Huan LEI

Updated April 20, 2023

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RESEARCH INTERESTS

Neural Fields for SDF and NeRF; Geometric deep learning for 3D Vision+Graphics; Shape analysis and 3D scene parsing; Self-supervised learning.

AWARDS

ACS WA 1962 Medal Finalist for *outstanding PhD thesis*, 2022.
Australian Government Research Training Program (AGRTP), 2017 – 2021.

EDUCATION

The University of Western Australia — Perth, WA
PhD in Computer Science and Software Engineering — Aug/2017 – Aug/2021
Advisors: Prof. Ajmal Mian; Dr. Naveed Akhtar.

ACADEMIC EXPERIENCE

Australian Institute for Machine Learning — Adelaide, SA
Computational Mesh Modelling — April/2023 – now

The Australian National University — Canberra, ACT
Neural Fields for Surface Reconstruction — Feb/2022 – March/2023

The University of Western Australia — Perth, WA
Geometric feature learning on meshes — Aug/2021 – Dec/2021

PREPRINTS

[1] **Huan LEI**, Naveed Akhtar, Mubarak Shah, Ajmal Mian. Geometric Feature Learning for 3D Meshes. arXiv preprint arXiv:2112.01801, 2021.
[2] **Huan LEI**, Naveed Akhtar, and Ajmal Mian. Spherical convolutional neural network for 3D point clouds. arXiv preprint arXiv:1805.07872, 2018.

PUBLICATIONS

[1] **Huan LEI**, Naveed Akhtar, Mubarak Shah, Ajmal Mian. Mesh Convolution with Continuous Filters for 3D Surface Parsing. **TNNLS**, 2023. [paper], [code].
[2] **Huan LEI**, Ruitao Leng, Liang Zheng, Hongdong Li. CircNet: Meshing 3D Point Clouds with Circumcenter Detection. **ICLR**, 2023. [paper], [code].
[3] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Picasso: A CUDA-based Library for Deep Learning over 3D Meshes, **CVPR**, 2021. [paper], [code].
[4] **Huan LEI**, Naveed Akhtar, Ajmal Mian. SegGCN: Efficient 3D Point Cloud Segmentation with Fuzzy Spherical Kernel, **CVPR**, 2020. [paper], [code].
[5] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Spherical Kernel for Efficient Graph Convolution on 3D Point Clouds, **TPAMI**, March 2020. [paper], [code].
[6] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Octree guided CNN with Spherical Kernels for 3D Point Clouds, **CVPR**, 2019. [paper], [code].
[7] **Huan LEI**, Guang Jiang, Long Quan. Fast Descriptors and Correspondence Propagation for Robust Global Point Cloud Registration, **TIP**, 2017. [paper], [code].

TECHNICAL SKILLS

Programming: CUDA C, Python, C/C++, MATLAB (with mex)
Libraries: Tensorflow, Pytorch, Open3D, OpenCV, PCL.

SERVICES

Reviewer for CVPR, TPAMI, TNNLS, TIP, TVCG.