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
- Thesis on remote sensing image target detection

Experience

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

- **Pose Algorithm Optimization and 3D Reconstruction Technical Expert:** Developed the innovative DashGaussian algorithm, significantly reducing the time required for end-to-end pose estimation and 3DGS reconstruction, thereby enhancing the efficiency of camera pose estimation algorithms and contributing to groundbreaking advancements in related projects.
- **Large-Scale Scene Reconstruction Technical Expert:** Led the research and commercialization of NeRF and 3DGS large-scale scene reconstruction technologies, participating in the creation of the industry-leading VastGaussian algorithm, which enables rapid automated reconstruction of large-scale scenes. The technology was showcased at the Huawei HC conference and the World VR conference, garnering significant attention and becoming a key selling point, driving industry development.
- **Digital Human Technology Research and Application Expert:** Proposed the advanced DaHyF algorithm, substantially improving hand reconstruction accuracy and maintaining a top ranking on authoritative public leaderboards such as Freihand, Ho3D v2, and Ho3D v3. Responsible for the design and construction of a full-body motion capture system, facilitating the widespread application of technology in Huawei's sports health, Huawei Cloud, and smart cockpit products, enhancing product upgrades and user experience.
- **Video Content Search Technology Expert:** Developed efficient video content search technology, successfully applied to terminal e-commerce multi-modal search projects, significantly reducing the time for video product recognition, image product recognition, and live video stream product recognition, while ensuring extremely high accuracy rates for product category and model recognition, providing strong technical support for the e-commerce industry and improving the shopping experience for users.
- **Technical Cooperation Project Manager:** Collaborated closely with domestic and international universities, responsible for the research and development of mobile product defect detection and recognition algorithms, as well as few-shot learning algorithms. Achieved an outstanding detection rate on the folding screen production line, effectively saving a considerable amount of labor costs and making significant contributions to product quality control and production efficiency enhancement.
- **Team Leader:** Managed a technical team of five, benchmarking against the internationally renowned HALCON commercial software, and was fully responsible for the design, development, performance optimization, and cross-platform support of Huawei's machine vision platform iVision and its corresponding operators. Successfully saving the company a substantial amount in software procurement costs annually and promoting the development and application of domestic machine vision technology.

Publications

Decoupling Appearance Variations with 3D Consistent Features in Gaussian Splatting 2025

Jiaqi Lin, Zhihao Li, Binxiao Huang, Xiao Tang, Jianzhuang Liu, ***Shiyong Liu***, Xiaofei Wu, Fenglong Song, Wenming Yang

Association for the Advancement of Artificial Intelligence ***(AAAI)***, 2025.

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 2024/2022/2020/2018

- 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)

Tools & Platforms: CUDA, Android, Ascend, Docker, Arm