Chaoyang Wang

MSR student of CMU Robotics Institute
Interested in computer vision & machine learning.

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Education

- **Carnegie Mellon University** — M.S. in robotics
  Supervised by Prof. Simon Lucey — *2016 - 2018*
- **Shanghai Jiao Tong University** — M.S. & B.E. in CS
  Member of ACM Teaching Reform Class(top 28 students selected) — *2009 - 2016*

Publications

1. "Learning Depth from Monocular Videos using Direct Methods", **submitted to CVPR** 2018,
   Chaoyang Wang, *Jose Miguel Buenaposada, Rui Zhu, Simon Lucey.*
2. "Deep-LK for Efficient Adaptive Object Tracking", **submitted to ICRA** 2018,
   Chaoyang Wang, *Hamed Kiani, Chen-Hsuan Lin, Simon Lucey.*
3. "Semantic Photometric Bundle Adjustment on Natural Sequences", **submitted to CVPR** 2018,
   Rui Zhu, ***Chaoyang Wang***, *Ziyan Wang, Simon Lucey.*
4. "Object-Centric Photometric Bundle Adjustment with Deep Shape Prior", **WACV** 2018,
   Rui Zhu, ***Chaoyang Wang***, *Chen-Hsuan Lin, Simon Lucey.*
5. "Rethinking Reprojection: Closing the Loop for Pose-aware Shape Reconstruction from a Single Image", **ICCV**(**spotlight**) 2017,
   Rui Zhu, Hamed Kiani, ***Chaoyang Wang***, *Simon Lucey.*
6. "Object Proposal by Multi-branched Hierarchical Segmentation", **CVPR** 2015,
   Chaoyang Wang, *Long Zhao, Shuang Liang, Liqing Zhang, Jinyuan Jia, Yichen Wei,*
7. "Binocular Photometric Stereo Acquisition and Reconstruction for 3D Talking Head Applications", **INTERSPEECH** 2013,
   Chaoyang Wang, *Lijuan Wang, Yasuyuki Matsushita, Bojun Huang, Magnetro Chen, Frank K. Soong.*

Research Experience

- **Carnegie Mellon University, CI2CV Lab** — 09/2016 - present
  Advisor: Prof. Simon Lucey, collaborate with Prof. Hongdong Li
  - Incorporated direct visual SLAM techniques for the purpose of unsupervised learning a monocular depth estimator from ego-centric videos. Achieved comparable accuracy compared to state of the arts trained with supervision.
  - Proposed a Deep-LK object tracker, which achieves comparable accuracy compared to state of the arts, while running at 100fps on GPU, and over 20fps on CPU.
  - Trained a 3D object reconstruction network with supervision from both synthetic data and objects' silhouette in real-life photos. This work was the first of its kind able to predict 3D voxel representation of an object together with it's pose.
- **Microsoft Research Asia, Visual Computing Group** — 07/2014-05/2015
  Advisor: Dr. Yichen Wei

- Proposed a multi-branch hierarchical region proposal algorithm to speed up and improve object detection.
- Developed a cost-sensitive learning algorithm to optimize the face detection and facial landmark regression pipeline, sped up by more than 40% with minor accuracy reduction.

- **Brain-like Computing&Machine Intelligence Lab** 09/2013-05/2014
Advisor: Prof. Liqing Zhang
  - Learning discriminative object part detectors from multi-layer CNN features.
  - Line-of-interest pedestrian counting in surveillance video.

- **Microsoft Research Asia, Speech Group** 07/2012 - 03/2013
Advisor: Prof. Frank K. Soong, Prof. Yasuyuki Matsushita, Dr. Lijuan Wang
  - Worked on photo-realistic text-to-speech talking head synthesis.
  - Built a binocular photometric stereo system for facial performance data acquisition. The system is able to reconstruct accurate 3D human face with fine surface details such as wrinkles.

Recent Awards, Grants & Honours

National Scholarship (top 2%) 2015
Microsoft Research Asia Excellent Internship Award 2015
First-class Academic Scholarship, Shanghai Jiao Tong Univ(top 10%). . . . . 2013, 2014 & 2015
Microsoft Research Asia Young Fellowship(3 students each school) 2012
Second Prize in Physics Contest for Shanghai College Students 2010

Professional Activities

- Reviewer for ICRA 2018 and 3DV 2017.
- Teaching assistant for "CS377: Project Workshop of Database System", 2013.
- Student volunteer for IEEE FG 2013.

Programming Skills

- C, C++, Matlab, Java, Python, Lua

English Test Scores

- TOFEL: 106 (S:22, W:28, L:29, R:27)
- GRE: 323 (V:153, Q:170), AW:3.5