

Fanghui Liu

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 Technology, China.
2014.06

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, 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**.

Fanghui Liu, Xiaolin Huang, Lei Shi, Jie Yang, and Johan A.K. Suykens: *Stochastic Non-conjugate Variational Inference in Random Features for Indefinite Kernels*. IEEE Transactions on Neural Networks and Learning Systems (TNNLS), **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*