Shiyong Liu

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Artificial Intelligence Specialist

Education

National University of Defense Technology, China Sept 2014 – Dec 2016

- M.Eng. in Electronic and Communication Engineering
- Thesis on computer vision and high performance computing

China University of Geosciences, China Sept 2010 – Jun 2014

- B.Eng. in Remote Sensing Science and Technology

Experience

Senior Engineer, Huawei Technologies Co., Ltd. Noah Ark's Lab – Shenzhen, CN June 2017 – Present

- Camera poses estimation acceleration and 3DGS training acceleration, achieving end-to-end reconstruction within 1 minute.
- Led research and deployment of NeRF and 3DGS algorithms in 3D large-scene reconstruction, achieving automatic reconstruction of a 1000 sqm exhibition hall within 1 hour and rendering efficiency over 100 FPS. The technology was showcased at Huawei's HC conference and the World VR Conference as a key-note.
- Led 3D vision hand motion capture research with 4.0mm accuracy, securing top 2 rankings on Freihand, Ho3D v2, and Ho3D v3 leaderboards. Designed and built a full-body motion capture platform with >30 FPS, deploying tech in sports health, digital humans, and smart cockpit applications.
- Worked on video-based content search technology for e-commerce's multimodal search projects, enabling product recognition in <3s via video, <2s via images, and <2s in live streams, with 100% category and 90% model accuracy.
- As a Technical Cooperation Project Manager, collaborating with Russian universities to develop defect detection and recognition algorithms for smartphones. The algorithms were implemented in Huawei's folding screen project, achieving a detection rate of 95+%.
- Led a 5-member team to develop and optimize Huawei's iVision platform and its operators, benchmarking against MVTec's HALCON. Enabled cross-platform deployment of 300+ operators with 98% accuracy and a 10+% performance boost, facilitating domestic substitution and saving millions in annual software costs.

Publications

VastGaussian: Vast 3D Gaussians for Large Scene Reconstruction 2004

Jiaqi Lin, Zhihao Li, Xiao Tang, Jianzhuang Liu, ***Shiyong Liu***, Jiayue Liu, Yangdi Lu, Xiaofei Wu, Songcen Xu, Youliang Yan, Wenming Yang

IEEE Conference on Computer Vision and Pattern Recognition ***(CVPR)***, 2024.

MirrorGaussian: Reflecting 3D Gaussians for Reconstructing Mirror Reflections 2004

Jiayue Liu, Xiao Tang, Freeman Cheng, Roy Yang, Zhihao Li, Jianzhuang Liu, Yi Huang, Jiaqi Lin, ***Shiyong Liu***, Xiaofei Wu, Songcen Xu, Chun Yuan,

European Conference on Computer Vision ***(ECCV)***, 2024.

An image rendering method, image rendering device and computer-readable storage medium 2004

Tangxiao, Liu Jiayue, Li Zhihao, Cheng Freeman, Yang Zihao, ***Liu Shiyong***, Wu Xiaofei Xu Songcen

Invention Patent, CN202311052248.8, 2023.

ATTITUDE ESTIMATION METHOD AND RELATED DEVICE THEREFOR 2003

Liu Shiyong, Li Zhihao, Liu Jianzhuang, Wu Xiaofei, Xu Songceng

Invention Patent, CN202310627327.0, WOCN24095720, 2023.

OBJECT MODEL ROTATION METHOD AND RELATED DEVICE THEREOF 2003

Li Zhihao, Gu Kerui, ***Liu Shiyong***, Liu Jianzhuang, Xu Songceng, Yan youliang

Invention Patent, CN202310540964.4, WOCN24092219, 2023.

The invention relates to a data processing method and device 2003

Wang yangang, Ju jingyi, Huang Buzhen, Li Zhihao, ***Liu Shiyong***, Wu Xiaofei

Invention Patent, CN202311052248.8, 2023.

Honors & Awards

Outstanding stuff 2024

- Huawei 2012 Lab.

Outstanding stuff 2020

- Huawei 2012 Lab.

Outstanding stuff 2018

- Huawei 2012 Lab.

Outstanding Graduate 2016

- National University of Defense Technology.

National Champion of the 11th "Huawei Cup" China Graduate Electronics Design Contest. 2016

- Developed the first domestic "Eagle Eye" automatic tracking drone system.

Technologies

Machine Learning:: Neural Networks, Decision Trees, SVM

Programming: Python (Expert), Java (Intermediate), C++ (Expert), SQL, JavaScript (threejs), Bash

Tools & Platforms: CUDA, Visual Studio, Android, Ascend, Harmony OS, Docker, Arm