Huajian HUANG

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Education

Ph.D. in Computer Science and Engineering *2019.9 – 2024.1*
Department of Computer Science and Engineering *Hong Kong, China*

The Hong Kong University of Science and Technology
Supervisor: Prof. Sai-Kit Yeung

Bachelor in Telecommunication Engineering *2014.9 – 2018.6*
School of Electronics and Information Technology *GuangZhou, China*

Sun Yat-Sen University

Research Interest

Omnidirectional Perception, 3D Vision, Robotics Vision, Localization and Mapping, 3D Reconstruction

Research and Work Experience

Postdoc Fellow *2024.2 –*
The Hong Kong University of Science and Technology *Hong Kong, China*
Division of Integrative Systems and Design

Visiting Scholar *2023.4 – 2023.8*
University of Southern California *Los Angeles, USA*

Institute for Creative Technologies, Vision & Graphics Lab
Advisor: Yajie Zhao

Overseas Foreign Student Attachment *2023.1 – 2023.3*
(A*STAR) Agency for Science, Technology and Research *Singapore*

Centre for Frontier AI Research
Advisor: Ivor Tsang and Yaxin Shi

Research Intern *2017 – 2018*
ADSC/Illinois at Singapore Pte Ltd *Singapore*
Advisor: Wen-Yan Lin

Vice Minister of Electronic Design Club *2016 – 2017*
SYSU Information Science & Technology Developing Center *Guangzhou, China*

Teaching Experience

Teaching Assistant
The Hong Kong University of Science and Technology

- COMP 1021 Introduction to Computer Science *Fall 2020, Spring 2021*
- COMP 2012 Object-Oriented Programming and Data Structures *Fall 2021*
- COMP 4431 Multimedia Computing *Spring 2020*
- ISDN 2300 Digital Design *Fall 2020*
- ISDN 5300 Advanced Digital Design *Spring 2022*

Students Mentored

Master Students

Yipeng ZHU (HKUST)   *2022 - Now*

Longwei Li (SYSU)   *2022 - Now*

PhD Students

Changkun LIU (HKUST)   *2023 - Now*

Yinzhe XU (HKUST)   *2022 - Now*

Xiaopeng GUO (HKUST)   *2022 - Now*

Professional Activities

Review: TPAMI, IJCV, TOG, SIGGRAPH, NeurIPS, RAL, ICRA, and IROS

Projects and Publications

*: co-first authors, † corresponding author

StyleCity: Large-Scale 3D Urban Scenes Stylization with Vision-and-Text Reference via Progressive Optimization
Yingshu Chen, Huajian Huang†, Tuan-Anh Vu, Ka-Chun Shum, and Sai-Kit Yeung
Preprint, 2024

360VOTS: Omnidirectional Visual Object Tracking and Segmentation
Yinzhe Xu, Huajian Huang†, Yingshu Chen and Sai-Kit Yeung
Preprint, 2024

Photo-SLAM: Real-time Simultaneous Localization and Photorealistic Mapping for Monocular, Stereo, and RGB-D Cameras
Huajian Huang, Longwei Li, Hui Cheng, Tristan Braud and Sai-Kit Yeung
The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2024

360Loc: A Dataset and Benchmark for Omnidirectional Visual Localization with Cross-device Queries
Huajian Huang, Changkun Liu*, Yipeng Zhu, Hui Cheng, Tristan Braud and Sai-Kit Yeung*
The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR), 2024

HR-APR: APR-Agnostic Framework with Uncertainty Estimation and Hierarchical Refinement for Camera Relocalisation
Changkun Liu, Shuai Chen, Yukun Zhao, Huajian Huang, Victor Prisacariu, Tristan Braud
International Conference on Robotics and Automation (ICRA), 2024

360VOT: A New Benchmark Dataset for Omnidirectional Visual Object Tracking
Huajian Huang, Yinzhe Xu, Yingshu Chen and Sai-Kit Yeung
International Conference on Computer Vision (ICCV), 2023

360Roam: Real-Time Indoor Roaming Using Geometry-Aware 360° Radiance Fields
Huajian Huang, Yinzhe Xu, Yingshu Chen, Tianjia Zhang and Sai-Kit Yeung
Arxiv, 2022

Real-Time Omnidirectional Roaming in Large Scale Indoor Scenes
Huajian Huang, Yingshu Chen, Tianjia Zhang and Sai-Kit Yeung

360ST-Mapping: An Online Semantics-Guided Topological Mapping Module for Omnidirectional Visual SLAM
Hongji Liu, Huajian Huang, Sai-Kit Yeung and Ming Liu
International Conference on Intelligent Robots and Systems (IROS), 2022

360VO: Visual Odometry Using A Single 360 Camera
Huajian Huang and Sai-Kit Yeung
International Conference on Robotics and Automation (ICRA), 2022

SiamX: An Efficient Long-term Tracker Using Cross-level Feature Correlation and Adaptive Tracking Scheme
Huajian Huang and Sai-Kit Yeung
International Conference on Robotics and Automation (ICRA), 2022

Dual-SLAM: A framework for robust single camera navigation
Huajian Huang, Wen-Yan Lin, Siying Liu, Dong Zhang and Sai-Kit Yeung
International Conference on Intelligent Robots and Systems (IROS), 2020