

# Jingjing Zheng

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## CONTACT INFORMATION

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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, Cumulative 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. DcnGrasp: 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  $\ell_p$ -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 Artificial Intelligence*, 2022.
2. Mengqing Sun, Li Zhao\*, Jingjing Zheng and Jiawei Xu. A Nonlocal Denoising Framework Based on Tensor Robust Principal Component Analysis with  $\ell_p$  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	<ol style="list-style-type: none"> <li>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.</li> <li>2. Mitacs Accelerate Award with Verafin, Unsupervised Financial Fraud Detection Using Low-rank Recovery, \$15000, 2022.5-2022.9</li> </ol>
REVIEWING EXPERIENCE	<ul style="list-style-type: none"> <li>• Reviewer, IEEE Access</li> <li>• Reviewer, Scientific Reports</li> <li>• Reviewer, Computers in Biology and Medicine</li> <li>• Abstract reviewer, the 2021 Aldrich conference</li> </ul>
TEACHING EXPERIENCE	<p><b>Teaching Assistant</b>, Memorial University of Newfoundland, St.john's NL, Canada</p> <ul style="list-style-type: none"> <li>• Computer Science 2002: Data Structures and Algorithms, Winter 2022</li> </ul>
MENTEE	<ul style="list-style-type: none"> <li>• Mengqing Sun, College of Mathematics and Physics, Wenzhou University, Zhejiang, P. R. China</li> <li>• Wenzhe Wang, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China</li> <li>• Zhiwei Huan, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China</li> <li>• Xixiang Chen, College of Computer Science and Artificial Intelligence, Wenzhou University, Zhejiang, P. R. China</li> </ul>
PROFESSIONAL ACTIVITIES	<p><b>Talks and Presentations:</b></p> <ul style="list-style-type: none"> <li>• Handling Slice Permutations Variability in Tensor Recovery, AAAI Conference on Artificial Intelligence, 2022</li> <li>• Handling Slice Permutations Variability in Tensor Recovery, the First Annual SEA Conference, 2022</li> <li>• Handling slice permutations and transpose variability in tensor Recovery, AARMS CRG workshop, June 2, 2022</li> </ul>