Lingjie Su

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EDUCATION

Huazhong University of Science and Technology, Wuhan, China *Sep. 2022 – Jun. 2025*
Candidate for Master of Engineering, School of Mechanical Science and Engineering
GPA: 91.04/100

Huazhong University of Science and Technology, Wuhan, China *Sep. 2018 – Jun. 2022*
Bachelor of Engineering, School of Mechanical Science and Engineering
GPA: 90.20/100

RESEARCH EXPERIENCE

Probability-based point cloud registration *Jan. 2024 – Present*

- Designed pairwise point cloud registration method by formulating the problem as a GMM fitting task, incorporating locally consistent constraint to enhance robustness, and deriving a closed-form solution using EM algorithm
- Extended pairwise registration to joint registration to solve the problem of simultaneously registering multiple point clouds

Mesh reconstruction from point cloud *Dec. 2022 – Present*

- Reconstructed the implicit B-spline surface from point cloud, fitted by 3L algorithm with global tension constraint
- Generated mesh data from an implicit surface function using the Marching Cubes method
- Proposed an anisotropic bilateral filtering method for mesh denoising to enhance mesh quality

Development of point cloud processing software for building data *Aug. 2022 – Dec. 2023*

- Preprocessed data by performing registration using ICP and denoising using voxel sampling
- Segmented and calculated key parameters of building parts, such as tube, I-beam and angle steel

Multi-view point cloud registration *Oct. 2021 – Apr. 2022*

- Reconstructed marker points from images using elliptic fitting, polar constraints, and triangulation. Calculated coordinate transformations between different views using spatial invariant characteristics
- Refined coordinates under different views through graph optimization using g2o framework

PUBLICATIONS

L. Su, W. Xu, and W. Li, "Robust point cloud registration in robotic inspection with locally consistent gaussian mixture model," *IEEE Trans. Instrum. Meas.*, 2024, Under Review. preprint

L. Su et al., "An adaptive anisotropic bilateral filtering method for mesh data in scale space," *Meas. Sci. Technol.*, vol 35, no. 6, 2024, doi: 10.1088/1361-6501/ad317e

RESEARCH INTERESTS

Point cloud registration, Surface reconstruction, Mesh denoising

SKILLS

Language: English (IELTS: 7.0), Chinese (Native)
Computer Skills: C++, Matlab, PCL, OpenCV, Ceres, Eigen, g2o, Python

REFEREES

Wen-long Li (professor, email: wlli@mail.hust.edu.cn); **Wei Xu** (post doctor, email: weixu.chn@gmail.com)