

Heng Fan

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RESEARCH INTERESTS

Computer Vision, Machine Learning and Medical Image Analysis

EDUCATION

- Ph.D. student, Department of Computer Science, Stony Brook University, USA 2020–2021 (expected)
- Advisor: Professor Haibin Ling
- Ph.D. student, Department of Computer & Information Sciences, Temple University, USA 2016–2020
- Advisor: Professor Haibin Ling
- M.E. student, Department of Engineering, Huazhong Agricultural University, China 2013–2016
- Advisor: Professor Zhongmin Chen and Professor Jinhai Xiang
(Courses completed)
- B.S., College of Informatics, Huazhong Agricultural University, China 2009–2013
- Major in Computer Science and Technology

RESEARCH EXPERIENCE

- Graduate Assistant, Stony Brook University Stony Brook, NY USA, 2020–present
- Graduate Assistant, Temple University Philadelphia, PA USA, 2016–2020
- Research Intern, HiScene Shanghai, China, 2017–2017

HONORS AND AWARDS

- CVPR Outstanding Reviewer Award 2019
- National Scholarship (graduate level) 2015
- The 2nd Prize in the 10th Mathematical Contest in Modeling for Graduate 2013
- Honorable Mention in Mathematical Contest in Modeling (USA) 2012
- National Motivational Scholarship (undergraduate level) 2012
- The 2nd Prize in the 8th Mathematical Contest in Modeling for Graduate 2011
- National Scholarship (undergraduate level) 2011

PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=MVQYJiMAAAAJ>
1254 citations; h-index=13; i10-index=15 (by Oct. 2020)

Selected Papers (2 CVPR, 2 ICCV, 2 AAAI, 4 WACV; 1 IJCV, 2 T-IP, 1 T-ITS, 1 T-CSVT, 1 NN)

- [1] **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.
- [2] **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.
- [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)*, 2020. (accepted)
- [4] Ying Liu, **Heng Fan**, Fuchuan Ni, and Jinhai Xiang, “ClsGAN: Selective Attribute Editing Based On Classification Adversarial Network,” *Neural Networks (NN)*, 2020. (accepted)
 - [5] Jiaxiang Ren, **Heng Fan**, Jie Yang, and Haibin Ling, “Detection of Trabecular Landmarks for Osteoporosis Prescreening in Dental Panoramic Radiographs,” *IEEE Engineering in Medicine and Biology Society (EMBC)*, 2020.
 - [6] 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)*, 2020. (in press)
 - [7] Zhigang Chang, Qin Zhou, **Heng Fan**, Hang Su, Hua Yang, Shibao Zheng, and Haibin Ling, “Weighted Bilinear Coding over Salient Body Parts for Person Re-identification,” *Neurocomputing*, 407: 454-464, 2020.
 - [8] **Heng Fan** and Haibin Ling, “Parallel Tracking and Verifying,” *IEEE Transactions on Image Processing (T-IP)*, 28(8): 4130-4144, 2019.
 - [9] 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.
 - [10] **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.
 - [11] **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.
 - [12] **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. (Oral)
 - [13] 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. (Oral)
 - [14] **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.
 - [15] Qin Zhou, **Heng Fan**, Shibao Zheng, Hang Su, Xinzhe Li, Shuang Wu, and Haibin Ling, “Scene Parsing via Dense Recurrent Neural Networks with Attentional Selection,” *AAAI Conference on Artificial Intelligence (AAAI)*, 2018. (Oral)
 - [16] **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.
 - [17] **Heng Fan** and Haibin Ling, “SAnet: Structure-Aware Network for Visual Tracking,” *IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2017. (Oral)
 - [18] **Heng Fan** and Jinhai Xiang, “Robust Visual Tracking via Local-Global Correlation Filter,” *AAAI Conference on Artificial Intelligence (AAAI)*, 2017. (Oral)
 - [19] **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.

Other Papers

- [20] Jianqing Jia, Semir Elezovikj, **Heng Fan**, Shuojin Yang, Jing Liu, Wei Guo, Chiu C. Tan, and Haibin Ling, “Semantic-Aware Label Placement for Augmented Reality in Street View,” *The Visual*

Computer (TVC), 2020. (in press)

- [21] **Heng Fan**, Lu Xu, and Jinhai Xiang, “Complementary Siamese Networks for Robust Visual Tracking,” *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2019.
- [22] Lu Xu, **Heng Fan**, and Jinhai Xiang, “Hierarchical Multi-task Networks for Race, Gender and Facial Attractiveness Recognition,” *IEEE International Conference on Image Processing (ICIP)*, 2019.
- [23] **Heng Fan**, Jinhai Xiang, Guoliang Li, and Fuchuan Ni, “Robust Visual Tracking via Deep Discriminative Model,” *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2017.
- [24] Haiqiang Zuo, **Heng Fan**, Erik Blasch, and Haibin Liang, “Combining Convolutional and Recurrent Neural Networks for Human Skin Detection,” *IEEE Signal Processing Letters (SPL)*, 24(3): 289-293, 2017.
- [25] **Heng Fan**, Jinhai Xiang, and Liang Zhao, “Robust Visual Tracking via Bag of Superpixels,” *Multimedia Tools and Applications (MTAP)*, 75: 8781-8798, 2016.
- [26] **Heng Fan**, Xue Mei, Danil Prokhorov, and Haibin Ling, “Cross Datasets Vegetation Detection with Spatial Prior and Local Context,” *IEEE Intelligent Vehicles Symposium (IV)*, 2016.
- [27] **Heng Fan**, Jinhai Xiang, Honghong Liao, and Xiaoping Du, “Robust Tracking based on Local Structural Cell Graph,” *Journal of Visual Communication and Image Representation (JVCI)*, 31: 54-63, 2015.

TEACHING EXPERIENCE

- CIS 2107, *Computer System and Low-Level Programming*, Department of Computer & Information Sciences, Temple University, Fall 2019.
- CIS 2168, *Data Structures*, Department of Computer & Information Sciences, Temple University, Spring 2019.
- CIS 2168, *Data Structures*, Department of Computer & Information Sciences, Temple University, Fall 2018.

ADVISING

Master Student Supervision

- Harshit, visual object tracking (2020-present)
- Halady Miththanthaya, visual object tracking (2020-present)
- Siranjiv Ramana Rajan, visual object tracking (2020-present)

PROFESSIONAL ACTIVITIES

Journal Reviewer for

- 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**)
- International Journal of Electronics and Communications
- IEICE Transactions on Information and Systems
- IEEE Transactions on Image Processing (**T-IP**)
- IEEE Signal Processing Letters (**SPL**)
- The Visual Computer (**TVC**)
- Knowledge-Based Systems

- Pattern Recognition (**PR**)
- Signal Processing
- Neurocomputing

Conference Organization for

- Co-organizer, International Workshop on Computer Vision for UAVs in ECCV, 2020

Conference Program Committee / Reviewer for

- IEEE Winter Conference on Applications of Computer Vision (**WACV**), 2021
- European Conference on Computer Vision (**ECCV**), 2020
- AAAI Conference on Artificial Intelligence (**AAAI**), 2020, 2021
- 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

PRESENTATIONS AND TALKS

- “Towards Real-Time and High Accuracy Visual Object Tracking”, in Department of Computer Science, Rowan University, New Jersey USA, 2019.
- “SANet: Structure-Aware Network for Visual Tracking”, in IEEE International Conference on Computer Vision and Pattern Recognition Workshop, Honolulu, Hawaii USA, 2017.

SKILLS

- Deep learning tools: Caffe/PyTorch/MatConvNet
- Programming language: C/C++/Python/Matlab/Java

REFERENCES

- Ph.D. Advisor: Haibin Ling
Empire Innovation Professor, Department of Computer Science, Stony Brook University
Email: hling@cs.stonybrook.edu
- Jie Yang
Professor, Division of Oral and Maxillofacial Radiology, School of Dentistry, Temple University
Email: jie.yang@temple.edu
- Yuewei Lin
Computational Scientist, Computational Science Initiative, Brookhaven National Laboratory
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