

# Wenhao Sun

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## Researching Experience

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### Efficient Embodied AI System

Nov 2023 – Nov 2024

- Designed a comprehensive perception-judgment-decision-execution pipeline for embodied intelligence robots and conducted experiments in both simulation and real-world environments.
- Achieved task completion success rates on par with SOTA methods while reducing computational cost by 6.6x.

### Optimize Real-Time Control System For Embodied AI

Jan 2023 – Nov 2023

- Enhanced Linux to support both real-time and non-real-time capabilities, enabling motion control in the real-time domain and AI model inference in the non-real-time domain without interference.
- Successfully tested with 128 servos under 4000-ms EtherCAT cycle, maintaining system jitter within 50  $\mu$ s.

## Researching Interest

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### Embodied AI System Hardware-Software Co-Design

- Software: Lighting Embodied AI models and pipelines enable robot thinking easily.
- Hardware: More friendly hardware with domain-specific accelerators.
- Middleware: General OS and toolchain friendly for robotics, controlling, and Embodied AI system.

## Education

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### Institute of Computing Technology, Chinese Academy of Sciences (ICT, CAS)

Sep 2023 – Now

MS in Computer Science

- GPA: 3.8/4.0      Ranking: 5% (Estimated)
- Adviser: Prof. Yinhe Han and Dr. Yiming Gan

### Hefei University of Technology (HFUT)

Sep 2019 – June 2023

BS in Survey and Mapping

- GPA: 3.5/4.3      Ranking: 3/37 (Obtain the qualification for admission)

## Internship

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### Embedded Software and Operating System Engineer, Sinsegye

Feb 2023 – Aug 2023

- Optimized Linux real-time performance on diverse kinds of CPU/GPU.
- Tested performance of servos, PLC controllers and kinds of hardware devices.

## Publications

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### DaDu-E: Rethinking the Role of Large Language Model in Robotic Computing Pipeline

Dec 2024

Wenhao Sun, Sai Hou, Zixuan Wang, Bo Yu, Shaoshan Liu, Xu Yang, Shuai Liang, Yiming Gan, Yinhe Han

Sep 2024

### KARMA: Augmenting Embodied AI Agents with Long-and-short Term Memory Systems

Zixuan Wang, Bo Yu, Junzhe Zhao, Wenhao Sun, Sai Hou, Shuai Liang, Xing Hu, Yinhe Han, Yiming Gan

## Technologies

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**Languages:** C++, C, Python, Verilog HDL, Shell, SQL

**Technologies:** Linux, ROS, CODESYS, Gazebo, Moveit, Open-source EDA, Robot and servo hardware debugging

## Awards

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2023 Outstanding Graduates of Anhui Province