Ruibo Wang

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Education

King Abdullah University of Science and Technology (KAUST) **2022 – 2024**
Advisor: Prof. Mohamed-Slim Alouini Ph.D. of Electrical Engineering
Thesis: Spherical Stochastic Geometry-Based NTN Analysis: Modeling, Analysis, and Advanced Topics

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

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

Journal - First Author (Not Include Joint First Author)

- 1: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Ultra-dense LEO satellite-based communication systems: A novel modeling technique." in IEEE Communications Magazine, vol. 60, no. 4, pp. 25-31, April 2022, doi: 10.1109/MCOM.001.2100800.
- 2: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Stochastic Geometry-Based Low Latency Routing in Massive LEO Satellite Networks." in IEEE Transactions on Aerospace and Electronic Systems, vol. 58, no. 5, pp. 3881-3894, Oct. 2022.
- 3: **Ruibo Wang** , Mustafa A. Kishk, and Mohamed-Slim Alouini. "Evaluating the Accuracy of Stochastic Geometry Based Models for LEO Satellite Networks Analysis." in IEEE Communications Letters, vol. 26, no. 10, pp. 2440-2444, Oct. 2022, doi: 10.1109/LCOMM.2022.3194210.
- 4: **Ruibo Wang**, Anna Talgat, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Conditional Contact Angle Distribution in LEO Satellite-Relayed Transmission." in IEEE Communications Letters, vol. 26, no. 11, pp. 2735-2739, Nov. 2022, doi: 10.1109/LCOMM.2022.3196152.
- 5: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Resident Population Density-inspired Deployment of K-tier Aerial Cellular Network." in IEEE Transactions on Wireless Communications, vol. 22, no. 11, pp. 7989-8002, Nov. 2023, doi: 10.1109/TWC.2023.3257222.
- 6: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Reliability Analysis of Multi-hop Routing in Multi-tier LEO Satellite Networks." in IEEE Transactions on Wireless Communications, vol. 23, no. 3, pp. 1959-1973, March 2024, doi: 10.1109/TWC.2023.3293467.
- 7: **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?" in IEEE Open Journal of the Communications Society, vol. 5, pp. 633-648, December 2023, doi: 10.1109/OJCOMS.2023.3340222.
- 8: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Ultra Reliable Low Latency Routing in LEO Satellite Constellation: A Stochastic Geometry Approach." in IEEE Journal on Selected Areas in Communications, vol. 42, no. 5, pp. 1231-1245, May 2024, doi: 10.1109/JSAC.2024.3365884.
- 9: **Ruibo Wang**, Baha Eddine Youcef Belmekki, Xue Zhang, and Mohamed-Slim Alouini. "Network Level Analysis of Integrated Sensing and Communication Based on Stochastic Geometry." in IEEE Internet of Things Magazine, vol. 7, no. 4, pp. 84-90, July 2024, doi: 0.1109/IOTM.001.2300202.
- 10: **Ruibo Wang**, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Modeling and Analysis of Non-Terrestrial Networks Using Spherical Stochastic Geometry: A Survey." Submitted to IEEE Communications Surveys and Tutorials, Major Revision.
- 11: **Ruibo Wang**, Mustafa A. Kishk, Howard H. Yang, and Mohamed-Slim Alouini. "Localizability Analysis for Hybrid LEO/MEO Mega Satellite Networks: A Stochastic Geometry Approach." Submitted to IEEE Transactions on Aerospace and Electronic Systems, Major Revision.
- 12: **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 Aerospace and Electronic Systems, major revision.
- 13: **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 Transactions on Aerospace and Electronic Systems.

Journal - Corresponding Author (Second Author)

- 1: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Exploring UAV Networking from the Terrain Information Completeness Perspective: A Tutorial." in IEEE Open Journal of Vehicular Technology, vol. 5, pp. 620-631, April 2024, doi: 10.1109/OJVT.2024.3386064.
- 2: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, Mustafa A. Kishk, and Mohamed-Slim Alouini. "Terrain-Based UAV Deployment: Providing Coverage for Outdoor Users." in IEEE Transactions on Vehicular Technology, vol. 73, no. 6, pp. 8988-9002, February 2024, doi: 10.1109/TVT.2024.3362845.
- 3: 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 IEEE Open Journal of the Communications Society, vol. 5, pp. 4036-4045, 2024, doi: 10.1109/OJCOMS.2024.3422110.
- 4: Anna Talgat, **Ruibo Wang**, Mustafa A. Kishk and Mohamed-Slim Alouini. "Enhancing Physical Layer Security in LEO Satellite-Enabled IoT Network Communications." in IEEE Internet of Things Journal, August 2024, vol. 11, pp. 33967-33979, 2024, doi: 10.1109/JIOT.2024.343662.
- 6: Ferdaous Tarhouni, **Ruibo Wang**, and Mohamed-Slim Alouini. "Free Space Optical Mesh Networks: A Survey." in IEEE Open Journal of the Communications Society, vol. 6, pp. 642-655, 2025, doi: 10.1109/OJCOMS.2025.3525468.
- 6: Zhengying Lou, **Ruibo Wang**, Baha Eddine Youcef Belmekki, and Mohamed-Slim Alouini. "Towards Biosensor Enabled Human Healthcare Monitoring: State-of-the-art, Performance, Future, and Challenge." Submitted to Nature Reviews on Electrical Engineering.

Other Research Achievements

- 1: Sec. V of the annual report - IEEE INGR Satellite Roadmap: "satellite network management and new parts on routing." (Latest Version)
- 2: 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."
- 3: US Patent: "Terrain-Based UAV Deployment Methods for Coverage Enhancement", Inventor Contribution 20%.
- 4: Zhangzhi Zhao, Zhengying Lou, **Ruibo Wang**, Qingyao Li, and Xing Xu. "I-WKNN: Fast-Speed and High-Accuracy WiFi Positioning for Intelligent Sports Stadiums." in Computers & Electrical Engineering, vol. 98, pp. 107619, 2022, doi: 10.1016/j.compeleceng.2021.107619.

Award

- 1: 1st in IEEE Future Networks - 6G and NTN: Challenges and Solutions Contest (Slides) Dec. 2023
- 2: Exemplary Reviewer of the IEEE Wireless Communications Letters 2023
- 3: KAUST Dean's List Award 2023,2024

Conference

- 1: Full Paper: AAAI 2025 Workshop (AI4WCN) | 4 March | Philadelphia, USA
  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?".
- 2: Full Paper: IEEE Future Networks Tech Focus | 20 Dec. 2023 | Virtual
  Ruibo Wang, Mustafa A. Kishk, and Mohamed-Slim Alouini. "LEO Satellite Routing Under Stochastic Geometry Framework."
- 3: Full Paper: IEEE International Conference on Communications (ICC) | 9–13 June 2024 | Denver, CO, USA
  Xue Zhang, **Ruibo Wang**, Bodong Shang, and Mohamed-Slim Alouini. "Secure ISAC With Active RIS for LEO Satellite Systems." pp. 1182-1188, doi: 10.1109/ICC51166.2024.10622473.
- 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." (Poster)
- 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
  Ruibo Wang, Mustafa A. Kishk, 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: Visiting student in Communication Theory Lab, KAUST — Oct. 2020 - Jan. 2021
- 5: Teaching assistant of UESTC & KAUST summer course — 2022, 2023
- 6: Traveling scholar of KAUST & Zhejiang University (ZJU) — April 2023 - July 2023

Peer Review

- IEEE Journal on Selected Areas in Communications
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Communications
- Reliability Engineering & System Safety
- IEEE Transactions on Mobile Computing
- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Communications Magazine
- IEEE Network Magazine
- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Network Science and Engineering
- IEEE Internet of Things Journal
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transactions on Intelligent Vehicles
- IEEE Transactions on Services Computing
- IEEE Signal Processing Letters
- IEEE Wireless Communications Letters
- IEEE Communications Letters
- IEEE Networking Letters
- IEEE Open Journal of Vehicular Technology
- IEEE Open Journal of the Communications Society
- IEEE Access
- AAAI Conference on Artificial Intelligence
- IEEE International Conference on Communications (ICC)
- IEEE Wireless Communications and Networking Conference (WCNC)
- IEEE Global Communications Conference (GLOBECOM)
- IEEE Military Communications Conference (MILCOM)
- IEEE Vehicular Technology Conference (VTC)

Technical Program Committee

- IEEE World Forum on Internet of Things (WFIoT)
- IEEE Workshop on Spatial Stochastic Models for Wireless Networks (WiOpt)