

# Zhenlong Yuan

(+86) 151 1795 1511 | yuanzhenlong21b@ict.ac.cn | Beijing, China |  Google Scholar

## EDUCATION

### Institute of Computing Technology, Chinese Academy of Sciences (ICT, UCAS)

Sep 2021 - Now

- Degree: Doctor | Advisor: Zhaoqi Wang | Major: Computer Application Technology | GPA: [3.77 / 4.0](#)
- Specialization: 3D Computer Vision (3DCV), Vision Language Model (VLM), MultiModal Machine Learning (MMML)

### Queen Mary University of London (QM)

Sep 2017 - Jun 2021

- Degree: Bachelor | Major: Telecommunications Engineering and Management | Rank: [top 2 %](#) | GPA: [3.83 / 4.0](#)

### Beijing University of Posts and Telecommunications (BUPT)

Sep 2017 - Jun 2021

- Degree: Bachelor | Major: Telecommunications Engineering and Management | Rank: [top 2 %](#) | GPA: [3.83 / 4.0](#)

## RESEARCH EXPERIENCE

### TSAR-MVS, *Textureless-aware Segmentation Guided MVS* | (China)

May 2022 - Apr 2023

- We present **Iterative Correlation Refinement** to refine pixel estimates based on the surrounding confidence neighbors.
- We introduce **Textureless-Aware Segmentation** to achieve the discrimination and planarization of textureless areas.

### SD-MVS, *Segmentation-Driven Deformation MVS* | (China)

Mar 2023 - Aug 2023

- We adopt SAM to extract **depth edge as prior** to guide patch deformation within **depth-continuous areas**.
- We introduce **spherical gradient refinement** on normals and pixelwise search interval on depths for better refinement.
- We propose the **EM-based hyperparameter optimization** to alternately optimize matching cost and hyperparameters.

### MSP-MVS, *Multi-Granularity Segmentation Prior Guided MVS* | (China)

Sep 2023 - Mar 2024

- We leverage **Semantic-SAM** to aggregate **multi-granularity depth edges** as prior for **edge-confined patch deformation**.
- We propose adaptive equidistribution and disassemble-clustering to facilitate **attention-consistent patch deformation**.
- We present the disparity-sampling synergistic 3D optimization to help identify **global-minimum matching costs**.

### DVP-MVS, *Synergize Depth-Edge and Visibility Prior for MVS* | (China)

Apr 2024 - Aug 2024

- We introduce **depth-edge prior**, which generates **fine-grained homogeneous boundaries for stable deformation**.
- We **restore visible areas with reprojection post-verification**, thereby facilitating **visibility-aware patch deformation**.
- We introduce aggregated visible hemispherical normals and local projection depth differences on epipolar lines.

## PUBLICATIONS (Total: Seven Papers. First Author: Five Papers)

1. **Zhenlong Yuan**, Jiakai Cao, Zhaoqi Wang and Zhaoxin Li. TSAR-MVS: Textureless-aware Segmentation and Correlative Refinement Guided Multi-View Stereo. (**Pattern Recognition, CCF-B, IF8.0, Paper Accepted**)
2. **Zhenlong Yuan**, Jiakai Cao, Zhaoxin Li, Hao Jiang and Zhaoqi Wang. SD-MVS: Segmentation-driven Deformation Multi-View Stereo with Spherical Refinement and EM optimization. (**AAAI 2024, CCF-A, Paper Accepted**)
3. **Zhenlong Yuan**, Cong Liu, Fei Shen, Zhaoxin Li, Jingguo Luo, Tianlu Mao and Zhaoqi Wang. MSP-MVS: Multi-Granularity Segmentation Prior Guided Multi-View Stereo (**AAAI 2025, CCF-A, Paper Accepted**)
4. **Zhenlong Yuan**, Jingguo Luo, Fei Shen, Zhaoxin Li, Cong Liu, Tianlu Mao and Zhaoqi Wang. DVP-MVS: Synergize Depth-Edge and Visibility Prior for Multi-View Stereo. (**AAAI 2025, CCF-A, Paper Accepted**)
5. **Zhenlong Yuan**, Zhidong Yang, Yujun Cai, Kuangxin Wu, Mufan Liu, Dapeng Zhang, Zhaoxin Li, Hao Jiang and Zhaoqi Wang. SED-MVS: Segmentation-Driven and Edge-Aligned Deformation Multi-View Stereo with Depth Restoration and Occlusion Constraint. (**IEEE TCSVT, CCF-B, IF7.9, Under Review**)
6. Jiakai Cao, **Zhenlong Yuan**, Zhaoxin Li, Tianlu Mao and Zhaoqi Wang. NPMVS: NeRF-based Polarimetric Multiview Stereo. (**Pattern Recognition, CCF-B, IF8.0, Paper Accepted**)
7. Kehua Chen, **Zhenlong Yuan**, Tianlu Mao and Zhaoqi Wang. Dual-Level Precision Edges Guided Multi-View Stereo with Accurate Planarization. (**AAAI 2025, CCF-A, Paper Accepted**)

## AWARDS

- Two College Innovation and Entrepreneurship Projects. (**National-Level** and **City-Level** in 2019)
- Seven Academic Excellence Scholarship Awards. (**Second Class** in 2017-2021 and **First Class** in 2021-2024)
- Three Outstanding Student Awards. (2021-2024) | Lenovo Enterprise Scholarship (2024)

## SKILLS

**Programming** Python, C/C++, CUDA, CMake, Matlab, Git, LaTeX

**Technologies** Linux, Tensorflow, Pytorch, OpenCV

**Languages** Mandarin Chinese (Native), English (Conversational, CET-4: 555 / CET-6: 460)