

JIN GAO

National Laboratory of Pattern Recognition ◊ Institute of Automation Chinese Academy of Sciences

Personal Information

Gender: Male
Date of Birth: 05 October, 1987
Place of Birth: Lvliang, Shanxi, China
Home Address: No. 10 Jinyuan Road, Fengtai District, Beijing 100071
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Research Interests

- ▷ Computer Vision, Pattern Recognition, Machine Learning, Deep Learning, Robot Navigation and Collision Avoidance

Education

Institute of Automation, CAS September 2010 - July 2015
Master-and-Doctoral Program of Computer Vision

- ▷ Specialization in Computer Vision, Machine Learning, Visual Tracking
- ▷ Dissertation: “Graph-based Semi-supervised Learning for Online Visual Tracking”
- ▷ Advisor: Professor Weiming Hu

BeiHang University September 2006 - July 2010
B.S. in Automation Engineering

- ▷ Overall GPA: 1.4/1.5

Employment History

NLPR at Institute of Automation, CAS 2018 - present
Associate Professor *Beijing, China*

- ▷ Team: Video Content Analysis and Cybersecurity Analytics
- ▷ Supervisor: Dr. Weiming Hu

Microsoft Research Asia October 2019 - April 2020
Visiting Researcher *Beijing, China*

- ▷ Team: Media Computing Group
- ▷ Supervisor: Dr. Yan Lu

NLPR at Institute of Automation, CAS 2015 - 2018
Assistant Professor *Beijing, China*

- ▷ Team: Video Content Analysis and Cybersecurity Analytics
- ▷ Supervisor: Dr. Weiming Hu

CIS at Temple University January 2014 - June 2014
Short Term Exchange Visitor *Philadelphia, USA*

- ▷ Supervisor: Dr. Haibin Ling

Honors & Awards

- Youth Innovation Promotion Association Membership, CAS, 2020
- MSRA Visiting Young Faculty Program (StarTrack) Award, 2019
- Merit Student, University of Chinese Academy of Sciences, June 2014. (Top 10%)
- First-Class Award of National Undergraduate Electronic Design Contest in Beijing Division, December 2009. (Top 51/522)
- First-Prize Scholarship of Academic Performance, Beihang University, December 2009.
- First-Prize Scholarship of Science and Technology Competition, Beihang University, December 2009.
- Outstanding Student, Beihang University, 2008, 2009.

Publications

Google Scholar Profile: <https://scholar.google.com/citations?user=z3Z1ZsUAAAAJ&hl=en>

Journal Articles

- **Jin Gao**, Qiang Wang, Junliang Xing, Haibing Lin, Weiming Hu and Stephen Maybank. “Tracking-by-Fusion via Gaussian Process Regression Extended to Transfer Learning,” *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 42(4): 939-955, 2020.
- Weiming Hu, **Jin Gao**, Junliang Xing, Chao Zhang and Stephen Maybank. “Semi-Supervised Tensor-Based Graph Embedding Learning and Its Application to Visual Discriminant Tracking,” *IEEE Trans. on Pattern Analysis and Machine Intelligence (TPAMI)*, 39(1): 172-188, 2017.

Selected Conference Publication

- Zhenbang Li, Qiang Wang, **Jin Gao**, Bing Li and Weiming Hu. “Globally Spatial-Temporal Perception: A Long-term Tracking System,” in *Proc. of IEEE Int’l Conf. on Image Processing (ICIP)*, 2020.
- Zhenbang Li, Qiang Wang, **Jin Gao**, Bing Li and Weiming Hu. “End-To-End Temporal Feature Aggregation for Siamese Trackers,” in *Proc. of IEEE Int’l Conf. on Image Processing (ICIP)*, 2020.
- **Jin Gao**, Weiming Hu and Yan Lu. “Recursive Least-squares Estimator-aided Online Learning for Visual Tracking,” in *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 2020. (**Oral**, Acceptance Rate: 5% for oral presentations and 17% for posters, Computer vision top conference)
- Mengdan Zhang, Qiang Wang, Junliang Xing, **Jin Gao**, Peixi Peng, Weiming Hu and Steve Maybank. “Visual Tracking via Spatially Aligned Correlation Filters Network,” in *Proc. of 15th European Conference on Computer Vision (ECCV)*, 484-500, 2018. (Acceptance Rate: 31.8%, Computer vision top conference)
- Qiang Wang, Zhu Teng, Junliang Xing, **Jin Gao** and Weiming Hu. “Learning Attentions: Residual Attentional Siamese Network for High Performance Online Visual Tracking,” in *Proc. of IEEE Conf. on Computer Vision and Pattern Recognition (CVPR)*, 4854-4863, 2018. (Acceptance Rate: 29.7%, Computer vision top conference)
- Qiang Wang, Mengdan Zhang, Junliang Xing, **Jin Gao**, Weiming Hu and Steve Maybank. “Do not Lose the Details: Reinforced Representation Learning for High Performance Visual Tracking,” in *Proc. of Int’l Joint Conf. on Artificial Intelligence (IJCAI)*, 985-991, 2018.
- Qiang Wang, **Jin Gao**, Mengdan Zhang, Junliang Xing and Weiming Hu. “SPCNet: Scale Position Correlation Network for End-to-End Visual Tracking,” in *Proc. of the Int’l Conf. on Pattern Recognition (ICPR)*, 1803-1808, 2018.

- Mengdan Zhang, Junliang Xing, **Jin Gao**, Xinchu Shi, Qiang Wang and Weiming Hu. “Joint Scale-Spatial Correlation Tracking with Adaptive Rotation Estimation,” in *Proc. of the IEEE Int’l Conf. on Computer Vision Workshop (ICCVW)*, 595-603, 2015.
- Mengdan Zhang, Junliang Xing, **Jin Gao** and Weiming Hu. “Robust Visual Tracking Using Joint Scale-spatial Correlation Filters,” in *Proc. of IEEE Int’l Conf. on Image Processing (ICIP)*, 1468-1472, 2015.
- **Jin Gao**, Haibin Ling, Weiming Hu and Junliang Xing. “Transfer Learning Based Visual Tracking with Gaussian Processes Regression,” *13th European Conference on Computer Vision (ECCV)*, 188-203, 2014. (Acceptance Rate: 25%, Computer vision top conference)
- **Jin Gao**, Junliang Xing, Weiming Hu and Steve Maybank. “Discriminant Tracking Using Tensor Representation with Semi-supervised Improvement,” in *Proc. of the IEEE Int’l Conf. on Computer Vision (ICCV)*, 1569-1576, 2013. (Acceptance Rate: 27.9%, Computer vision top conference)
- **Jin Gao**, Junliang Xing, Weiming Hu and Xiaoqin Zhang. “Graph Embedding Based Semi-supervised Discriminative Tracker,” in *Proc. of the IEEE Int’l Conf. on Computer Vision Workshop (ICCVW)*, 145-152, 2013.
- Junliang Xing, **Jin Gao**, Bing Li, Weiming Hu and Shuicheng Yan. “Robust Object Tracking with Online Multi-lifespan Dictionary Learning,” in *Proc. of the IEEE Int’l Conf. on Computer Vision (ICCV)*, 665-672, 2013. (Acceptance Rate: 27.9%, Computer vision top conference)
- **Jin Gao**, Junliang Xing, Weiming Hu, Xiaoqin Zhang and Ruiguang Hu. “Multi-object Tracking Under Occlusion Using Dual-Mode Graph Embedding,” in *Proc. of the 2nd IAPR Asian Conference on Pattern Recognition (ACPR)*, 2013.

Contracts and Grants

- Jin Gao. (Jan. 2020 - Dec. 2023) “Application-Oriented Online Real-time Object Tracking for Wheeled Mobile Robot Systems,” *National Nature Science Foundation of China*, CNY 721,700.
- Jin Gao. (Jan. 2017 - Dec. 2019) “Atkinson-Shiffrin Memory Model Inspired Research on Online Visual Tracking,” *National Nature Science Foundation of China*, CNY 247,800.
- Jin Gao. (Mar. 2017 - Mar. 2019) “Image Processing Based on Gaussian Processes Regression,” *ForwardX Robotics LLC.*, CNY 200,000.

Professional Activities

Conference Reviewers

- IEEE Conf. on Computer Vision and Pattern Recognition (CVPR), 2016-2020
- Int’l Conf. on Computer Vision (ICCV), 2017-2019 (biannual)
- Asian Conf. on Computer Vision (ACCV), 2018 (biannual)
- European Conf. on Computer Vision (ECCV), 2016-2020 (biannual)
- British Machine Vision Conference (BMVC), 2019-2020
- Chinese Conference on Pattern Recognition and Computer Vision (PRCV), 2019

Journal Review

- IEEE Trans. on Pattern Analysis and Machine Intelligence (**T-PAMI**)
- IEEE Trans. on Image Processing (**T-IP**)
- IEEE Trans. on Circuits and Systems for Video Technology (**T-CSVT**)
- IEEE Trans. on Systems, Man, and Cybernetics - Part B: Cybernetics (**T-CYB**)
- IEEE Access
- Computer Vision and Image Understanding (**CVIU**)

- Pattern Recognition (**PR**)
- Neurocomputing
- Soft Computing

Travel History

Australia	2013
U.S.	2014, 2018
Philippines	2016
North Mariana Islands	2016

Interests

Professional	Football, Video Processing
Personal:	Swimming, Singing, Traveling, Cooking, Fitness