
Haoyu Ren

Senior Engineer in Samsung Semiconductor Insistute, San Diego, CA, US

mobile: +1-619-573-8410

email: haoyu.ren@samsung.com hra15@sfu.ca

homepage: <http://www.sfu.ca/~hra15/>

Research Interest

- Computer Vision
 - o object detection and recognition
 - o local feature design and analysis
 - o face recognition, gender/age/expression recognition
 - o depth estimation
 - o super resolution
- Machine Learning
 - o Boosting family algorithms
 - o CNN

Education

- 2013.9-2016.8 PhD at Computing Science Department, Simon Fraser University, Vancouver, Canada.
- 2007.9-2010.7 Master at Institute of Computing Technology, Chinese Academy of Sciences (CAS), Beijing, China
- 2003.9-2007.8 Bachelor at Electronic Engineering department in TsingHua University, Beijing, China

Full time working

- 2016.9-now Senior Engineer in Samsung Semiconductor Inc, San Diego, US
- 2011.6-2013.8 Multimedia Researcher in Samsung R&D, Beijing, China
- 2010-2011 HCI Researcher in Lenovo Research, Beijing, China

Publications

- **Haoyu Ren** and Ze-Nian Li. Object Detection Usng Boosted Local Binaries. Pattern Recognition 2016, (PR), 60, 793-801.
- **Haoyu Ren** and Ze-Nian Li. Object Detection Using Generalization and Efficiency Balanced Co-occurrence Features. In IEEE International Conference on Computer Vision (ICCV), 2015
- **Haoyu Ren** and Ze-Nian Li. Object Recognition using Deformable Edge Set. In IEEE International Conference on Image Processing (ICIP), 2015
- **Haoyu Ren** and Ze-Nian Li. Object Tracking Using Structure-Aware Binary Features. In IEEE International Conference on Multimedia Expo (ICME), 2015
- **Haoyu Ren** and Ze-Nian Li. Basis Mapping Based Boosting for Object Detection. In IEEE Conference on

Computer Vision and Pattern Recognition (**CVPR**), 2015

- **Haoyu Ren** and Ze-Nian Li. Age estimation based on Complexity-Aware Local features. In Asian Conference on Computer Vision (**ACCV**), 2014
- **Haoyu Ren** and Ze-Nian Li. Object Detection Using Edge Histogram of Oriented Gradient. In IEEE International Conference on Image Processing (**ICIP**), 2014, oral
- **Haoyu Ren** and Ze-Nian Li. Gender recognition using Complexity-Aware Local features. In IEEE International Conference on Pattern Recognition (**ICPR**), 2014
- **Haoyu Ren** and Ze-Nian Li. Boosted Local Binaries for Object detection. In IEEE International Conference on Multimedia Expo (**ICME**), 2014, oral
- Wei Zheng, Hong Chang, Luhong Liang, **Haoyu Ren**, Shiguang Shan, Xilin Chen. Strip Features for Fast Object Detection. IEEE T. Cybernetics, 43(6), 1898-1912 (2013)
- Xiaopeng Hong, Guoying Zhao, **Haoyu Ren**, and Xilin Chen. Efficient boosted weak classifiers for object detection. Image Analysis, 205-214, 2013
- **Haoyu Ren**, Xiaopeng Hong, C.K. Heng, Luhong Liang, and Xilin Chen. A Sample Pre-mapping Enhancing Boosting in Object Detection. In IEEE International Conference on Pattern Recognition (ICPR), 2010
- **Haoyu Ren**, C.K. Heng, W. Zheng, L. Liang, and X. Chen. Fast Object Detection using Boosted Co-occurrence Histogram of Oriented Gradients. In IEEE International Conference on Image Processing (ICIP), 2010

Teaching

- Teaching Assistant of Introduction to Computer Programming (CMPT127), Simon Fraser University, 2015
- Teaching Assistant of Data Structures and Programming (CMPT 225), Simon Fraser University, 2013

INDUSTRY PROJECTS

- CNN based depth estimation, 2016.9-2016.12
- Super resolution using DNN, 2016.9-2016.12
- Gender/Age/Expression recognition on mobile devices, Samsung, 2012.6-2013.8
- 3D Face avatar, Samsung, 2012.1-2013.8
- Face detection, tracking and recognition on mobile devices, Samsung, 2012.1-2013.3
- Video background substitution and stylization, Samsung, 2011.6-2012.6
- Gesture interaction and recognition, Lenovo, 2010.12-2011.6
- 3D camera research, Lenovo, 2010.6-2010.12

PATENTS

- **Ren Haoyu**, Wang Tianshu, Liu Junfeng: Transmission processing method and apparatus electronic device. September 20, 2012: WO/2012/122939
- **Ren Haoyu**, Gao Yuan: Operation control method and device and electronic equipment. Lenovo September 26, 2012: CN201110071099

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- **Ren Haoyu**, Wang Tianshu: Method and device for transmission processing and electronic equipment. Lenovo September 19, 2012: CN201110061386
 - **Ren Haoyu**, Wang Tianshu, Liu Junfeng: Transmission processing method, device and electronic equipment. Lenovo November 21, 2012: CN201110125806
 - He Zhiqiang, Wang Xiyang, Wang Tianshu, **Ren Haoyu**: Information processing method and server. Lenovo July 11, 2012: CN201010605255
 - **Ren Haoyu**, Wang Lin, Xiong Junjun: Method and device for extracting video objects. Beijing Samsung Communication Technology Research, Samsung Electronics July 25, 2012: CN201210017560

PROGRAMMING

- C/C++, Matlab, OpenCV, Android, Java

AWARDS

- SFU Graduate Fellowship, Dean of Graduate Studies, Simon Fraser University, 2014, 2015
- SFU President Scholarship, Simon Fraser University, 2015
- SFU Gradient Entrance Award, Dean of Graduate Studies, 2013
- Samsung Innovation Silver Award, 2012
- Excellent Master Graduate Student, Chinese Academy of Science, 2010
- Excellent Bachelor Thesis, TsingHua University, 2007
- First Prize of China National Mathematical Olympiad in Senior, 2003 (Top 5 in Beijing)
- First Xin Miao Prize of China Undergraduate Mathematical Contest in Modeling, 2003
- Second Prize of China National Chemical Olympiad in Senior, 2003
- Second Prize of China National Mathematical Olympiad in Senior, 2002

Professional Service

- Reviewer for IEEE Transaction of Pattern Analysis and Machine Intelligence (PAMI), 2015
- Reviewer for Pattern Recognition (PR), 2014, 2015, 2016
- Reviewer for IEEE Transaction on Image Processing (TIP), 2014, 2015, 2016
- Reviewer for IEEE International Conference on Multimedia and Expo (ICME), 2014, 2015
- Reviewer for International Journal of Image and Graphics (IJIG), 2014
- Reviewer for International Conference of Pattern Recognition (ICPR), 2014