Zepeng Zhang

Intelligent Maintenance and Operations Systems (IMOS) Lab
École Polytechnique Fédérale de Lausanne (EPFL)

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EDUCATION

Ph.D. Electrical Engineering, École Polytechnique Fédérale de Lausanne, 2023.09-present
Supervisor: Prof. Olga Fink

M.S. Information and Communication Engineering, ShanghaiTech University, 2020.09-2023.07
Overall GPA: 3.95/4.00; Major GPA: 4.00/4.00;

B.Eng. Measuring & Control Technology and Instrumentations, Wuhan University, 2016.09-2020.05

EXPERIENCES

2023.02–2023.04   Research Intern, Peking University

2019.12–2020.09   Visiting Student, ShanghaiTech University

2019.07–2019.09   Visiting Student, City Univercity of HongKong

2018.01–2020.06   Member, WHUAI (ZhuYing Team)

CURRENT RESEARCH INTERESTS

Graph Machine Learning, Graph Signal Processing, Neural Algorithmic Reasoning

PUBLICATIONS

1. Domain Adaptive Unfolded Graph Neural Networks
   Zepeng Zhang and Olga Fink
   AAAI Conference on Artificial Intelligence (AAAI), 2024. [paper]

2. Graph Neural Networks With Adaptive Structures
   Zepeng Zhang, Songtao Lu, Zengfeng Huang, and Ziping Zhao
   IEEE Journal of Selected Topics in Signal Processing: Special Series on AI in Signal & Data Science
   (JSTSP), 2024. [paper]

3. Accelerating quadratic transform and WMMSE
   Kaiming Shen, Ziping Zhao, Yannan Chen, **Zepeng Zhang**, and Hei Victor Cheng
   IEEE Journal on Selected Areas in Communications: Special Issue on Advanced Optimization
   Theory and Algorithms for Next Generation Wireless Communication Networks (JSAC), 2024.
   [paper]

4. Accelerating quadratic transform and WMMSE
   Kaiming Shen, Ziping Zhao, Yannan Chen, **Zepeng Zhang**, and Hei Victor Cheng
   The IEEE International Symposium on Information Theory (ISIT), 2024. [paper]

5. Enhancing the Efficiency of WMMSE and FP for Beamforming by Minorization-Maximization
Zepeng Zhang, Ziping Zhao, and Kaiming Shen
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). [paper]

6. Weighted Sum-Rate Maximization for Multi-Hop RIS-Aided Multi-User Communications: A Minorization-Maximization Approach.
Zepeng Zhang and Ziping Zhao
IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC) 2021. Best Student Paper Award Finalist [paper]

7. Vast Portfolio Selection With Submodular Norm Regularizations.
Zepeng Zhang, and Ziping Zhao
European Signal Processing Conference (EUSIPCO), 2021. [paper]

8. Multi-Period Portfolio Optimization for Financial Index Tracking.
Xiuyuan Huang, **Zepeng Zhang**, and Ziping Zhao
Annual Asilomar Conference on Signals, Systems, and Computers (ACSSC/Asilomar) 2021. [paper]

9. Scalable Financial Index Tracking With Graph Neural Networks.
Zepeng Zhang, and Ziping Zhao
IEEE Statistical Signal Processing Workshop (SSP) 2021. [paper]

10. A Deep Learning-Aided Approach to Portfolio Design for Financial Index Tracking.
Zepeng Zhang, and Ziping Zhao
Annual Asilomar Conference on Signals, Systems, and Computers (ACSSC/Asilomar) 2020. [paper]

AWARDS AND HONORS

2021	Best Student Paper Award Finalist in IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)
2019	Yu Gang Scholarship (Top 1%, Rank 1st out of the department), WHU Outstanding Student First-Class Scholarship (Top 5%), WHU
2018	SAMSUNG Scholarship (Top 1%, Rank 1st out of the department), WHU Outstanding Student First-Class Scholarship (Top 5%), WHU 1st prize of RoboCup China Open 1st prize of Asia and Pacific Mathematical Contest in Modeling 3rd prize of The Chinese Robot Skills Competitions
2017	Outstanding Student Second-Class Scholarship (Top 15%), WHU 1st prize of The Chinese Mathematics Competitions, Hubei Prov.

TEACHING ASSISTANT

EPFL

CIVIL 426: Machine learning for predictive maintenance applications 2023-24 Fall, 2024-25 Fall

CIVIL 332: Data Science for infrastructure condition monitoring 2023-24 Spring, 2024-25 Spring

MATH 106: Math Analyse II, 2024-25 Spring

ShanghaiTech University

CS182: Introduction to Machine Learning 2021-22 Fall

SI 231: Matrix Analysis and Computations 2020-21 Spring, 2021-22 Spring

ACADEMIC SERVICE

Journal Reviewer: IEEE Transactions on Wireless Communications, Mechanical Systems and Signal Processing, IEEE Open Journal of Signal Processing, Neurocomputing

Conference Reviewer: ICML, NeurIPS, LOG, AISTATS, WWW, ICASSP, ECAI, MLSP

SKILLS

Python, MATLAB, CVX, PyTorch, PyG, LaTeX

Toefl: 105 (Reading: 30; Listening: 27; Speaking: 22; Writing: 26)