Hao Liang | Curriculum Vitae

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RESEARCH INTEREST

Non-Stationary Signal Decomposition, Acoustic Beamforming, Signal Processing
Sparse Optimization, Bayesian Learning, Model-Driven Deep Learning

EDUCATION

Xiamen University   **Xiamen, CHN**

M.E. in Signal and Information Processing   *September 2020 - June 2023 (expected)*

– GPA: 3.80/4.0
– Rank: 1/104
– Centesimal grade average: 82.3

Shenzhen University   **Shenzhen, CHN**

B.E. in Electronic Information Engineering, B.S. in Statistics (Double Degree)   *September 2016 - June 2020*

– GPA: 3.86/4.5
– Rank: 6/155
– Centesimal grade average: 89.2

AWARDS & HONORS

[regular] **Outstanding Graduate Students**, Xiamen University, 2022

[regular] **Outstanding Student Cadres**, Xiamen University, 2022

[regular] **The First Price Scholarship**, Xiamen University, 2022

[regular] **Outstanding Volunteers**, Xiamen University, 2022

[regular] **Outstanding Graduate Students**, Xiamen University, 2021

[regular] **Outstanding Graduates**, Shenzhen University, 2020

[regular] **The First Price Scholarship**, Shenzhen University, 2019

[regular] **The Second Price Academic Scholarship**, Shenzhen University, 2019

[regular] **The Second Price Academic Scholarship**, Shenzhen University, 2017

RESEARCH EXPERIENCE

Computational Acoustic Imaging   *2020 - 2022*

[regular] It focuses on array signal processing, beamforming, and model-driven deep learning.

[regular] It processes the multi-dimension signals, collected by the microphone array, by employing the acoustic beamforming algorithms, to generate the sound pressure level distribution on the scanning plane, and then displays it through photos or videos.

[regular] It plays a significant role in various fields, such as noise monitoring and industrial fault diagnosis.

Adaptive Sparse Time-Frequency Estimation   *2020 – 2022*

[regular] It focuses on sparse time-frequency decomposition and sparse Bayesian learning.

[regular] It aims to adaptively estimate the parameters (e.g., instantaneous amplitudes and frequencies) of the non-stationary signals (e.g., nonlinear chirp signals and dispersive signals), and then learn the active dictionary in a data-driven manner, thereby enabling a high-resolution time-frequency representation.

[regular] It helps to promote the theoretical value of signal time-frequency analysis and application prospects of fault diagnosis.

SKILLS

Programming	Matlab, LaTex, Python, Pytorch
Languages	Chinese, English, Cantonese
Software	Office, Endnote

PUBLICATIONS

[regular] **Sparse Optimization for Nonlinear Group Delay Mode Estimation**
Liang, Hao and Ding, Xinghao and Jakobsson, Andreas and Tu, Xiaotong* and Huang, Yue
The Journal of the Acoustical Society of America, 2022. **IF: 2.482, Rank: Q2.**

[regular] **High-Resolution Source Localization Exploiting the Sparsity of the Beamforming Map**
Ding, Xinghao (supervisor) and **Liang, Hao** and Jakobsson, Andreas and Tu, Xiaotong* and Huang, Yue
Signal Processing, 2022. **IF: 4.729, Rank: Q1.**

[regular] **A Robust Low-Rank Matrix Completion Based on Truncated Nuclear Norm and Lp-norm**
Liang, Hao and Li, Kang* and Huang, Jianjun
The Journal of Supercomputing, 2022. **IF: 2.557, Rank: Q2.**

[regular] **Adaptive Variational Nonlinear Chirp Mode Decomposition**
Liang, Hao and Ding, Xinghao and Jakobsson, Andreas and Tu, Xiaotong* and Huang, Yue
in *2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2022.

OTHER PUBLICATIONS (Under Review)

[regular] **Paper 1**
Authors
submitted to *IEEE Transactions on xxx* (in Major Revision), 2022. **IF: xx, Rank: xx.**

[regular] **Paper 2**
Authors
submitted to *IEEE Conference on xxx*, 2023.

[regular] **Paper 3**
Authors
submitted to *IEEE Conference on xxx*, 2023.

SELECTED COURSES

[regular] **Postgraduate:**

Machine Learning (93), Matrix Theory (88), Applied Information Theory (90), Stochastic Process (94), Optimization Theory and Engineering Applications (93), Digital Image Processing (88)

[regular] **Undergraduate:**

Linear Algebra (99), Advanced Mathematics A1 (95), Advanced Mathematics A2 (90), Field Theory and Complex Analysis (94), Signals and Systems (86), Theory and Algorithm of Numerical Computing (90), Stochastic Signal Processing (97), Digital Signal Processing (96), Probability Theory and Mathematical Statistics (94), Digital Image Processing (88), Advanced Algebra 1 (95), Mathematical Analysis 2 (96), Stochastic Process (99), Operational Research (94), Advance Algebra 2 (93), Mathematical Analysis 3 (99), Non-Parametric Statistics (90), Bayesian Statistics (96)

REFERENCES

[regular] **Dr. Xinghao Ding**
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[regular] **Dr. Xiaotong Tu**
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