Jingjing Zheng

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Research Interests: low-rank recovery, sparse representation learning, and explainable deep neural networks.

Education

Department of Computer Science, Memorial University of Newfoundland, St.john's NL, Canada

Ubiquitous Computing and Machine Learning Research, Cummulative GPA: 4.00/4.00

- Supervisors: Dr. Xianta Jiang, Dr. Xiaoqin Zhang and Dr. Yuanzhu Chen

College of Mathematics and Physics, Wenzhou University, Zhejiang, P. R. China

M.S., Applied Mathematics, June 2020

- Dissertation: "Low rank recovery based on L_0 norm non-convex surrogate methods and its application"
- Supervisor: Dr. Xiaoqin Zhang

College of Art Design, Wuchang Institute of Technology, Hubei, P. R. China

B.A., Environmental Art Design, June 2015

- Dissertation: "Portable design of residential unit is analysed"
- Advisor: Hao Cheng

Awards and honors

- Mitacs Accelerate Award with Verafin, 2022.05
- MUN Outstanding research award, 2022.03
- National Scholarship, China, 2019
- Outstanding Graduates of Zhejiang Province, China, 2019
- National Post-Graduate Mathematical Contest in Modeling, China (Second Prize, Team Leader), 2017
- National Post-Graduate Mathematical Contest in Modeling, China (Third Prize, Team Leader), 2018
- CISC Outstanding Paper Award, China, 2018
- Wenzhou Academic Scholarship, China (First Prize), 2019
- Wenzhou Academic Scholarship, China (First Prize), 2018

Publications

Journal:

1. Jingjing Zheng, Xiaoqin Zhang*, Xianta Jiang. Handling Slice Permutations Variability in Tensor-Tensor Product for Low Rank Recovery, *IEEE Transactions on Pattern Analysis and Machine Intelligence*. (in preparation)
2. Xiaoqin Zhang, Ziwei Huang, Jingjing Zheng*, Shuo Wang, Xianta Jiang. DcnnGrasp: Towards Accurate Grasp Pattern Recognition with Adaptive Regularizer Learning, *IEEE Transactions on Neural Networks and Learning Systems*. (under review)
3. Jingjing Zheng, Wenzhe Wang, Xiaoqin Zhang*, Xianta Jiang. Fast Tensor Completion with Non-Convex Surrogates for Large-Scale Data, *IEEE Transactions on Neural Networks and Learning Systems*. (under review)
4. Xianta Jiang, Ziang Wu, Jingjing Zheng, Bin Zheng, M. Stella Atkins. Index Pupil Activity Echoing Excellently with Task Difficulty in Fitts? Law Setting, *ETRA* (under review)

5. Zhiwei Huang, Jingjing Zheng, Li Zhao*, Huiling Chen, Xianta Jiang, Xiaoqin Zhang. DL-Net: Sparsity Prior Learning for Grasp Pattern Recognition, *IEEE Access*, 2023.
6. Xiaoqin Zhang*, Jingjing Zheng, Di Wang, Guiying Tang, Zhengyuan Zhou, and Zhouchen Lin. Structured Sparsity Optimization with Non-Convex Surrogates of $\ell_{2,0}$-Norm: A Unified Algorithmic Framework. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2022.
7. Xiaoqin Zhang*, Jingjing Zheng, Li Zhao, Zhengyuan Zhou, Zhouchen Lin. Tensor Recovery With Weighted Tensor Average Rank. *IEEE Transactions on Neural Networks and Learning Systems*, 2022.
8. Shuo Wang, Jingjing Zheng, Bin Zheng, Xianta Jiang*. Phase-Based Grasp Classification for Prosthetic Hand Control Using sEMG. *Biosensors*, 2022.
9. Shuo Wang, Jingjing Zheng, Ziwei Huang, Xiaoqin Zhang, Vinicius Prado, Bin Zheng and Xianta Jian*. Integrating computer vision to prosthetic hand control with sEMG: Preliminary results in grasp classification, *Frontiers in Robotics and AI*, 2022.
10. Wenzhe Wang, Jingjing Zheng, Li Zhao*, Huiling Chen, Xiaoqin Zhang. A Non-Local Tensor Completion Algorithm Based on Weighted Tensor Nuclear Norm, *Electronics*, 2022.
11. Xiaoqin Zhang*, Jingjing Zheng, Di Wang and Li Zhao. Exemplar-Based Denoising: A Unified Low-rank Recovery Framework. *IEEE Transactions on Circuits and Systems for Video Technology*, 2019,(99):1-1.
12. Xiaoqin Zhang, Jingjing Zheng, Yufang Yan, Li Zhao*, Runhua Jiang. Joint Weighted Tensor Schatten p-Norm and Tensor l_p-norm Minimization for Image Denoising. *IEEE Access*, 2019.
13. Jingjing Zheng. A new solver for the summation S_n of sequence $\{n^2\}$. *Mathematics study and research*, 2016,(6): 122-122.

Conference:

1. Jingjing Zheng, Xiaoqin Zhang*, Wenzhe Wang, Xianta Jiang. Handling Slice Permutations Variability in Tensor Recovery. *AAAI Conference on Artifical Intelligence*, 2022.
2. Mengqing Sun, Li Zhao*, Jingjing Zheng and Jiawei Xu. A Nonlocal Denoising Framework Based on Tensor Robust Principal Component Analysis with ℓ_p norm. *IEEE Conference on Big Data*, 2020.
3. Xiaoju Lu, Guiying Tang, Di Wang, Xiaoqin Zhang and Jingjing Zheng*. Structural Dictionary Learning based on Non-convex Surrogate of $\ell_{2,1}$ Norm for Classification. *IEEE Conference on Big Data*, 2019:5056-5061.
4. Yufang Yan, Xiaoqin Zhang*, Jingjing Zheng and Li Zhao. Weighted Tensor Schatten p-norm Minimization for Image Denoising. *China Intelligent System Conference*, 2019:163-172. **2018 Outstanding Paper Award**

Preprint Paper:

1. Xiaoqin Zhang, Ziwei Huang, Jingjing Zheng*, Shuo Wang, Xianta Jiang. DcnnGrasp: Towards Accurate Grasp Pattern Recognition with Adaptive Regularizer Learning. arXiv: 2205.05218, 2022.

Submitted Patents

1. Xiaoqin Zhang, Jingjing Zheng, Yufang Yan, Image Denoising Method Based on Novel Norm, Patent Number: 201810233460.7, Date of Application: 2018.03.21
2. Li Zhao, Xiaoqin Zhang, Jingjing Zheng, Wenzhe Wang, A Nonlocal Denosing Framework Based on Generalized Non-convex Tensor Robust Principal Component Analysis for Color Image and Video, Patent Number: CN202110010629.4, Date of Application: 2021.01.06

Grants

1. Science and Technology Innovation Program for College Students in Zhejiang Province, Image Classification Based on New Norm and Its Generalization, Jingjing Zheng (Principal Investigator), Xiaoju Lu, Guiying Tang, 2018-2020, fund: RMB ¥ 10,000.
2. Mitacs Accelerate Award with Verafin, Unsupervised Financial Fraud Detection Using Low-rank Recovery, $15000, 2022.5-2022.9

Reviewing Experience

- Reviewer, IEEE Access
- Reviewer, Scientific Reports
- Reviewer, Computers in Biology and Medicine
- Abstract reviewer, the 2021 Aldrich conference

Teaching Experience

Teaching Assistant, Memorial University of Newfoundland, St.john's NL, Canada

- Computer Science 2002: Data Structures and Algorithms, Winter 2022

Mentee

- Mengqing Sun, College of Mathematics and Physics, Wenzhou University, Zhejiang, P. R. China
- Wenzhe Wang, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China
- Zhiwei Huan, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China
- Xixiang Chen, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China

Professional Activities

Talks and Presentations:

- Handling Slice Permutations Variability in Tensor Recovery, AAAI Conference on Artificial Intelligence, 2022
- Handling Slice Permutations Variability in Tensor Recovery, the First Annual SEA Conference, 2022
- Handling slice permutations and transpose variability in tensor Recovery, AARMS CRG workshop, June 2, 2022