

Chen-Hsuan Lin

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Research Interests

Computer vision – image/object alignment, 3D vision

Deep learning – generative modeling, unsupervised learning

Education

Carnegie Mellon University (CMU), Pittsburgh, PA, USA

Aug. 2017 – present

Ph.D. in Robotics

- Advisor: Prof. Simon Lucey

Carnegie Mellon University (CMU), Pittsburgh, PA, USA

Aug. 2014 – Aug. 2016

M.S. in Robotics (GPA: 4.05/4.3)

- M.S. thesis: The Conditional Lucas & Kanade Algorithm [7]
- Selected courses: Visual Learning and Recognition (A+), Computer Vision (A), Machine Learning (A), Convex Optimization (A), Intermediate Statistics (A), Mathematics Fundamentals for Robotics (A)

National Taiwan University (NTU), Taipei, Taiwan

Sep. 2009 – Jun. 2013

B.S. in Electrical Engineering (GPA: 3.92/4.3)

Publications

Conference Papers

- [1] **ST-GAN: Spatial Transformer Generative Adversarial Networks for Image Compositing**
Chen-Hsuan Lin, Simon Lucey, Ersin Yumer, Oliver Wang, and Eli Shechtman
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018
- [2] **Deep-LK for Efficient Adaptive Object Tracking**
Chaoyang Wang, Hamed Kiani Galoogahi, **Chen-Hsuan Lin**, and Simon Lucey
IEEE International Conference on Robotics and Automation (ICRA), 2018
- [3] **Learning Efficient Point Cloud Generation for Dense 3D Object Reconstruction**
Chen-Hsuan Lin, Chen Kong, and Simon Lucey
AAAI Conference on Artificial Intelligence (AAAI), 2018 (oral presentation)
- [4] **Object-Centric Photometric Bundle Adjustment with Deep Shape Prior**
Rui Zhu, Chaoyang Wang, **Chen-Hsuan Lin**, Ziyang Wang, and Simon Lucey
IEEE Winter Conference on Applications of Computer Vision (WACV), 2018
- [5] **Inverse Compositional Spatial Transformer Networks**
Chen-Hsuan Lin and Simon Lucey
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017 (oral presentation)
- [6] **Using Locally Corresponding CAD Models for Dense 3D Reconstructions from a Single Image**
Chen Kong, **Chen-Hsuan Lin**, and Simon Lucey
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
- [7] **The Conditional Lucas & Kanade Algorithm**
Chen-Hsuan Lin, Rui Zhu, and Simon Lucey
European Conference on Computer Vision (ECCV), 2016

Research Experiences

- Carnegie Mellon University**, Pittsburgh, PA, USA Aug. 2017 – present
Graduate Research Assistant (*advisor: Prof. Simon Lucey*)
- Deep learning for 3D point cloud recognition
- Adobe Research**, Seattle, WA, USA Apr. 2017 – Aug. 2017
Research Intern (*advisor: Dr. Eli Shechtman, Dr. Oliver Wang, Dr. Ersin Yumer*)
- Realistic geometric corrections for image compositing [1]
- Carnegie Mellon University**, Pittsburgh, PA, USA Aug. 2016 – Mar. 2017
Research Assistant (*advisor: Prof. Simon Lucey*)
- Dense 3D object reconstruction from single images with point clouds [3]
 - Learning spatial transformations for alignment within deep networks [5]
- Carnegie Mellon University**, Pittsburgh, PA, USA Sep. 2014 – Aug. 2016
Graduate Research Assistant (*advisor: Prof. Simon Lucey*)
- Non-rigid CAD model alignment for 3D reconstruction [6]
 - Learning image/object alignment with little training data [7]
- LuSee LLC.**, Pittsburgh, PA, USA May 2015 – Aug. 2015
Research Intern
- Dense 3D reconstruction of faces from 2D self-captured videos
- National Taiwan University**, Taipei, Taiwan Sep. 2011 – Aug. 2013
Undergraduate Research Assistant (*advisor: Prof. Homer H. Chen*)
- Perceptual rate-distortion optimization for video coding

Academic Talks

- Learning Efficient Point Cloud Generation for Dense 3D Object Reconstruction** [3] Feb. 2018
AAAI Conference on Artificial Intelligence (AAAI), 2018
- Inverse Compositional Spatial Transformer Networks** [5] Jul. 2017
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017
- The Conditional Lucas & Kanade Algorithm** [7] Jun. 2016
M.S. thesis presentation, Carnegie Mellon University

Teaching Experiences

- Head Teaching Assistant**, Carnegie Mellon University, USA Aug. 2017 – Dec. 2017
Computer Vision (CMU 16-720), Fall 2017
- Instructors: Prof. Srinivasa Narasimhan, Prof. Simon Lucey, Prof. Yaser Sheikh
- Teaching Assistant**, Carnegie Mellon University, USA Aug. 2015 – Dec. 2015
Designing Computer Vision Apps (CMU 16-423), Fall 2015
- Instructor: Prof. Simon Lucey

Academic Services

Journal Reviewer

- Machine Vision and Applications (MVAP), 2017
- IEEE Transactions on Affective Computing (TAFFC), 2015

Conference Reviewer

- European Conference on Computer Vision (ECCV), 2018
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018
- IEEE International Symposium on Circuits and Systems (ISCAS), 2014

Industrial Experiences

MediaTek Inc., Hsinchu, Taiwan
Software Engineering Intern

Jul. 2012 – Aug. 2012

- Multicore algorithm design for face detection on smartphone cameras

Proficient Skills

Programming languages – Python, C/C++, MATLAB, Lua, HTML, Javascript

Software libraries – TensorFlow, PyTorch, Torch, Caffe, OpenCV, VLFeat, Pthread, Armadillo