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, Ersin Yumer, Oliver Wang, Eli Shechtman, and Simon Lucey
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**, Ziyan 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 — Jul. 2012 – Aug. 2012
Software Engineering Intern

- 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