Jinjian LIU

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Education

Sichuan University   **Chengdu, China**

B. S. E. in Software Engineering (25/210)   GPA (overall): 3.76/4.00   **Sep. 2021 - Jun. 2025**

Chengdu Foreign Language School   **Chengdu, China**

Secondary School   **Sep. 2015 - Jun. 2021**

Research Experiences

Cylindrical Array Design to Optimize Polar-Azimuthal Direction-Finding Resolution   Sichuan University

Advisor: Y. I. Wu and K. T. Wong   Nov. 2023 - Mar. 2024

- This project targets cylindrical uniform arrays, proposing a closed-form design method by analyzing the trade-off between array volume and localization resolution.

- As a research member, I was primarily responsible for the derivation of Cramer-Rao bound expressions, plotting and writing. Additionally, I proposed the closed-form design method, which was a novel aspect of this project.

How Incident Source Influence Acoustic Sensor Direction-Finding Accuracy   Sichuan University

Advisor: Y. I. Wu and K. T. Wong   Mar. 2024 - Present

- This project primarily investigated the impact of incident source angle deviation on direction-finding accuracy for three superimposed figure-8 sensors and a pressure sensor under different placement methods.

- As a research member, I was responsible for deriving the Fisher Information Matrix and Cramer-Rao Bound for three different sensor array geometries. Additionally, I conducted simulations, plotted graphs, and contributed to the writing.

Range-Direction Transmit Beamforming for Wireless Power Transfer   Sichuan University

Advisor: Y. I. Wu, K. T. Wong and H. S. Mir   Oct. 2022 - Present

- This project aims to achieve wireless power transfer by using global optimization algorithms to adjust the weights and frequency offsets of multiple transmission antennas, concentrating the transmitted energy in a specific spatial region.

- As a research member, I was responsible for conducting optimization simulations by analyzing and utilizing various algorithms, including genetic algorithm and interior-point algorithm, among which cloud computing is used to address large-scale computing issues.

Publications

1. **J. Liu,** K. T. Wong, and Y. I. Wu, "Cylindrical Array Design to Optimize Polar-Azimuthal Direction-Finding Resolution", under review by the *SIGNAL PROCESSING*.

2. A. Olenko, **J. Liu**, Y. Song, M. L. Velasco, K. T. Wong, and Y. I. Wu, "How a Bi-Axial Velocity-Sensor's Direction-Finding Precision is Affected by Angular Spreading of the Incident Source", prepare to submit to the *IEEE Transactions on Aerospace and Electrical Systems*.

Awards & Honors (*Selected*)

"Zili-Zhidong" Comprehensive Scholarship (Top 0.5%)   Dec. 2023

Comprehensive Scholarship of Sichuan University (Top 15%)   Nov. 2022 & Nov. 2023

Excellent Student of Sichuan University (Top 5%)   Nov. 2023 & Nov. 2024

Excellent Student Leader of Sichuan University (Top 5%)   Nov. 2022

Excellent Graduate of Sichuan University (Top 5%)   Nov. 2024

Internship & Workshop

2023 NUS SoC Summer Workshop   May. 2023 - Jul. 2023, Singapore

Fully funded by Sichuan University

Internship at IT Company Suncaper   Feb. 2024 - May. 2024, Chengdu

Extracurricular Activities

Sep. 2021-present, Core leader of the class, College of Computer Science, Sichuan University

Sep. 2021-Jun. 2022, Member in Student Union, Sichuan University

Sep. 2022-Jun. 2023, Associate President of "Cheng" Union, Department of Philosophy, Sichuan University

Skills

Languages: Native in Chinese, Fluent in English, with an **IELTS score of 7.5 overall** and 8.5 in Reading

Programming Language: MATLAB, Python, Java, LaTeX