

XIULIN WANG

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## Personal

Male, born on March 3, 1990 in Yucheng, China, Chinese citizen.

Current residence: Helvintie 2f/5a, Jyväskylä, Finland

## Education

2017.09~present, Ph.D candidate. Mathematical Information Technology, Faculty of Information Technology, University of Jyväskylä, Finland.

Supervisor: Dr. Tapani Ristaniemi, Dr. Fengyu Cong.

2016.09~present, Ph.D candidate. Biomedical engineering, School of Biomedical Engineering, Faculty of Electronic Information and Electrical Engineering, Dalian University of Technology, China.

Supervisor: Dr. Tapani Ristaniemi, Dr. Fengyu Cong.

2012.09~2015.06, M.E. Signal and Information Processing, School of Information and Communication Engineering, Faculty of Electronic Information and Electrical Engineering, Dalian University of Technology, China.

Supervisor: Dr. Xiaofeng Gong.

Thesis title: Research on Methods of Multi-set Joint Blind Source Separation

2008.09~2012.06, B.E. Communication Engineering. School of Mechanical, Electrical & Information Engineering, Shandong University, Weihai, China.

## Research Interests

Current research: Joint analysis of multiple datasets, and its applications in the image, audio, neuroscience, biomedical engineering, machine learning and data mining. My research target is to derivate and develop new high-efficient algorithms, and provide versatile software toolboxes. Specifically:

1. Tensor decomposition/factorization
2. Coupled/Linked/Joint tensor decomposition
3. Signal processing(e.g. brain, image, audio etc.)
4. Machine learning and data mining

Early research:

Blind source separation/Joint blind source separation

## Work experience

2015.07~2016.07, DSP Engineer. Beijing Huiqing Technology Co., Ltd, China.

Development, design and testing of DSP module of high-frequency backpack radios/multi-frequency handheld radios. Programming language: C/C++/Matlab

2013.03~2015.06, Teaching Assistant. Dalian University of Technology, Dalian, China.

Duties include tutoring undergraduates to complete graduation designs and thesis.

## Publications

Group Analysis of Ongoing EEG Data Based on Fast Double-Coupled Nonnegative Tensor Decomposition. **Xiulin Wang**, Wenya Liu, Tapani Ristaniemi and Fengyu Cong, *IEEE Journal of Selected Topics in Signal Processing*, 2019, submitted.

Generalized Non-orthogonal Joint Diagonalization with LU Decomposition and Successive Rotations. Xiaofeng Gong, **Xiulin Wang**, Qihua Lin. *IEEE Transaction on Signal Processing*, 2015, 63(5), pp. 1322-1334. We also published corresponding matlab toolbox with the source codes: GNJD\_Software\_Package, version 1.0, January 2015.

Fast Implementation of Double-coupled Nonnegative Canonical Polyadic Decomposition. **Xiulin Wang**, Tapani Ristaniemi, Fengyu Cong. *44th International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Brighton, United Kingdom, 2019, accepted. (Poster)

Generalization of Linked Canonical Polyadic Tensor Decomposition for Group Analysis. **Xiulin Wang**, Chi Zhang, Tapani Ristaniemi, Fengyu Cong. *16th International Symposium on Neural Networks (ISNN)*, Moscow, Russia, 2019, accepted.

A Study on Parallelization of Successive Rotation Based Joint Diagonalization. **Xiulin Wang**, Xiaofeng Gong, and Qihua Lin. *19th International Conference on Digital Signal Processing (DSP)*, Hong Kong, China, 2014. (Oral presentation)

## Academic activities

AI Health days-Seminar on Artificial Intelligence and Healthcare. January 16, 2019, Jyväskylä, Finland.

The 6th Annual Research Seminar of CIBR. Brain signal processing and advanced methodologies of neuroscientific research. December 13, 2018. Jyväskylä, Finland.

EURASIP Summer School. Tensor-Based Signal Processing, organised by Dr. Lieven De Lathauwer and Dr. Sabine Van Huffel. August 27-31, 2018, KU Leuven, Belgium. (Poster)

The 28th Jyväskylä Summer School, August 6-17, 2018, Jyväskylä, Finland. Course: Data analytics + Machine learning + Optimisation (JSS28).

The 2nd Symposium of Liaoning Neuroscience Society. October 14-16, 2016, Shenyang, China.

## Languages

Chinese - native; English - fluent; Finnish - rudimentary (learning).

## Research funding

China Government Scholarship, from China Scholarship Council, 2017.10~2019.10, 1200€/month