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−present
- 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
- GPA: 3.67/4.0, Rank: 3/100

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
1055 citations; **h-index=13**; **i10-index=14** (by Aug. 2020)

Selected Papers (2 CVPR, 2 ICCV, 2 AAAI, 3 WACV; 2 T-IP, 1 T-ITS, 1 T-CSVT)

[1] **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.

[2] 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.

[3] 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)

[4] 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.

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

[6] 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.

[7] **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.

[8] **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.

[9] **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**)

[10] 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**)

[11] **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.

[12] 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**)

[13] **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.

[14] **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**)

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

[16] **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

[17] 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)

[18] **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.

[19] 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.

[20] **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.

[21] 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.

[22] **Heng Fan**, Jinhai Xiang, and Liang Zhao, "Robust Visual Tracking via Bag of Superpixels," *Multimedia Tools and Applications* (**MTAP**), 75: 8781-8798, 2016.

[23] **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.

[24] **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.

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

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
- IEEE International Conference on Computer Vision (**ICCV**), 2019
- IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019, 2020
- 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