HAO SUN

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EDUCATION

The Chinese University of Hong Kong, Shenzhen *Jan.2020-Dec.2024*

Ph.D. in Computer and Information Engineering

Advisor: Professor Junting Chen

Research interest: matrix factorization, matrix completion, tensor decomposition, tensor completion, generative models, with their application in channel modeling and channel estimation

University of Electronic Science and Technology of China (UESTC) *Sep.2014-June.2018*

Bachelor of Biomedical Engineering

Overall GPA: 3.90/4.0; 88.94/100

Ranking: 2/67

Shenyang Institute of Automation Chinese Academy of Sciences *Sep.2017-Dec.2017*

Visiting Student at State Key Laboratory of Robotics

National Chiao Tung University(NCTU) (Tai Wan) *Feb.2017-June.2017*

Exchange student at Electrical and Computer Engineering Department

Overall GPA: 4.15/4.3; 90/100

EXPERIENCE

The Chinese University of Hong Kong, Shenzhen *Aug.2019-Dec.2019*
Laboratory for Wireless Communication and Intelligent Signal Processing

The Chinese University of Hong Kong *Aug.2018-May.2019*
Laboratory for Microwave Engineering

PUBLICATION

Journal:

1. H. Sun, and J. Chen, "Integrated Interpolation and Block-term Tensor Decomposition for Spectrum Map Construction", IEEE Transactions on Signal Processing, vol. 72, pp. 3896-3911, 2024.

2. H. Sun, and J. Chen, "Energy-modified Leverage Sampling for Radio Map Construction via Matrix Completion", IEEE Signal Processing Letters, vol. 31, pp. 1780-1784, 2024.

3. H. Sun, and J. Chen, "Propagation map reconstruction via interpolation assisted matrix completion", IEEE Transactions on Signal Processing, vol. 70, pp. 6154-6169, 2022.

Conference:

1. H. Sun, J. Chen and Y. Luo, "Tensor-guided interpolation for off-grid power spectrum map construction", in Proc. IEEE Int. Conf. Acoustic, Speech, and Signal Process. (ICASSP), 2024.

2. H. Sun, and J. Chen, "Regression assisted matrix completion for reconstructing a propagation field with application to source localization", in Proc. IEEE Int. Conf. Acoustic, Speech, and Signal Process. (ICASSP), 2022.

3. H. Sun, and J. Chen, "Grid optimization for matrix-based source localization under inhomogeneous sensor topology", in Proc. IEEE Int. Conf. Acoustic, Speech, and Signal Process. (ICASSP), 2021.

Patents

1. Junting Chen, Hao Sun, Yi Chen, "Signal source positioning method and system for performing matrix completion by using adaptive noise estimation", CN113740802B, 2022-07-22.

2. Junting Chen, Hao Sun, Yi Chen, "Signal source positioning method and system for improving matrix completion performance through self-adaptive rasterization", CN113721191B, 2022-07-22.

3. Junting Chen, Hao Sun, Yi Chen, "Dynamic window-based radio map construction method", CN115077514B, 2022-11-11.

PROJECT

Low-altitude Network Unmanned Aerial Vehicle Communication Coverage *2023.3-2024.12*

By using Wireless Insite simulation to generate electromagnetic environmental data in the low-altitude domain, based solely on sparse environmental data, the three-dimensional environmental reconstruction of the beam space is achieved through generative neural networks (GAN, Diffusion model).

Positioning of Illegal Radio Stations Based on Massive Data *2020.1-12*

Based on a vast amount of actual measured FM radio frequency modulation data within the Fifth Ring Road of Beijing, signal source locations are determined by preprocessing the data, parsing spectral space structure features, and designing sparse matrix completion algorithms.

AWARDS

Students Research Award of CUHK(SZ) *Dec.2023*

Outstanding Graduates of UESTC *Jun.2018*

National Scholarship (2%) *Oct.2016*

National Scholarship (2%) *Oct.2015*

Excellent Graduation Thesis of UESTC *Jun.2018*

People's Top Grade Scholarship (3%) *Oct.2017*

Tang Lixin Scholarship (0.5%) *Nov.2016*

Second prize in National English Competition for College Students *May.2015*

TEACHING ASSISTANT

ELEG 4213 Radio Frequency Electronics / ELEG 5759 Innovation, Technology and Management in Modern Engineering / EIE 3510 Digital Signal Processing / EIE 3001 Signals and Systems / EIE 4006/CIE 6126 Performance Evaluation of Communication Networks