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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, **F. Liu**, H. Bhaskar, J. Yang, H. Zhang and P. Cai: *Online Discriminative Dictionary Learning for Robust Object Tracking.* Neurocomputing, 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

AAAI18	**F. Liu**, X. Huang, C. Gong, J. Yang, and L. Li: *Nonlinear Pairwise Layer and Its Training for Kernel Learning.* The Thirty-Second AAAI Conference on Artificial Intelligence (**AAAI 2018**), 2018.
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)

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.

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

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.*