Fanghui Liu

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Education

2014.09 - **Ph.D. candidate**, *in Pattern Recognition and Intelligent System*, Institute of Image Processing Pattern Recognition, Shanghai Jiao Tong University, China.

advisor: Prof. Jie Yang

2010.09 - **B.Sc.**, *in Control Science and Engineering*, School of Astronautics, Harbin Institute of
2014.06 Technology, China.

Research Interests

I'm generally interested in statistical machine learning, mainly on **kernel methods** regarding to data-adaptive nonparametric kernel learning, out-of-sample extensions for nonparametric kernel methods, indefinite kernel (real, symmetric, but not positive definite) learning, and kernel approximation in large scale situations.

Previously I focused on **visual tracking** and I will follow up its progress. Besides, I'm interested in some topics including **bayesian learning** and **approximation theory**.

Selected Publications

Preprints

Fanghui Liu*, Lei Shi*, Xiaolin Huang, Jie Yang, and Johan A.K. Suykens: *Generalization properties in hyper-RKHS and its application to out-of-sample extensions*. International Conference on Artificial Intelligence and Statistics (AISTATS), 2019, arXiv:1809.09910, under review. (* indicates equal contribution)

Fanghui Liu, Xiaolin Huang, Lei Shi, Jie Yang, and Johan A.K. Suykens: *Random Fourier features: beyond Bochner kernels by infinite Gaussian mixtures*. The Thirty-Third AAAI Conference on Artificial Intelligence (AAAI), 2019, under review.

Fanghui Liu, Xiaolin Huang, Chen Gong, Jie Yang, and Li Li: *Learning data-adaptive nonparametric kernels*. IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2018, arXiv:1808.10724, under review.

Journal Papers

2018 **Fanghui Liu**, Xiaolin Huang, Chen Gong, Jie Yang, and Johan A.K. Suykens: *Indefinite kernel logistic regression with Concave-inexact-convex procedure.* IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2018.

Fanghui Liu, Chen Gong, Xiaolin Huang, Tao Zhou, Jie Yang, and Dacheng Tao: *Robust visual tracking revisited: from correlation filter to template matching.* IEEE Transactions on Image Processing (TIP), 2018.

Cheng Peng, **Fanghui Liu**, Jie Yang, and Nikola Kasabov: *Robust visual tracking via Dirac weighted cascading correlation filters*, IEEE Signal Processing Letters (SPL), 2018.

Cheng Peng, **Fanghui Liu**, Jie Yang, and Nikola Kasabov: *Densely connected discriminative correlation filters for visual tracking*, IEEE Signal Processing Letters (SPL), 2018.

2017   **Fanghui Liu**, Chen Gong, Tao Zhou, Keren Fu, Xiangjian He, and Jie Yang: *Robust visual tracking via nonnegative multiple linear coding.* IEEE Transactions on Multimedia (TMM), 2017.

Fanghui Liu, Tao Zhou, Chen Gong, Keren Fu, Li Bai and Jie Yang: *Incremental inverse nonnegative local coordinate factorization for visual tracking.* IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2017.

Fanghui Liu, Tao Zhou, Keren Fu and Jie Yang: *Kernelized temporal locality learning for real-time visual tracking.* Pattern Recognition Letters (PRL), 2017.

Tao Zhou, **Fanghui Liu**, H. Bhaskar and Jie Yang: *Robust visual tracking via online discriminative and low-rank dictionary learning.* IEEE Transactions on Cybernetics (TCYB), 2017.

2016   **Fanghui Liu**, Tao Zhou, Keren Fu and Jie Yang: *Robust visual tracking via constrained correlation filter coding.* Pattern Recognition Letters (PRL), 2016.

Fanghui Liu, Tao Zhou, Keren Fu and Jie Yang: *Geometric affine transformation estimation via correlation filter for visual tracking.* Neurocomputing, 2016.

Tao Zhou, Harish Bhaskar, **Fanghui Liu** and Jie Yang: *Graph regularized and locality-constrained coding for robust visual tracking.* IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), 2016.

Conference Papers

2018   **Fanghui Liu**, Xiaolin Huang, Chen Gong, Jie Yang, and Li Li: *Nonlinear Pairwise Layer and Its Training for Kernel Learning.* The Thirty-Second AAAI Conference on Artificial Intelligence (AAAI), 2018.

2017   **Fanghui Liu**, Xiaolin Huang and Jie Yang: *Indefinite kernel logistic regression.* ACM Multimedia (ACM MM), 2017.

2016   **Fanghui Liu**, Tao Zhou, Keren Fu, Irene Yu-Hua Gu, and Jie Yang: *Robust visual tracking via inverse nonnegative matrix factorization.* IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2016.

2015   **Fanghui Liu**, Tao Zhou, Irene Yu-Hua Gu and Jie Yang: *Visual tracking via nonnegative regularization multiple locality coding.* IEEE International Conference on Computer Vision Workshops (ICCVW), 2015.

Selected Honors, Awards and Fellowships

2018 National Scholarship, awarded by Ministry of Education of the P.R.C
2018 "Outstanding Reviewer Award" by PATTERN RECOGNITION LETTERS Journal
2018 "Outstanding Reviewer Award" by PATTERN RECOGNITION Journal
2018 the Nurturing Foundation of "Excellent Doctorial Dissertation", awarded by Shanghai Jiao Tong University
2018 AAAI student travel award
2017 National Scholarship, awarded by Ministry of Education of the P.R.C
2016 National Scholarship, awarded by Ministry of Education of the P.R.C
2013 Meritorious Winner of American Mathematical Contest in Modeling (MCM)
2012 The First Prize of the Northeast China Mathematical Contest in Modeling

Academic Services

Reviewer (2018) of *IEEE Transactions on Neural Networks and Learning Systems*
Reviewer (2018) of *IEEE Transactions on Image Processing*
Reviewer (2018) of *IEEE Transactions on Multimedia*
Reviewer (2016,2017) of *IEEE Transactions on Circuits and Systems for Video Technology*
Reviewer (2017,2018) of *Pattern Recognition*
Reviewer (2018) of *Neurocomputing*
Reviewer (2018) of *IEEE Signal Processing Letters*
Reviewer (2018) of *Pattern Recognition Letters*
Reviewer (2018) of *IEEE Access*
Reviewer (2017) of *IEEE International Conference on Data Mining*