Mingjun Ying

Phone: +86 13507096591 | Email: yingmingjun@nyu.edu

EDUCATION

New York University (NYU WIRELESS) Sept. 2023 - Jun. 2028

Chongqing University of Posts and Telecommunications Sept. 2019 - Jun. 2023

Communication Engineering (BEng, Hons) GPA: 3.75/4.00 IELTS 7.0

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

RESEARCH EXPERIENCE

Waste Factor: A New Metric for Evaluating Power Efficiency **NYU WIRELESS**

Supervisor: Prof. Theodore S. Rappaport (IEEE Fellow), NYU Jan. 2023 - Jun. 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.

- Apply the CF to the data center and other cascaded systems;
- Explores how insertion loss of components in a cascaded communication system influences Waste Factor at 28 GHz and 142 GHz using the consumption efficiency factor (CEF).
- Also covers the effects of varying UE and BS numbers on CEF in cellular networks.

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 PY-THON/ 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**.

PUBLICATIONS

Conference Papers

- **Mingjun Ying**, 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.
- Yuhao Lian, **Mingjun Ying**, Shuyu. Wang, Yuhua Wang. "An Efficient Fast Walsh-Hadamard Transform Based OFDM-IM Scheme with Lower PAPR." *2023 Wireless Telecommunications Symposium (WTS)*. IEEE, 2023: 1-6.
- Yuhao Lian, **Mingjun Ying**, Shuyu. Wang, Yuhua Wang. "Waste Factor: A New Metric for Evaluating Power Efficiency in any Cascade." *The International Wireless Communications and Mobile Computing Conference (IWCMC)* (Accepted).
- **Mingjun Ying,** Dipankar Shakya, Hitesh Poddar, and Theodore S. Rappaport. "Waste Factor A New Metric for Evaluating Power Efficiency in any Cascade." *2023 IEEE Global Communications Conference (GLOBECOM)* (Submitted).

Issued 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 International Wireless Communications & Mobile Computing Conference (IWCMC), Marrakesh, Morocco; June 2023, **Oral Presentation**.
- The 13th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), Porto Portugal, July 2022, **Oral Presentation**.
- The 11th International Conference on Communications, Circuits and Systems (ICCCAS), Singapore, May 2022, **Oral Presentation**.

HONORS AND AWARDS

- National Scholarship (Awarded by Ministry of Education of the People's Republic of China);
- President Honorary Award of CQUPT (The highest individual award, 10 people in total)
- 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 China Undergraduate Mathematical Contest in Modeling (Top 2.6%);
- First Prize of the MathorCup College Mathematical Contest in Modeling (Top 5%);
- Meritorious Winner of the Mathematical Contest in Modeling (Top 5%);