Jianheng Liu

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I am currently a postgraduate in Harbin Institute of Technology (Shenzhen), China, supervised by **Prof. Haoyao Chen**. I obtained my bachelor degree at Harbin Institute of Technology (Shenzhen), China in 2021. My research interests lie in **Robotics and Autonomous Systems, Localization, Mapping and NeRF**.

Education

Harbin Institute of Technology (Shenzhnen)　　　　　　Recommended exemption Graduate
Control Science and Engineering (Master degree),　　　　　　　　　　　　　　*2021/09–Present*
GPA: 3.27/4, Ranking: 19/31

Harbin Institute of Technology (Shenzhnen)
Automation (Bachelor degree),　　　　　　　　　　　　　　　　　　　*2017/09–2021/06*
GPA: 85.73/100, Ranking: 24/70

Publications

- **Towards Large-Scale Incremental Dense Mapping using Robot-centric Implicit Neural Representation**
  Jianheng Liu, Haoyao Chen. **ICRA, 2024**

- **Active Implicit Object Reconstruction using Uncertainty-guided Next-Best-View Optimziation**
  Jianheng Liu*, Dongyu Yan*, Quanfeng Yu, Haoyao Chen, Mengmeng Fu. **RAL, 2023**

- **Adaptive trajectory tracking of UAV with a cable-suspended load using vision-inertial-based estimation**
  Siqiang Wang, Haoyao Chen, **Jianheng Liu**, Yunhui Liu. **Automatica, 2023**

- **RGB-D Inertial Odometry for a Resource-restricted Robot in Dynamic Environments**
  Jianheng Liu, XuanFu Li, Yueqian Liu, Haoyao Chen. **RA-L and IROS, 2022**

- **Sampling-Based View Planning for MAVs in Active Visual-inertial State Estimation**
  Zhengyu Hua, Jiabi Sun, Fengyu Quan, Haoyao Chen, **Jianheng Liu**, Yunhui Liu. **IROS, 2022**

- **Vision-Inertial-based Adaptive State Estimation of Hexacopter with a Cable-Suspended Load**
  Siqiang Wang, **Jianheng Liu**, Xin Jiang, Haoyao Chen. **RCAR, 2022**

- **Vision-encoder-based Payload State Estimation for Autonomous MAV With a Suspended Payload**
  Jianheng Liu*, Yunfan Ren*, Haoyao Chen, Yunhui Liu. **IROS, 2021**
  * equal contribution

Patents

○ **Vision-encoder-based Suspended Payload State Estimator and Estimation Method**
   CN112991443A，2021.

Honor & Awards

○ **Outstanding Graduates of 2023**
○ **National Scholarships for Masters Students 2022**
○ **Postgraduate Academic Scholarships** of First-class (2021-2022), First-class (2022-2023)
○ **2021-2022 Excellent Student Award**
○ **Undergraduate Academic Scholarships** of First-class (2019-2020), Third-class (2018-2019), Second-class (2017-2018)
○ the First Price for **2020 National ROBOCON Competition**; the Second Price for **2020 National Quadruped Simulation Competition**
○ the Best Design Award for **2020 Smart C-end Technology Innovation Training Camp**
○ the Second Price for **2019 National ROBOCON Competition**
○ the Third Prize for **2019 National Challenge Cup**
○ the Bronze Prize for **2019 Internet plus of Heilongjiang Province**
○ the Golden Price for **2019 ZuGuang Cup of Harbin Institute of Technology (Shenzhen)**
○ **2018-2019 Excellent Student Leader Award** (Undergraduate Monoitor)
○ the Second Prize for **2018 National English Competition for College Strudents**
○ **2017-2018 Excellent Student Award**
○ the Grand Prize for **the second International Youth Drone Competition**

Intern Experiences

○ **Shenzhen InnoX Academy**, Intelligent Driving Center: 2021/09–2022/04
   Researches of semantic visual-lidar structure mapping and deep-learning-based visual SLAM.
○ **Narwal**, Department of Perception: 2022/05–2022/07
   Researches of high-resolution visual-lidar mapping and two-images overlapping scoring algorithms.
○ **Tencent**, Robotics X: 2022/09–2022/12
   Researches of real-time high-resolution elevation mapping for ground/legged robots' planning.

Selected Researches

○ **LVI-SAM-LIVOX:** Easy-to-run LVI-SAM and its application in simulator together with motion planner.
○ **SemanticLineRecon:** Semantic line reconstruction with colmap and line3d++.
○ **MatRix:** An intelligent carpet developed in 2020 XBOT PARK Smart Product Innovation Boot Camp.
○ **quad-controller-SE3 & FlightController**
○ **BezierTrajGenerator & MinimumSnapTrajGenerator & MapManager**