Ruibo Wang

Communication Theory Lab, KAUST, Thuwal 23955 (966)56-575-2152 ruibo.wang@kaust.edu.sa

Education

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

King Abdullah University of Science and Technology (KAUST) **Jan. 2021 – May. 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, Mustafa A. Kishk, Baha Eddine Youcef Belmekki, and Mohamed-Slim Alouini. "Terrain-Based Outdoor UAV Positioning: Tractable Models and Information Processing Methods." Submitted to IEEE Vehicular Technology Magazine.
- 8: **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 Communications Magazine.
- 9: **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?" Submitted to IEEE Transactions on Communications.
- 10: **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.
- 11: **Ruibo Wang**, Mustafa A. Kishk, Howard H. Yang, and Mohamed-Slim Alouini. "Performance Evaluation of LEO Satellite Communication Configurations: A Stochastic Geometry Approach." In progress.
- 12: **Ruibo Wang**, Zhengying Lou, Baha Eddine Youcef Belmekki, 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." Submitted to IEEE Transactions on Vehicular Technology.
- 2: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Towards Biosensor Enabled Human Healthcare Monitoring: State-of-the-art, Performance, Future, and Challenge." In progress.
- 3: Xue Zhang, **Ruibo Wang**, Baha Eddine Youcef Belmekki, and Mohamed-Slim Alouini. "Integrated Sensing and Communications in Massive Networks: A Novel Modeling and Analysis Technique." In progress.
- 6: Xue Zhang, **Ruibo Wang**, Bodong Shang, and Mohamed-Slim Alouini. "Resident Population Density-Inspired UAV Deployment in ISAC Network." In progress.
- 5: 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).

Other Research Achievements

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

Conference

- 1: **Ruibo Wang**, Xue Zhang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "RSS-Based Performance Analysis of Satellite Localization: A Spherical Stochastic Geometry Perspective." In progress.
- 2: 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."
- 3: 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."
- 4: 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."
- 5: 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."
- 6: 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."
- 7: 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."

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 - July 2023
- 6: Travelling scholar of KAUST/ Zhejiang University (ZJU) — April 2023 - July 2023

Peer Review

- IEEE Transactions on Wireless Communications
- IEEE Transactions on Communications
- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Transactions on Vehicular Technology
- IEEE Network Magazine
- IEEE Wireless Communications Letters
- IEEE Global Communications Conference (GLOBECOM)
- IEEE Military Communications Conference (MILCOM)
- ITU Journal on Future and Evolving Technologies (ITU J-FET)
- IEEE Workshop on Spatial Stochastic Models for Wireless Networks (SpaSWiN)
- IEEE World Forum on Internet of Things (WFIoT)

Collaborator

- 1: Mustafa A. Kishk, Assistant Professor, Maynooth University
- 2: Howard Hao Yang, Assistant Professor, Zhejiang University
- 3: Di Wang, Assistant Professor, KAUST
- 4: Vaneet Aggarwal, Associate Professor, Purdue University