

Educational Background

University of Electronic Science and Technology of China

Sept. 2022 - Jun. 2026 (expected)

B.Eng in Communication Engineering

- Rank – 2/168 (top 1.19%) GPA – 3.92/4
- Major courses: Probability and Statistics (99), Stochastic Signal Analysis (96), Signals and Systems (95), Artificial Intelligence (95), Calculus I (94), Linear Algebra (90)
- English: CET-4: 602 CET-6: 602

Honors and Awards

2024 National Scholarship (Top 1.5%) for Undergraduates

2023-2024

2023 Luzhou Laojiao Corporate Scholarship (Top 2%) for Undergraduates

2022-2023

2022&2023 UESTC Outstanding Student Scholarship

2022-2023, 2023-2024

Research Experiences

Multi-spectral and Panchromatic Image fusion Fusion and Image Denoising

Sept. 2023 - Dec. 2023

- Studied the satellite multi-spectral and panchromatic image fusion algorithm based on the PanNet CNN, which mainly utilizes a four-layer residual network to learn high-frequency details of the images. This method integrates low-spatial-resolution multi-spectral images with panchromatic images to produce high-spatial-resolution outputs.
- Reproduced deep learning network frameworks similar to PanNet, such as DiCNN and FusionNet.
- Designed a deep CNN based on ResBlock network, achieving image denoising functionalities such as rain streak removal.

Partition-Based Large-Scale Antenna Array Assisted Near-Field Localization

Mar. 2024 - Jun. 2024

- Learned a partition-based XL-MIMO assisted near-field user localization algorithm, which significantly reduces computational complexity to linear while improving positioning accuracy over conventional benchmark algorithms.
- Learned a Bayesian inference framework for maximum a posteriori (MAP) estimation of user localization in cases lacking closed-form solutions, incorporating algorithms including message passing, variational Bayesian line spectral estimation (Valse), Gauss-Newton interpolation, and block coordinate descent (BCD).

Movable Antenna-Empowered Near-Field Sensing

Sept. 2024 - Present

- Almost independently conducted comprehensive research including literature review, model establishment, theoretical derivation, optimization simulation, and paper writing for the ICC conference paper.
- Discovered and rigorously proved that the spatial degrees of freedom introduced by movable antenna arrays can significantly enhance near-field sensing capability. The core innovation lies in optimizing movable antenna positions to minimize the Cramér-Rao Bound (CRB) for target estimation, thereby achieving superior localization accuracy. Derived closed-form solutions for optimal antenna placement in both angle and distance estimation scenarios, and developed a low-complexity discrete sampling-based algorithm to obtain near-optimal solutions for joint estimation. Simulation results demonstrate that the proposed configurations reduce the CRB by over 50% compared to conventional uniform linear arrays (ULA) in all three considered cases.
- Published a **first-authored** paper which is accepted by 2025 ICC Workshop with 3 citations:
[C1] Y. Wang, W. Mei, X. Wei, B. Ning, and Z. Chen, "Antenna Position Optimization for Movable Antenna-Empowered Near-Field Sensing," accepted by ICC Workshop, 2025, arXiv:2502.03169. [PDF]
- Currently preparing a comprehensive manuscript for the journal submission.

Competitions

2024 Mathematical Contest in Modeling (MCM)

Honorable Winner

2024 National English Competition for College Students (NECCS)

National Third Prize

Services

- Academic:** Peer Reviewer, 2025 IEEE ICC Workshop, Montreal, Canada.
- Social:** class academic officer; college peer counselor; core organizer of Green Volunteers Association