Heng Fan

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Research Interests

Computer Vision, Machine Learning and Medical Image Analysis

Education

Ph.D., Department of Computer Science, Stony Brook University, Stony Brook, NY, USA, 2021
- Dissertation: "Algorithms and Benchmarks for Robust Visual Object Tracking"
- Advisor: Professor Haibin Ling

B.S., College of Informatics, Huazhong Agricultural University, Wuhan, Hubei, China, 2013
- Major in Computer Science and Technology

Employment History

- Assistant Professor, University of North Texas — Denton, TX USA, 2021−now
  Department of Computer Science and Engineering

Honors and Awards

- CVPR Outstanding Reviewer Award, 2019
- National Scholarship (graduate level), Huazhong Agricultural University, 2015
- National Motivational Scholarship (undergraduate level), Huazhong Agricultural University, 2012
- National Scholarship (undergraduate level), Huazhong Agricultural University, 2011

Publications

Google Scholar profile: https://scholar.google.com/citations?user=MVQYJiMAAAAJ

Selected Journal Articles

[1] Ying Liu, Heng Fan, Xiaohui Yuan, and Jinhai Xiang, "GL-GAN: Adaptive Global and Local Bilevel Optimization for Generative Adversarial Network," *Pattern Recognition* (**PR**), 2021, in press.

[2] Pengfei Zhu, Longyin Wen, Dawei Du, Xiao Bian, Heng Fan, Qinghua Hu, and Haibin Ling, "Detection and Tracking Meet Drones Challenge," *IEEE Transactions on Pattern Analysis and Machine Intelligence.* (**T-PAMI**), 2021, in press.

[3] Heng Fan, Hexin Bai, Liting Lin, Fan Yang, Peng Chu, Ge Deng, Sijia Yu, Harshit, Mingzhen Huang, Juehuan Liu, Yong Xu, Chunyuan Liao, Lin Yuan, and Haibin Ling, "LaSOT: A High-quality Large-scale Single Object Tracking Benchmark," *International Journal of Computer Vision* (**IJCV**), 129: 439–461, 2021.

[4] Ying Liu, Heng Fan, Fuchuan Ni, and Jinhai Xiang, "ClsGAN: Selective Attribute Editing Based On Classification Adversarial Network," *Neural Networks* (**NN**), 133: 220-228, 2021.

[5] Qin Zhou, Heng Fan, Hua Yang, Hang Su, Shibao Zheng, Shuang Wu, and Haibin Ling, "Robust and Efficient Graph Correspondence Transfer for Person Re-identification," *IEEE Transactions on Image Processing* (**T-IP**), 30: 1623-1638, 2021.

[6] Heng Fan and Haibin Ling, "Parallel Tracking and Verifying," *IEEE Transactions on Image Processing* (**T-IP**), 28(8): 4130-4144, 2019.

[7] Heng Fan, Xue Mei, Danil Prokhorov, and Haibin Ling, "Multi-level Contextual RNNs with Attention Model for Scene Labeling," *IEEE Transactions on Intelligent Transportation Systems* (**T-ITS**), 19(11): 3475-3485, 2018.

[8] Heng Fan and Jinhai Xiang, "Robust Visual Tracking with Multitask Joint Dictionary Learning," *IEEE Transactions on Circuits and Systems for Video and Technology* (**T-CSVT**), 27(5): 1018-1030, 2017.

Selected Conference Articles

[9] Heng Fan, Halady Akhilesha Miththanthaya, Harshit, Siranjiv Ramana Rajan, Xiaoqiong Liu, Zhilin Zou, Yuewei Lin, and Haibin Ling, "Transparent Object Tracking Benchmark," *IEEE International Conference on Computer Vision* (**ICCV**), 2021.

[10] Heng Fan and Haibin Ling, "CRACT: Cascaded Regression-Align-Classification for Robust Visual Tracking," *IEEE/RSJ International Conference on Intelligent Robots and Systems* (**IROS**), 2021.

[11] Heng Fan, Fan Yang, Peng Chu, Yuewei Lin, Lin Yuan, and Haibin Ling, "TracKlinic: Diagnosis of Challenge Factors in Visual Tracking," *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2021.

[12] Heng Fan and Haibin Ling, "MART: Motion-Aware Recurrent Neural Network for Robust Visual Tracking," *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2021.

[13] Fan Yang, Heng Fan, Peng Chu, Erik Blasch,, and Haibin Ling, "Clustered Object Detection in Aerial Images," *IEEE International Conference on Computer Vision* (**ICCV**), 2019.

[14] Heng Fan and Haibin Ling, "Siamese Cascaded Region Proposal Networks for Real-Time Visual Tracking," *IEEE International Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

[15] Heng Fan, Liting Lin, Fan Yang, Peng Chu, Ge Deng, Sijia Yu, Hexin Bai, Yong Xu, Chunyuan Liao, and Haibin Ling, "LaSOT: A High-quality Benchmark for Large-scale Single Object Tracking," *IEEE International Conference on Computer Vision and Pattern Recognition* (**CVPR**), 2019.

[16] Heng Fan, Peng Chu, Longin Jan Latecki, and Haibin Ling, "Scene Parsing via Dense Recurrent Neural Networks with Attentional Selection," *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2019.

[17] Peng Chu, Heng Fan, Chiu C. Tan, and Haibin Ling, "Online Multi-Object Tracking with Instance-Aware Tracker and Dynamic Model Refreshment," *IEEE Winter Conference on Applications of Computer Vision* (**WACV**), 2019.

[18] Qin Zhou, Heng Fan, Shibao Zheng, Hang Su, Xinzhe Li, Shuang Wu, and Haibin Ling, "Graph correspondence transfer for person re-identification," *AAAI Conference on Artificial Intelligence* (**AAAI**), 2018.

[19] Heng Fan and Haibin Ling, "Parallel Tracking and Verifying: A Framework for Real-Time and High Accuracy Visual Tracking," *IEEE International Conference on Computer Vision* (**ICCV**), 2017.

[20] Heng Fan and Jinhai Xiang, "Robust Visual Tracking via Local-Global Correlation Filter," *AAAI Conference on Artificial Intelligence* (**AAAI**), 2017.

[21] Heng Fan and Haibin Ling, "SANet: Structure-Aware Network for Visual Tracking," *IEEE International Conference on Computer Vision and Pattern Recognition* (**CVPR**) *Workshops*, 2017.

Teaching

- CSCE 5218 & 4930 (combined), *Deep Learning*, University of North Texas, Department of Computer Science and Engineering, Spring 2022.
- CSCE 3110, *Data Structures and Algorithms*, University of North Texas, Department of Computer Science and Engineering, Fall 2021.

Advising

PhD Committee Member

- Ziruo Yi
- Himanshu Sharma
- Md Marufi Rahman

Professional Activities

Conference Organizing Committee

- Area Chair, IEEE Winter Conference on Applications of Computer Vision (**WACV**), 2022
- Co-organizer, International Workshop on Computer Vision for UAVs in **ECCV**, 2020

Conference Program Committee or Reviewers

- Neural Information Processing Systems (**NeurIPS**) - Datasets and Benchmarks Track, 2021
- IEEE Winter Conference on Applications of Computer Vision (**WACV**), 2021, 2022
- European Conference on Computer Vision (**ECCV**), 2020
- AAAI Conference on Artificial Intelligence (**AAAI**), 2020, 2021, 2022
- IEEE International Conference on Computer Vision (**ICCV**), 2019
- IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019, 2020, 2021
- IAPR International Conference on Machine Vision Applications (**MVA**), 2016

Journal Reviewers

- IEEE Transactions on Pattern Analysis and Machine Intelligence (**T-PAMI**)
- IEEE Transactions on Circuits and Systems for Video Technology (**T-CSVT**)
- Journal of Visual Communication and Image Representation (**JVCI**)
- IEEE Transactions on Intelligent Transportation Systems (**T-ITS**)
- IEEE Transactions on Image Processing (**T-IP**)
- IEEE Transactions on Multimedia (**T-MM**)
- Robotics and Autonomous Systems (**RAS**)
- IEEE Signal Processing Letters (**SPL**)
- ACM Computing Surveys (**CUSR**)
- The Visual Computer (**TVC**)
- Knowledge-Based Systems
- Pattern Recognition (**PR**)
- Signal Processing
- Neurocomputing

Talks

- "Algorithms and Benchmark for Robust Visual Object Tracking", in Department of Computer Science, University of Alabama at Birmingham, Birmingham, AL USA, 2021. (Virtual)
- "Algorithms and Benchmark for Robust Visual Object Tracking", in Department of Computer Science and Engineering, University of North Texas, Denton, TX USA, 2021. (Virtual)
- "Algorithms and Benchmark for Robust Visual Object Tracking", in Department of Computer Science, University of North Carolina Wilmington, Wilmington, NC USA, 2021. (Virtual)
- "Algorithms and Benchmark for Robust Visual Object Tracking", in Department of Computer Science, The University of Texas at El Paso, El Paso, TX USA, 2021. (Virtual)

- "Algorithms and Benchmark for Robust Visual Object Tracking", in Department of Computer Science, Kennesaw State University, Kennesaw, GA USA, 2021. (Virtual)
- "Towards Real-Time and High Accuracy Visual Object Tracking", in Department of Computer Science, Rowan University, Glassboro, NJ USA, 2019.
- "SANet: Structure-Aware Network for Visual Tracking", in Deep Vision workshop at CVPR, Honolulu, HI USA, 2017.