Chenghao (Shenghao) Li

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Education

Shanghai Jiao Tong University (SJTU) 2020.09 – 2023.12
Control Science and Engineering Pattern Recognition and Intelligent Systems PhD Shanghai

East China University of Science and Technology (ECUST) 2017.09 – 2020.06
Mechanical Engineering Robot Vision Master Shanghai

East China University of Science and Technology (ECUST) 2013.09 – 2017.06
Mechanical Design, Manufacturing and Automation English (Dual Degree) Bachelor (Honours) Shanghai

Selected Publications

1. **S. Li**, Q. Zhao and Z. Xia, "Sparse-to-Local-Dense Matching for Geometry-Guided Correspondence Estimation", in IEEE Transactions on Image Processing, vol. 32, pp. 3536-3551, 2023. Link
2. **S. Li**, Z. Xia and Q. Zhao, "Representing Boundary-ambiguous Scene Online with Scale-encoded Cascaded Grids and Radiance Field Deblurring", in IEEE Transactions on Circuits and Systems for Video Technology, 2023. (Early Access) Link
3. **S. Li**, S. Liu, Q. Zhao and Q. Xia, "Quantized Self-Supervised Local Feature for Real-Time Robot Indirect VSLAM", in IEEE/ASME Transactions on Mechatronics, vol. 27, no. 3, pp. 1414-1424, 2022. Link

Selected Research Projects

Visual Scene Perception and 3D Reconstruction - Researcher - Link 2022.11 – 2023.06

- Proposed an online scene representation learning for indoor/outdoor scenes in a reparameterized domain;
- Proposed an radiance field deblurring scheme against motion blur by leveraging physical imaging process;

Learning-based Correspondence Estimation and Visual SLAM - Researcher - Link 2021.09 – 2022.06

- Proposed an E2E feature detection, description and matching pipeline with supervision noise regularized;
- Proposed a feature-based VSLAM with quantized self-supervised local feature with more stable tracking;

3D Visual Drug Box Detector - Algorithm Developer - Link 2019.10 – 2020.06

- Established a 3D visual drug box detection pipeline, performed drug identification and 3D size estimation;
- Built a drug box datasets with customized hardwares, participated in data collection of 1,000+ samples;

ROS Omnidirectional Mobile Platform Development - Software Developer - Link 2018.07 – 2019.06

- Proposed a feature-based VSLAM for Visual Mapping and Localization;
- Developed ROS-based CV applications on Jetson platforms, e.g., object tracking, object detection, etc;

Selected Internships

MiniMax - 3DV&AIGC Research Intern 2021.11 – 2023.05

- Designed 3D animatable avatars based on NeRF, participated in data collection of 500+ people;
- Implemented and trained diffusion models based on a self-collected dataset following stable-diffusion;

QualComm - AI Intern 2019.07 – 2020.07

- Researched Neural Network Quantization, reimplemented Data-free Quantization and several SOTA works;
- Developed a comment analysis model for Customer Engineering;

Oceanbotech - Robotics&Vision Intern 2016.10 – 2019.06

- Developed VSLAM, object tracking, and object detection algorithms for a ROS based mobile platform;
- Developed pose control algorithm by real-time optimization for an ROV;

Awards

SJTU WeiChai Power Scholarship (top1% highest honour at SJTU) 2023.12
Shanghai College Student Creative Robot Challenge, Second Prize 2019.10

Skills

- Programming: Python, C/C++, ROS, Tensorflow, Pytorch, OpenCV, Transformer;
- Misc: English (IELTS 7.5), Linux, Shell, LaTeX, Markdown, Microsoft Office, Git;