Chen Liu

Research Engineer, Facebook Reality Labs

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RESEARCH INTERESTS	My research interests include 3D vision and scene understanding. I am particularly interested in geometry reasoning using learning techniques.

EDUCATION

Washington University in St. Louis — Sep 2014 – May 2019

Ph.D. in Computer Science

- Advisor: Yasutaka Furukawa
- GPA: 3.95/4.0

University of Science and Technology of China — Sep 2010 – Jun 2014

B.S. in Information Science

- GPA: 3.96/4.3
- Ranking: 3/131

EXPERIENCE

Facebook Reality Labs — Aug 2019 – Present

Research Engineer

- Manager: Carl Ren

Nvidia Research — Aug 2018 – Dec 2018

Research Intern

- Mentors: Kihwan Kim, Jinwei Gu,
- A flexible detection framework for piece-wise planar reconstruction.
- Deploy an end-to-end learning system to predict both plane parameters and masks.

MagicLeap Research — May 2018 – Aug 2018

Research Intern

- Mentors: Vijay Badrinarayanan, Zhao Chen, Khushi Gupta
- Floorplan reconstruction from image sequence.
- Reconstruct CAD model directly from raw sensor data.

Adobe Research — May 2017 – Aug 2017

Research Intern

- Mentors: Jimei Yang, Duygu Ceylan, Ersin Yumer
- Perceive planar surfaces in a static image.
- Deploy CNN to estimate both plane parameters and masks.

Washington University in St. Louis — Sep 2014 – May 2019

Research Assistant

- High-level structured indoor modeling.
- Floorplan reconstruction from various sources.
- Layered and surface-based representation of indoor scenes.

National Tsing Hua University   Sep 2013 – Nov 2013

Visiting Scholar

- Generate paper popup craft designs from 2D images automatically.
- Optimize the design via solving a Mixed Integer Programming problem.

University of Science and Technology of China   Mar 2013 – May 2014

Undergraduate Research Assistant

- Virtual garment try-on system.
- Explore human pose estimation for the purpose of changing garment virtually.

PUBLICATIONS   **Chen Liu**, Kihwan Kim, Jinwei Gu, Yasutaka Furukawa, Jan Kautz, "PlaneRCNN: 3D Plane Detection and Reconstruction from a Single View" in Computer Vision and Pattern Recognition (CVPR) 2019.

Chen Liu*, Jiaye Wu*, Yasutaka Furukawa, "FloorNet: A Unified Framework for Floorplan Reconstruction from 3D Scans" in European Conference on Computer Vision (ECCV) 2018. (* indicates equal contribution)

Chen Liu, Jimei Yang, Duygu Ceylan, Ersin Yumer, Yasutaka Furukawa, "PlaneNet: Piece-wise Planar Reconstruction from a Single RGB Image" in Computer Vision and Pattern Recognition (CVPR) 2018 (**spotlight**).

Chen Liu, Jiajun Wu, Pushmeet Kohli, Yasutaka Furukawa, "Raster-to-Vector: Revisiting Floorplan Transformation" in International Conference on Computer Vision (ICCV) 2017.

Chen Liu, Jiajun Wu, Pushmeet Kohli, Yasutaka Furukawa, "Deep Multi-Modal Image Correspondence Learning" arXiv:1612.01225, 2016.

Chen Liu*, Hang Yan*, Pushmeet Kohli, Yasutaka Furukawa, "Multi-way Particle Swarm Fusion" arXiv:1612.01234, 2016. (* indicates equal contribution)

Chen Liu, Pushmeet Kohli, Yasutaka Furukawa, "Layered Scene Decomposition via the Occlusion-CRF" in Computer Vision and Pattern Recognition (CVPR) 2016 (**spotlight**).

SKILLS   **Proficient**: C/C++, Python, Lua, PyTorch, TensorFlow, Torch7, OpenCV
Experienced: Matlab, Java, Hadoop

REFERENCES   **Yasutaka Furukawa**

Assistant Professor at Simon Fraser University

furukawa@sfu.ca

Pushmeet Kohli

Research Scientist at DeepMind

pushmeet@google.com

Jimei Yang

Research Scientist at Adobe Research

jimyang@adobe.com