FEI XUE (HOMEPAGE)

Department of Engineering, University of Cambridge, UK
Tel: (+44) 07398900320 E-mail: fx221@cam.ac.uk, lraxue@gmail.com

EDUCATION

University of Cambridge, UK *January 2021 - Now*
PhD of Engineering,
Machine Intelligence Laboratory,
Department of Engineering
Supervisor: Prof. Roberto Cipolla

Peking University, Beijing, China *September 2016 - July 2019*
Master of Science,
Key Laboratory of Machine Perception (MOE),
School of Electronics Engineering and Computer Science (EECS)
Supervisor: Prof. Hongbin Zha

Peking University, Beijing, China *September 2012 - July 2016*
Bachelor of Science,
School of Electronics Engineering and Computer Science (EECS)

RESEARCH INTERESTS

3D Reconstruction, Semantic Reconstruction, Visual Localization/Navigation
Local Feature, Efficient Feature Matching
Neural Rendering, Spatial AI

WORK EXPERIENCES

NVIDIA, Research Intern, 2024.6 - 2024.10
Task: Foundation matching model

UISEE Technology, Research Scientist, 2019.7 - 2020.8
Task: Geometric and end-to-end pose estimation for autonomous driving

SenseTime, Research Intern, 2020.10 - 2021.4
Task: Robust features for long-term reconstruction

DeepGlint, Research Intern, 2016.6 - 2016.9
Task: Real time image quality assessment system design

RICOH, Research Intern, 2014.2 - 2014.6
Task: Depth map upsampling for Kinect

PUBLICATIONS

PRAM: Place Recognition Anywhere Model for Efficient Visual Localization
Fei Xue, Ignas Budvytisy, Roberto Cipolla
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2024 (in submission)

VRS-NeRF: Visual Relocalization with Sparse Neural Radiance Field
Fei Xue, Ignas Budvytisy, Roberto Cipolla

IMP: Iterative Matching and Pose Estimation with Adaptive Pooling
Fei Xue, Ignas Budvytisy, Roberto Cipolla
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

SFD2: Semantic-guided Feature Detection and Description
Fei Xue, Ignas Budvytisy, Roberto Cipolla
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

Efficient Large-scale Localization by Global Instance Recognition
Fei Xue, Ignas Budvytisy, Daniel Olmeda Reinoz, Roberto Cipolla
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022

Deep Visual Odometry with Adaptive Memeory
Fei Xue, Xin Wang, Junqiu Wang, and Hongbin Zha
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), 2022

Line Flow based SLAM
Qiuyuan Wang, Zike Yan, Junqiu Wang, Fei Xue, Wei Ma, Hongbin Zha
IEEE Transactions on Robotics (T-RO), 2020

Learning Multi-view Camera Relocalization with Graph Neural Networks
Fei Xue, Xin Wu, Shaojun Cai, Junqiu Wang
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020*

Self-Supervised Deep Visual Odometry with Online Adaptation
Shunkai Li, Xin Wang, Yingdian Cao, Fei Xue, Zike Yan, Hongbin Zha
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2020 (oral)*

Local Supports Global: Deep Camera Relocalization with Sequence Enhancement
Fei Xue, Xin Wang, Zike Yan, Qiuyuan Wang, Junqiu Wang, and Hongbin Zha
In *IEEE International Conference on Computer Vision (ICCV), 2019*

Sequential Adversarial Learning for Self-Supervised Deep Visual Odometry
Shunkai Li, Fei Xue, Xin Wang, Zike Yan, and Hongbin Zha
In *IEEE International Conference on Computer Vision (ICCV), 2019*

Beyond Tracking: Selecting Memory and Refining Poses for Deep Visual Odometry
Fei Xue, Xin Wang, Shunkai Li, Qiuyuan Wang, Junqiu Wang, and Hongbin Zha
In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2019 (oral)*

Visual Odometry with Deep Bidirectional Recurrent Neural Networks
Fei Xue, Xin Wang, Qiuyuan Wang, Junqiu Wang, and Hongbin Zha
In *Chinese Conference on Pattern Recognition and Computer Vision (PRCV), 2019 (oral)*

Guided Feature Selection for Deep Visual Odometry
Fei Xue, Xin Wang, Qiuyuan Wang, Wei Dong, Junqiu Wang, and Hongbin Zha
In *Asian Conference on Computer Vision (ACCV), 2018*

Continuous-time Stereo Visual Odometry Based on Dynamics Model
Xin Wang, Fei Xue, Zike Yan, Wei Dong, Qiuyuan Wang, and Hongbin Zha
In *Asian Conference on Computer Vision (ACCV), 2018*

Perceptual Enhancement for Stereoscopic Videos Based on Horopter Consistency
Zeyu Wang, Xiaohan Jin, Fei Xue, Renju Li, Hongbin Zha, and Katsushi Ikeuchi
In *ACM Conference on Virtual Reality Software and Technology (VRST), 2016 (oral)*

PATENTS

- **Posture determining device, method and the visual odometry of mobile device (CN109798888A)**
- **A Hierarchical Method for Visual Localization (under review)**

ACADEMIC ACTIVITIES

- **CV conference reviewer: WACV, ECCV, CVPR, ICCV**
- **ML conference reviewer: ICLR, ICML, NeurIPS**
- **Robotics conference reviewer: IROS, ICRA**
- **Journal reviewer: Pattern Recognition (PR), T-PAMI**