

Mingjun Ying

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EDUCATION

Chongqing University of Posts and Telecommunications

Chongqing, China

Communication Engineering

Sept. 2019 - Jun. 2023

Rank in college: 1/243

GPA: 3.75/4.00

Fluent in English: IELTS 7.0

Technical Skills: MATLAB; Python; C; Html5; SPSS; Altium Designer; VISIO; LaTeX; Power Bi;

RESEARCH EXPERIENCE

A Review on Consumption Factor Theory

NYU WIRELESS

Supervisor: Prof. Theodore S. Rappaport (IEEE Fellow), NYU

Jan. 2023 - Feb. 2023

Project: This research aims to provide a brief overview of recent results in this field. The CF theory for cascaded communication systems is studied. Furthermore, we study the CF theory for future mmWave and sub-THz systems, which demonstrates great feasibility for future wireless communication systems.

Massive MIMO, mmWave MIMO, Spatial Modulation

IIT Kanpur

Supervisor: Prof. Aditya K. Jagannatham (Qualcomm Innovation Fellow)

Dec. 2022

- This is a unique cutting-edge project that feature exhaustive lecture modules and several PYTHON/ MATLAB projects-studies on the latest MIMO, Massive MIMO, mmWave MIMO, NOMA, Cooperative, OFDM, and FBMC technologies for future wireless communication.

Frequency Allocation for Cellular Networks

University College London

Supervisor: Prof. Kai-Kit Wong (IEEE Fellow), UCL

Jul. 2021 - Aug. 2021

Project: Research into theoretical and practical aspects of wireless communication systems with an emphasis on frequency and power allocation problems and intensely relevant to contemporary wireless network technologies.

- Considered different frequency reuse schemes and various power allocation combinations;
- A near-optimal FLWF method was developed to decrease computing complexity;
- The proposed SOWF algorithm obtains 29% higher capacity than the traditional SWF in sFFR.

Undergraduate Research Training Program

Chongqing, China

Supervisor: Prof. Yongjun Xu (IEEE Senior Member), CQUPT

Apr. 2021 - Apr. 2022

Project: Mainly focused on RIS-Enhanced communication and the algorithms for energy-efficient resource allocation problems.

- Proposed a joint radio resource and passive beamforming optimization scheme for a downlink RIS-assisted wireless powered communication network with a harvest-then-transmit protocol to improve the energy efficiency (EE) of the system;
- Jointly optimized the active beamforming of the PS and the passive beamforming of the RIS;
- Converted the original problem into a subtractive form via Dinkelabch's method and then decomposed the problem into two subproblems that could be solved individually.

Analysis of Signals and Communication Systems

Nanyang Technological University

Supervisor: Prof. Kah-Chan Teh (IEEE Senior Member), NTU

Jan. 2021 - Feb. 2021

Project: Completed a task of the response of three paths wireless channels and the final report about "Analysis of Signals and Communication Systems" and won the only **Best Presenting Team**.

- Fully participated in the program, demonstrating excellent competencies.
- Presented in a group presentation applying valuable ideas and insights on the future of innovation and using the key concepts learned in the program.

PUBLICATIONS

Conference Papers

- **Mingjun Ying** and Shuyu Wang. "Self-Optimizing Water-Filling Power Allocation: A Hybrid Fractional Frequency Reuse Way." *The 13th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP)*. IEEE, 2022: 208-213.
- **Mingjun Ying** and Shuyu Wang. "Capacity Analysis and Hybrid Power Allocation for Multi-cell Networks." *The 11th International Conference on Communications, Circuits and Systems (ICCCAS)*. IEEE, 2022: 192-197.
- **Mingjun Ying**, Jinpu Zhang, and Yongkang Qin. "Simulation and analysis of fractional frequency reuse power allocation for a 24-cell network." *International Conference on Signal Processing and Communication Technology (SPCT 2021)*. SPIE, 2022, 12178: 590-604.
- Yuhao Lian, **Mingjun Ying**, Shuyu. Wang, Yuhua Wang. "An Efficient Fast Walsh-Hadamard Transform Based OFDM-IM Scheme with Lower PAPR." *Wireless Telecommunications Symposium 2023(WTS)* (Accepted).
- Yuhao Lian, **Mingjun Ying**, Shuyu. Wang, Yuhua Wang. " An Efficient Maximum Subcarrier Power Detection Scheme for OFDM-IM Systems." *The International Wireless Communications and Mobile Computing Conference* (Under Review).

Patents

- Yongjun Xu, **Mingjun Ying**, Qianbin Chen. "A Robust Energy Efficiency Optimization method for RIS-Assisted WPCNs." *Chinese patent*, CN113613273A, 2021-11-05.
- Yongjun Xu, **Mingjun Ying**, Jihua Zhou. "A Robust Recourses Allocation Algorithm for RIS-Enhanced WPCNs." *Chinese patent*, CN113825159A, 2021-12-21.

CONFERENCE PRESENTATIONS

- The 11th International Conference on Communications, Circuits and Systems (ICCCAS), Singapore, May 2022, **Oral Presentation**.
- The 13th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), Porto Portugal, July 2022, **Oral Presentation**.

HONORS AND AWARDS

- National Scholarship (Awarded by Ministry of Education of the People's Republic of China);
- First-Class Scholarship of Chongqing University of Posts and Telecomm. (Top 1%);
- First Prize of the National English Translation Competition for College Students (Top 1%);
- First Prize of the Antenna System Design Competition of CQUPT (Top 1%);
- Advanced Individuals with Innovative Ability in Chongqing (Top 2%);
- Second Prize of the National College English Writing Competition (Top 2%);
- Second Prize of the China Undergraduate Mathematical Contest in Modeling (Top 2.6%);
- Second Prize of the National English Competition for College Students (Top 3%);
- First Prize of the 11th MathorCup College Mathematical Contest in Modeling (Top 5%);
- Meritorious Winner of the Mathematical Contest in Modeling (Top 5%);

EXTRACURRICULAR ACTIVITIES

- Served as the volunteer service leader of Chongqing Children's Library, organized volunteer service projects, and made overall arrangements over two years.
- Helped college students in English courses and tutored over 20 students to pass the College English Test (CET-4 & CET-6).
- Participated in the epidemic prevention work for my neighborhood during the epidemic period of Cov-19 and assisted community workers in recording relevant information in Nanchang.