

# Fanghui Liu

## Education

- 2014 - **Ph.D. Pattern Recognition and Intelligent System**, *Institute of Image Processing Pattern Recognition*, Shanghai Jiao Tong University, China.  
advisor: Prof. Jie Yang and Nanji Zhu
- 2010 - 2014 **B.E. Control Science and Engineering**, *School of Astronautics*, Harbin Institute of Technology, China.  
advisor: Prof. Hui Zhao

## Research Interests

Kernel Learning, Visual Tracking and Bayesian Learning

## Selected Publications

### Thesis

- 2014 Applied Mechanism analysis and Modeling of Gyrowheel. B.S. Thesis (in Chinese), School of Astronautics, Harbin Institute of Technology.

### Journal Papers

- TMM17 **F. Liu**, C. Gong, T. Zhou, K. Fu, X. He, and J. Yang: *Robust visual tracking via nonnegative multiple linear coding*. IEEE Transactions on Multimedia (**TMM**), 2017.
- TCSVT17 **F. Liu**, T. Zhou, C. Gong, K. Fu, L. Bai and J. Yang: *Incremental inverse nonnegative local coordinate factorization for visual tracking*. IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2017.
- PRL17 **F. Liu**, T. Zhou, K. Fu and J. Yang: *Kernelized temporal locality learning for real-time visual tracking*. Pattern Recognition Letters (**PRL**), 2017.
- TCYB17 T. Zhou, **F. Liu**, H. Bhaskar and J. Yang: *Robust visual tracking via online discriminative and low-rank dictionary learning*. IEEE Transactions on Cybernetics (**TCYB**), 2017.
- NEUCOM17 T. Zhou, H. Bhaskar, **F. Liu**, J. Yang and P. Cai: *Online learning and joint optimization of combined spatial-temporal models for robust visual tracking*. Neurocomputing, 2017.
- PRL16 **F. Liu**, T. Zhou, K. Fu and J. Yang: *Robust visual tracking via constrained correlation filter coding*. Pattern Recognition Letters (**PRL**), 2016.
- NEUCOM16 **F. Liu**, T. Zhou, K. Fu and J. Yang: *Geometric affine transformation estimation via correlation filter for visual tracking*. Neurocomputing, 2016.
- TCSVT16 T. Zhou, H. Bhaskar, **F. Liu** and J. Yang: *Graph regularized and locality-constrained coding for robust visual tracking*. IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2016.
- SPIC16 C. Ge, K. Fu, **F. Liu**, L. Bai and J. Yang: *Co-saliency detection via inter and intra saliency propagation*. Signal Processing: Image Communication (SPIC), 2016.

## Conference Papers

- MM17 **F. Liu**, X. Huang and J. Yang: *Indefinite kernel logistic regression*. ACM Multimedia (**ACM MM**), 2017. (poster)
- ICONIP17 **F. Liu**, X. Huang, C. Peng, J. Yang and N. Kasabov: *Robust kernel approximation for classification*. International Conference on Neural Information Processing (**ICONIP**), 2017.
- ICONIP17 C. Peng, **F. Liu**, H. Yang, J. Yang and N. Kasabov: *Correlation filters with adaptive memories and fusion for visual tracking*. International Conference on Neural Information Processing (**ICONIP**), 2017.
- ICIP17 T. Zhou, **F. Liu**, H. Bhaskar, J. Yang and P. Cai: *Visual tracking via structural patch-based dictionary pair learning*. IEEE International Conference on Image Processing (**ICIP**), 2017.
- ICONIP16 **F. Liu**, M. Liu, T. Zhou, Y. Qiao and J. Yang: *Incremental robust nonnegative matrix factorization for object tracking*. International Conference on Neural Information Processing (**ICONIP**), 2016. (oral presentation, student travel grant)
- ICIP16 K. Gu, T. Zhou, **F. Liu**, J. Yang and Y. Qiao: *Correlation filter tracking via bootstrap learning*. IEEE International Conference on Image Processing (**ICIP**), 2016. (oral presentation)
- ICASSP16 **F. Liu**, T. Zhou, K. Fu, I. Gu, and J. Yang: *Robust visual tracking via inverse nonnegative matrix factorization*. IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), 2016. (poster)
- ICCVW15 **F. Liu**, T. Zhou, I. Gu and J. Yang: *Visual tracking via nonnegative regularization multiple locality coding*. IEEE International Conference on Computer Vision Workshops (**ICCVW**), 2015. (oral presentation)

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## Selected Project Experience

- 2013–2014 **Research Assistant**, *Servo Control*, Control and Simulation Center, Harbin Institute of Technology.
1. Finite-time control for spacecraft attitude based on terminal sliding mode technique
  2. Test analysis and performance evaluation of the PMSM (Kollmorgen Permanent Magnet Synchronous Motor) driver
- 2014–Present **Researcher**, *Infrared Image Processing*, Institute of Image Processing Pattern Recognition, Shanghai Jiao Tong University.
- Mainly participating several national defence pre-research foundation projects, including but not limited to infrared small target detection, infrared target tracking and recognition, infrared anti-interference technique and multiple object tracking.

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## Selected Honors, Awards and Fellowships

- 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
- 2011-2014 Several Outstanding Student Scholarship (Grade 1,2), awarded by Harbin Institute of Technology

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## Selected Talks

- 2016.03 IEEE International Conference on Acoustics, Speech and Signal Processing (**ICASSP**), Poster, Shanghai, China.

## Professional Services

- TCSVT Reviewer (16,17) of *IEEE Transactions on Circuits and Systems for Video Technology*.
- ICDM Reviewer (17) of *IEEE International Conference on Data Mining*
- CCC Reviewer (16) of *IEEE International Conference on Chinese Control Conference*.