Huan LEI

Homepage: **https://huanlei.xyz/**
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GitHub: **https://github.com/EnyaHermite/**
Google Scholar: **https://scholar.google.com.au/citations?user=FUzk-VkAAAAJ&hl=en**

RESEARCH INTERESTS Geometric deep learning for 3D visual perception, surface reconstruction, self-supervised and multimodal learning, surface representation learning, 3D generation.

AWARDS & HONORS **ACS WA 1962 Medal Finalist** for *outstanding PhD thesis*.
Australian Government RTP Scholarship .

OPEN-SOURCE I developed **PicassoPlus**, a PyTorch-based open-source package for deep learning on large-scale and heterogeneous 3D meshes (2023).

EDUCATION

The University of Western Australia — Perth, WA
PhD in Computer Science and Software Engineering — 2017 – 2021

ACADEMIC EXPERIENCE

Australian Institute for Machine Learning — Adelaide, SA
Surface Reconstruction and Surface Representations

The Australian National University — Canberra, ACT
Surface Reconstruction from Point Clouds

FIRST-AUTHOR PUBLICATIONS

Peer-Reviewed Publications

[1] **Huan LEI**. OffsetOPT: Explicit Surface Reconstruction without Normals. **CVPR**, 2025. [paper], [code].
[2] **Huan LEI**, Naveed Akhtar, Mubarak Shah, Ajmal Mian. Mesh Convolution with Continuous Filters for 3D Surface Parsing. **TNNLS**, 2023. [paper], [code].
[3] **Huan LEI**, Ruitao Leng, Liang Zheng, Hongdong Li. CircNet: Meshing 3D Point Clouds with Circumcenter Detection. **ICLR**, 2023. [paper], [code].
[4] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Picasso: A CUDA-based Library for Deep Learning over 3D Meshes, **CVPR**, 2021. [paper], [code].
[5] **Huan LEI**, Naveed Akhtar, Ajmal Mian. SegGCN: Efficient 3D Point Cloud Segmentation with Fuzzy Spherical Kernel, **CVPR**, 2020. [paper], [code].
[6] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Spherical Kernel for Efficient Graph Convolution on 3D Point Clouds, **TPAMI**, March 2020. [paper], [code].
[7] **Huan LEI**, Naveed Akhtar, Ajmal Mian. Octree guided CNN with Spherical Kernels for 3D Point Clouds, **CVPR**, 2019. [paper], [code].
[8] **Huan LEI**, Guang Jiang, Long Quan. Fast Descriptors and Correspondence Propagation for Robust Global Point Cloud Registration, **TIP**, 2017. [paper], [code].

Preprints and Technical Reports

Huan LEI, Hongdong Li, Andreas Geiger, Anthony Dick. Level-Set Parameters: Novel Representation for 3D Shape Analysis. arXiv preprint arXiv:2412.13502, 2024.
Huan LEI, Naveed Akhtar, Mubarak Shah, Ajmal Mian. Geometric Feature Learning for 3D Meshes. arXiv preprint arXiv:2112.01801, 2021.
Huan LEI, Naveed Akhtar, and Ajmal Mian. Spherical convolutional neural network for 3D point clouds. arXiv preprint arXiv:1805.07872, 2018.

INVITED TALK Surface reconstruction from point clouds at Maptek (industry), 2023.

PROFESSIONAL SERVICES Conference Reviewer: CVPR, ICLR, ICCV, ECCV.
Journal Reviewer: TPAMI, TNNLS, TIP, TVCG.