Ding Zhao

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Education

University of California, Los Angeles — Los Angeles, USA
M.S. in Electrical and Computer Engineering ***GPA:3.9.0/4.0*** — *Sep 2022 – April 2024 (Expected)*
- **Coursework:** Matrix Analysis, Convex Optimization, Neural Signal Processing

Zhejiang University — Hangzhou, China
B.Eng. in Electronic Science and Technology ***GPA:3.86/4.0*** — *Sep 2018 – Jun 2022*

Publication

- Song, X., **Zhao, D.**, Hua, H., Han, T. X., Yang, X., Xu, J. (2022, April). Joint transmit and reflective beamforming for IRS-assisted integrated sensing and communication. In 2022 IEEE Wireless Communications and Networking Conference (WCNC) (pp. 189-194). IEEE.

Research Experience

True time delay algorithm for data communication — Los Angeles, USA
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, USA
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 Extended Kalman filter algorithm.

Integrated Wireless Sensing and Communications towards 6G — 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.
- Simulated the existing algorithms(JPTA, mmFlexible) and compared the spectral efficiency and computation time with the proposed algorithm.

model-driven deep learning based MU-MIMO precoding design — Shenzhen, China
Advisor: Guanding Yu — *Oct 2020 – April 2021*
- Analyzed traditional iterative algorithm WMMSE for MU-MIMO broadcast channel.
- Proposed a deep-unrolling framework to unfold the iterations into a series of neural network layers.
- Accelerate the algorithm by introducing training parameters to approximate matrix inverse using Taylor expansion.

Skills

Programming: System Verilog, C, Python, MATLAB

EDA Tools: Vivado, ModelSim, Advanced Design System, Altium Designer, Multisim