication Networks."
- 8: Poster: 6G Summit on Connecting the Unconnected | 30 Jan. - 1 Feb. 2023 | Jeddah, Saudi Arabia
  Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Terrain-Based UAV Deployment: Providing Coverage for Outdoor Users."
- 9: Oral: IEEE Special Interest Group (SIG) on Satellite Mega-Constellations | 10-12 May 2022 | Virtual
  Mustafa A. Kishk, **Ruibo Wang**, and Mohamed-Slim Alouini. "Ultra-dense LEO satellite-based communication systems: A novel modeling technique."

Other Research Achievements

- 1: Chapter of Book "Fundamentals of 6G Communications and Networking": Maurilio Matracia, Aniq Ur Rahman, **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Bridging the Digital Divide."
- 2: US Patent: "Terrain-Based UAV Deployment Methods for Coverage Enhancement", Inventor Contribution 20%.

Award

- 1: KAUST Dean's List Award Aug. 2023

Work Experience

- 1: Internship in China Telecom, network operation department — July 2018 - Aug. 2018
- 2: Research assistant in Future Network of Intelligence Institute, CUHKSZ — Oct. 2019 - June 2020
- 3: Research assistant in Center for Future Media, UESTC — June 2020 - Oct. 2020
- 4: Research assistant in Communication Theory Lab, KAUST — Oct. 2020 - Jan. 2021
- 5: Teaching assistant of UESTC & KAUST summer course — June 2022,2023 - July 2022,2023
- 6: Travelling scholar of KAUST/ Zhejiang University (ZJU) — April 2023 - July 2023

Peer Review (Selected)

- IEEE Transactions on Wireless Communications
- IEEE Internet of Things Journal
- IEEE Transactions on Communications
- IEEE Network Magazine
- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Network Science and Engineering
- IEEE Transactions on Intelligent Vehicles
- IEEE Wireless Communications Letters
- IEEE Open Journal of Vehicular Technology
- IEEE International Conference on Communications (ICC)
- IEEE Wireless Communications and Networking Conference (WCNC)
- IEEE Global Communications Conference (GLOBECOM)
- IEEE Military Communications Conference (MILCOM)

Collaborator

- 1: Mustafa A. Kishk, Assistant Professor, Maynooth University
- 2: Baha Eddine Youcef Belmekki, Postdoctoral Fellow, KAUST
- 3: Howard Hao Yang, Assistant Professor, Zhejiang University
- 4: Bodong Shang, Assistant Professor, Eastern Institute for Advanced Study
- 5: Di Wang, Assistant Professor, KAUST
- 6: Vaneet Aggarwal, Associate Professor, Purdue University
- 7: Basem Shihada, Professor, KAUST