

RUIHUI LI

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Address: Rm 901, SHB, The Chinese University of Hong Kong, Shatin, Hong Kong.

EDUCATION

Ph.D. in Computer Science and Engineering

08/2017 - 06/2021

The Chinese University of Hong Kong (CUHK), Hong Kong, China

Advisor: Prof. Chi-Wing Fu

B.E & M. Sc. in Computer Science and Technology

09/2010 - 07/2017

Hunan University (HNU), Changsha, China

RESEARCH INTERESTS

3D Vision (CG&CV), particularly interested for 3D shape generation with certain controllability

Specifically, I am dedicated to designing efficient frameworks to enhance the quality and quantity of 3D data. It includes a series of upsampling, denoising networks for high-quality restoration, and also includes auto-augmentation, unsupervised generation models for artificially enlarging the diversity of 3D dataset.

Besides, I am also open-mind to bring geometric learning onto protein surface modelling.

PUBLICATION HIGHLIGHTS

- [1] *SP-GAN: Sphere-Guided 3D Shape Generation and Manipulation*
Ruihui Li, Xianzhi Li, Ka-Hei Hui, and Chi-Wing Fu
ACM Transactions on Graphics (TOG) (**SIGGRAPH**), 2021.
- [2] *Point Cloud Upsampling via Disentangled Refinement*
Ruihui Li, Xianzhi Li, Pheng-Ann Heng, and Chi-Wing Fu
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021.
- [3] *A Rotation-Invariant Framework for Deep Point Cloud Analysis* ([†]corresponding author)
Xianzhi Li, **Ruihui Li**[†], Guangyong Chen, Chi-Wing Fu, Daniel Cohen-Or, Pheng-Ann Heng
IEEE Transactions on Visualization and Computer Graphics (**TVCG**), 2021.
- [4] *PointAugment: an Auto-Augmentation Framework for Point Cloud Classification*
Ruihui Li, Xianzhi Li, Pheng-Ann Heng, and Chi-Wing Fu
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR, Oral**), 2020.
- [5] *DNF-Net: a Deep Normal Filtering Network for Mesh Denoising*
Xianzhi Li, **Ruihui Li**, Lei Zhu, Chi-Wing Fu, Pheng-Ann Heng
IEEE Transactions on Visualization and Computer Graphics (**TVCG**), 2020.
- [6] *PU-GAN: a Point Cloud Upsampling Adversarial Network*
Ruihui Li, Xianzhi Li, Chi-Wing Fu, Daniel Cohen-Or, Pheng-Ann Heng
IEEE International Conference on Computer Vision (**ICCV**), 2019.
- [7] *Enhancing Augmented VR Interaction via Egocentric Scene Analysis*
Yang Tian, Chi-Wing Fu, Shengdong Zhao, **Ruihui Li**, Xiao Tang, Xiaowei Hu, Pheng-Ann Heng
ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**Ubicomp**), 2019.
- [8] *Aggregating Complementary Boundary Contrast with Smoothing for Salient Region Detection*
Ruihui Li, Jianrui Cai, Hanling Zhang, Taihong Wang
The Visual Computer (**TVC**), 2017.

Manuscripts (under review):

- [1] *Point Set Self-Embedding*
Ruihui Li, Xianzhi Li, Tien-Tsin Wong, and Chi-Wing Fu
Submitted to IEEE Transactions on Visualization and Computer Graphics (TVCG), 2021.
- [2] *Non-Local Part-Aware Point Cloud Denoising*
Chao Huang*, **Ruihui Li***, Xianzhi Li, Pheng-Ann Heng, Chi-Wing Fu (*co-first author)
In arXiv 2003.06631.
- [3] *3DMol-Net: Learn 3D Molecular Representation using Adaptive Graph Convolutional Network Based on Rotation Invariance*
Chunyan Li, **Ruihui Li**, Junfeng Yao, Xiangxiang Zeng
Submitted to Information Sciences, 2021.
- [4] *Inferring RNA-binding protein target preferences using adversarial domain adaptation*
Ying Liu, **Ruihui Li**, Jiawei Luo, Zhaolei Zhang
Submitted to PLOS Computational Biology, 2021.

AWARDS AND HONORS

National Scholarships (the highest scholarship for graduate students in China)	2016
Second Prize in Intel Cup Undergraduate Electronic Design Contest (Advisor: Xu Cheng)	2014
Gold Award of Pan-Pearl-River-Delta University IT Project Competition in China	2014
First Prize Undergraduate Scholarship	2011&2012&2013
Award of Pacemaker to Merit Student	2011

TEACHING ASSISTANT

CSCI 5210 Advanced Topics in Computer Graphics and Visualization	Spring 2020
CSCI 3260 Principles of Computer Graphics	Fall 2018&2019
CSCI 3180 Principles of Programming Language	Spring 2019
ENGG 1110J Problem Solving by Programming	Spring 2018
CSCI 1130 Introduction to Computing Using Java	Fall 2017

PROFESSIONAL ACTIVITIES

Invited Talks:

- Point Cloud Analysis via Deep Learning (Peking University) 2021.07
- Point Cloud Upsampling: challenge and solution (Wuhan University) 2021.03
- Deep learning in point cloud recognition (Shenlan Xueyuan) 2020.04

Reviews:

- TPAMI, TIP, ICCV 2021, CVPR 2021, ECCV 2020, CVPR 2020, etc.

Research Habits:

- Slogan: Think is broad, Do it specific
- Making a survey, taking note using slides, and then digging smart ideas for my own topics.
Already accumulated around 70 slides, including various 2D/3D topics
- Maintaining a reading list on GitHub (Stars : 43)