Name: Xueyang Kang **Email:** kangxueyang@126.com **Mobile:** +86 18221799938 / +61 426495546
Scopus ID: 57203992908 **ORCID**: 0000-0001-7159-676X

SUMMARY

Hardware:

Familiar with **FPGA, ARM M4, Jetson Nano, JetsonX, Raspberry (ARM),** etc., embedded platform and algorithm development and deployment. Hands-on experience on **ROS** applications of different sensors, **GPS, ultrasound, ToF, UWB, stereo camera, RGB-D, Lidar, Radar, IMU, Wheel encoder**, and **UR5, ABB, Kuka Fanuc robot arm**.

Software

Hands-on experience with “TensorFlow”, “PyTorch”, and “PyTorch Geometry”. Familiar with SOTA network backbones, practical coding experience on MLP-based NeRF and implicit SDF, Gaussian Splatting, CNN, Transformer, GNN, Diffusion, and Equi-model design. Familiar with Blender, Isaac-Sim, PyBullet.

MAIN RESEARCH INTEREST

Robotic Perception, 3D Reconstruction, Deep Learning, Trustworthy AI, Signal Processing, Equi-Vision, SLAM, VR/AR, Sensor Fusion for Soft Robotics

CODING SKILLS

C++ 11, Python, C, MATLAB, JavaScript for 3D Viz, HTML

LANGUAGE

Chinese (mother tongue), English (proficient), German (good), Dutch (beginner)

WORK EXPERIENCE

04/2025—09/2025, Australia Research Intern, Telstra, IoT Research and Development Lab, Melbourne. (Low-Power Radar-Based Tracking and Presence Detection of Moving Targets)
09/2023—01/2024, RA at Poly Uni of Hong Kong, AAE Faculty, Hong Kong.
12/2020—05/2021, Senior Algorithm Engineer, Momenta AI, Parking Department R&D, Suzhou.
09/2018—11/2020, Robot System Engineer, R&D Center at Qualcomm, Beijing.
04/2018—09/2018, Research HIWI, Chair of Communication and Navigation, TUM, Munich.
05/2016—08/2016, Internship, Robot Department, ABB Co., Ltd, Shanghai.

EDUCATION

05/2021—09/2025, Engineering and Info Tech, The Uni of Melbourne, joint Ph.D.
05/2021—06/2025, Electro & Info Engineering, KU Leuven, joint Ph.D.(Completed)
10/2016—01/2018, Electro & Info Engineering (M.S.), Technical University of Munich, GPA1,7/1.0.
09/2014—06/2016, Electro & Info Engineering (M.S.), Tongji University, Shanghai, GPA 86.5/100.
09/2009—06/2013, Control Engineering (BS), Hangzhou Dianzi University, Hangzhou, GPA 90/100.

HOBBY

Chess, Movie, Football, Table Tennis, Music, Hiking, Jogging, Reading, Drawing, Piano Playing, Traveling

PROJECT EXPERIENCE

12/2020—05/2021, Momenta AI. Senior Software Engineer, R&D Center, Suzhou.
a. Fusion of an ultrasonic sensor and edge detection from an image for obstacle avoidance.
b. IMM-based filter along with Ackermann kinematic constraints for vehicle tracking.
c. 3D ground line fusion for static obstacles, such as pillars, walls, and stairs.
09/2018—11/2020, Qualcomm, System Engineer, R&D Center, Robotic Visual Group, Peking.
a. VIO improved by EIS (IMM tracking + imu pre-integration) to improve image equality for tracking.
b. IR+RGB-based feature fusion to support long-term SLAM over day and night.
c. Programmed the EKF-based framework, VO coupled with IMU, wheel encoder.

03/2020—09/2020, online study, obtained certificate of Shenlan "VIO Code Programming", 8 projects.

02/2018—08/2018, online study, obtained Udacity 2 online program nanodegrees: a) "Robot Software Engineer" Nanodegree, 9 coding projects; b) "Flying Car" Nanodegree, 4 coding projects.

04/2018-09/2018, **Research Assistant, Chair of Navigation & Communication, TUM,**
a. Mitigated the stereo camera Bumblebee and Decawave UWB, wrapped in ROS.
b. Built the synchronization for image pair and UWB via hardware triggering.
c. Adaptive Fusion of UWB for scale recovery and drift correction in SLAM.

Teaching and Pedagogical Experience

Lab Seminar Teaching – Computer Vision for Robotic Grasping, 2023.
AI Summer School Tutor – Generative AI for Robotics Applications.
Master's Thesis Supervision – Supervised six master's students (2022–2024).

Publications in PhD (4 years)

Under review: (as 1st author/corresponding author only, can provide draft on demand)
1. Self-Supervised Shape Part Decomposition for 3D Point Cloud Anomaly Detection (under review of AAAI 2026, supervised by Prof. Matthias Niessner).
2. Style Transfer to Gaussian Splatting (under review of AAAI 2026, supervised by Prof. Matthias Niessner).
3. Wavelet-based Geometry Prior from 2D Diffusion Foundation Model for High-Quality 3D Reconstruction (under review of Transactions of Machine Learning Research).
4. Out-of-Distribution Detection in 3D: A Review (under review of Expert Systems with Applications journal).
5. A Survey of Robotic Navigation and Manipulation with Physics Simulators in the Era of Embodied AI(under review of ACM Computing Survey).
6. Very few Click-based Interactive 3D Segmentation with Semantic Prototype Embedding (Accepted by Robotic Automation Letter with minor changes).
7. Soft Robotic Finger for Texture Unfolding with Visual Feature Fusion (under review of Robotic Automation Letters).

Public (as 1st author only):
1. Geometric Deep Learning, PhD thesis: https://research.kuleuven.be/portal/en/project/3E210484.
2. Equi-GSPR: Equivariant SE(3) Graph Network Model for Sparse Point Cloud Registration (ECCV 2024, **CORE A***, Oral Presentation, Top <2% of 8300 submissions). Springer Link, Poster Link.
3. Adaptive Sampling-based Particle Filter for Visual-inertial Gimbal in the Wild. 2023 IEEE International Conference on Robotics and Automation (ICRA, **CORE A**, Oral). IEEE, 2023. Full paper link, Demo Link.
4. Look Around: Two-stage Scene Video Diffusion from Image (Accepted by ACM Multimedia 2025, **CORE A*,** accepted as oral presentation). Accept list.
5. SurfelReloc: Surfel-based Indoor 3D Re-localization via Attention (Accepted by 2024 CVPR 1st Equi-Vision Workshop, Poster Link).
6. View Geometry-Guided Diffusion Transformer for Long-range Novel View Synthesis (Accepted by International Joint Conference on Neural Networks (IJCNN), Oral). Poster.
7. FocDepthFormer: Transformer with LSTM for Depth Estimation from Focus. (Accepted by the 2024 Australian Joint Conference of AI in Melbourne, Oral, Full paper link).

----------**Not during PhD period**----------

8. Robust data association for object-level semantic slam." *arXiv preprint:1909.13493* (2019). Full paper link.
9. 3D reconstruction & assessment framework based on affordable 2D Lidar. 2018 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM Oral). IEEE, 2018. Full paper link, Demo link.

PATENTS.

1. Xueyang Kang, Leixu, et al., "Collaborative visual SLAM system for a wide range of light spectrum". PCT patent (PCT/CN2020/119769)

2. Xueyang Kang, Shunying Yuan, "Robust VIO + EIS module design for mobile applications". PCT patent (PCT/CN2021/070099)

3. Xueyang Kang, Jun Wu, et al., "Vision-based 3D obstacle groundline fusion framework". CN115512316A.