

# Ding Zhao

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## EDUCATION

### University of California, Los Angeles

*M.S. in Electrical and Computer Engineering GPA:3.94/4.0*

Los Angeles, CA, US

*Sep 2022 – April 2024 (Expected)*

### Zhejiang University

*B.E. in Electronic Science and Technology GPA:3.86/4.0*

Hangzhou, China

*Sep 2018 – Jun 2022*

## PUBLICATION

### Conference

- Ding Zhao, Ibrahim Pehlivan, Aditya Wadaskar, and Danijela Cabric. Fast Frequency-Direction mapping design for data communication with True-Time-Delay array architecture. In *2024 International Conference on Computing, Networking and Communications (ICNC): Signal Processing for Communications (ICNC'24 SPC)*, page 6, Big Island, USA, February 2024
- Aditya Wadaskar, Ding Zhao, Ibrahim Pehlivan, and Danijela Cabric. Structured Two-Stage True-Time-Delay array codebook design for Multi-User data communication. In *2023 IEEE Global Communications Conference: Wireless Communications (GlobeCom 2023 WC)*, page 6, Kuala Lumpur, Malaysia, December 2023
- Xianxin Song, Ding Zhao, Haocheng Hua, Tony Xiao Han, Xun Yang, and Jie Xu. Joint transmit and reflective beamforming for irs-assisted integrated sensing and communication. In *2022 IEEE Wireless Communications and Networking Conference (WCNC)*, pages 189–194. IEEE, 2022

## RESEARCH EXPERIENCE

### Physical-Layer Informed TCP Adaptation for Highly Dynamic Starlink Networks

San Diego, CA, US

*Advisor: Xinyu Zhang*

*July 2023 – Present*

- Built a physical-layer starlink signal receiving system for handoff and beamforming behavior.
- Proposed a system design method to synchronize starlink handoff time for precise TCP adaptation.
- Presented a cross-layer solution to enable TCP overly conservative congestion control for throughput improvement.
- Crafting a paper for submission.

### True Time Delay Based Beam Pattern Design for Data Communication

Los Angeles, CA, US

*Advisor: Danijela Cabric*

*Sept 2022 – Present*

- Developed a true-time-delay based architecture for generating frequency-dependent array responses.
- Proposed a novel heuristic algorithm for phase-delay design in frequency-direction mapping.
- Simulated the existing algorithms(JPTA, mmFlexible) and compared the spectral efficiency and computation time with the proposed algorithm.

### Sensing-Aided Millimeter-Wave Beam Tracking Algorithm Design

Hangzhou, China

*Advisor: Min Li*

*Dec 2021 – May 2022*

- Consider Integrated Sensing and Communication technology of millimeter wave communication system in view of the traditional beam alignment and tracking methods of training overheads.
- Developed an efficient data-driven sensing-assisted algorithm based on LSTM with high robustness compared to traditional model-driven algorithm based on Extended Kalman filter.

### Intelligent Reflecting Surface Aided Integrated Sensing and Communications

Shenzhen, China

*Advisor: Jie Xu*

*July 2021 – Oct 2021*

- Formulated an optimization problem by combining intelligent reflecting surfaces and integrated sensing and communication aiming at enhance sensing performance without LOS channel.
- Proposed an efficient algorithm to solve the formulated problem that is non-convex and difficult in general based on SDR.

## SKILLS

**Programming:** Verilog, C, C++, Python, MATLAB

**Tools:** Vivado, Software-defined radio, GNU-radio

## HONORS AND AWARDS

- Outstanding Graduates of Zhejiang University 2022
- Academic Records Scholarship of Zhejiang University(first class,3%) 2020-2021
- Academic Records Scholarship of Zhejiang University(first class,3%) 2019-2020
- Scholarship of National Talent Training Base(first class,6%) 2019-2020
- Academic Records Scholarship of Zhejiang University(third class) 2018-2019