

Tingjun Huang

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Research Interests

Human-Robot Interaction, Computer Vision, Machine Learning, Robot Perception, Robotics

Education

Southern University of Science and Technology (SUSTech) [🔗](#)

Shenzhen, China

B.Eng. in Information Engineering, College of Engineering

Aug. 2021 - Jun. 2025 (expected)

- **GPA: 3.92/4.0 (Rank: 1/24)**
- **Selected Courses:** Robotic Motion and Control (A), Mobile Robot Navigation and Control (A+), Robotic Perception and Intelligence (A-), Digital System Design (A+), Digital Image Processing (A+), Computer Network (A+), Linear Algebra (A-)

Publication

Liu, Bingxi, Yiqun Wang, Huaqi Tao, **Tingjun Huang**, Fulin Tang, Yihong Wu, Jinqiang Cui, and Hong Zhang. "NocPlace: Nocturnal Visual Place Recognition Using Generative and Inherited Knowledge Transfer." *arXiv, February 27, 2024.*

Experience

Artificial Intelligence Research Lab, National University of Singapore (NUS)

Singapore

Research Assistant, supervised by Prof. Lin Shao [🔗](#)

Jun. 2024 - Sep. 2024

- Developed a task-oriented social navigation pipeline integrating natural language descriptions to adapt social strategies for different tasks and social contexts.
- *Ongoing deployment, with plans to submit as first author to IROS 2025.*
- **Keywords:** Social Navigation, Vision Language Model (VLM) Planning, Fast-slow System, RLHF

RoboMaster at SUSTech (Robotics Team) [🔗](#)

Shenzhen, China

Hardware & Embedded Systems Engineer

Sep. 2022 - Aug. 2023

- Designed and optimized custom PCBs with embedded code for mobile robots, including infrared power control, buck-boost converters, and field props.
- Assembled and debugged critical components like RFID systems, enhancing hardware reliability during competitions.
- **Keywords:** PCB Design & Soldering, Embedded Development, Hardware Reliability, Robot Competition

Research and Projects

Heterogeneous Knowledge Distillation for Efficient Visual Place Recognition

Shenzhen, China

Ongoing research, expected to submit to IROS2025 as first author

Sep. 2023 - Present

- Fine-tuned DINOv2 transformers for Visual Place Recognition, and distilled into a lightweight Mamba-based model for efficient mobile deployment.

Nocturnal Visual Place Recognition via Generative and Inherited Knowledge Transfer [🔗](#) [📄](#)

Shenzhen, China

Co-author of a preprint paper

Sep. 2023 - Feb. 2024

- Contributed to NocPlace, a robust VPR model addressing night-to-day domain gaps in urban scene recognition; trained baseline models and evaluated performance across diverse datasets.

Visual Teach-and-Repeat Autonomous Vehicle - University Climbing Project [📄](#)

Shenzhen, China

Core Member, Co-inventor on a pending patent

Oct. 2023 - Sep. 2024

- Co-developed a monocular bio-inspired vision-based Teach-and-Repeat navigation system for differential drive and Ackermann steering platforms using the Gazebo and Webots simulation environments.

Realtime AR Fusion Application [📄](#)

Shenzhen, China

Coursework project for Digital Image Processing

Apr. 2024 - Jun. 2024

- Developed an AR system with a custom ArUco detection method, outperforming OpenCV's implementation in handling partial occlusions and achieving 43.7% faster performance on large images (4096×2304); utilized Poisson blending for seamless image fusion.

Category-Specific Object Grasping for Human-Robot Collaboration

Shenzhen, China

Coursework project for Robotic Motion and Control

May 2024 - Jun. 2024

- Collaborated on implementing an object grasping system for the Kinova Gen3 Lite robotic arm using GGCNN and YOLOv5, enabling accurate grasping of irregularly shaped objects in specified categories.

Skills

Programming	Python (PyTorch, timm, OpenCV, Hugging Face), C/C++, Matlab, Java, VHDL
Tools	ROS, Webots, Unity, Git, Linux, Shell (Bash/Zsh), Keil, Vivado, Android Studio, EasyEDA Pro
Documentation	LaTeX, Markdown, MS Office
Other	PCB Design, SMD Soldering, STM32 Embedded System Development

Awards

Academic Awards and Scholarships

2024	Outstanding Student , Award for Exceptional Performance	<i>SUSTech</i>
2024	Third Class , Merit Student Scholarship	<i>SUSTech</i>
2023	First Prize , RoboMaster University Championship (RMUC) - National	<i>China</i>
2023	Outstanding Student , Award for Exceptional Performance	<i>SUSTech</i>
2023	Second Class , Merit Student Scholarship	<i>SUSTech</i>
2022	Second Prize , Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)	<i>China</i>
2022	Second Class , Merit Student Scholarship	<i>SUSTech</i>
2021	Third Class , Outstanding Freshman Scholarship	<i>SUSTech</i>

Sports Achievements

2021	Rank 1st , Summer School Sports Meet Men's 4x400m Relay	<i>SUSTech</i>
2021	Rank 6th , Summer School Sports Meet Men's 1500m	<i>SUSTech</i>
2021	Rank 7th , Summer School Sports Meet Men's 3000m	<i>SUSTech</i>

Languages

English	TOEFL: 107
Chinese, Cantonese	Native proficiency