

# Kaipeng Fang

Ph.D. Student in Computer Science · UESTC

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## About Me

I am a 3rd-year Ph.D. student (direct Ph.D. program) in Computer Science and Technology at UESTC, advised by Prof. [Lianli Gao](#). My current research focuses on:

- **Embodied AI and Robotics**: leveraging multi-source heterogeneous data (simulation, human demonstration, cross-embodiment data, etc.) to achieve **generalizable robot manipulation learning**. I believe *Scaling Data-Driven Robot Learning* is the key path toward general-purpose robots.
- Previously focused on **Computer Vision and Multimodal Understanding**, with a first-author publication at CVPR.

## Education

**University of Electronic Science and Technology of China** Computer Science · Ph.D. 2023.09 – Present

- Advisor: Prof. Lianli Gao
- Honors: Sichuan Province Outstanding Thesis Nomination, Second-Class Academic Scholarship

**Shandong University of Technology (SDUT)** Computer Science · B.Eng. 2019.09 – 2023.06

- GPA: 89.88/100.0 | Rank: 2/168 (**Top 1.2%**) | CET-4/6: 537/495
- Honors: **National Scholarship**, Shandong Province Outstanding Student, Innovation Pioneer

## Publications

**[RSS 2026 Sub.] Sim-and-Human Co-training for Data-Efficient and Generalizable Robotic Manipulation**

*Kaipeng Fang, Weiqing Liang, Yuyang Li, Ji Zhang, Pengpeng Zeng, Lianli Gao, Jingkuan Song, Heng Tao Shen*

▷ Propose a co-training framework that jointly bridges the sim-to-real visual gap and human-to-robot embodiment gap, achieving **7.1x** data efficiency—only **80** real demos yield **62.5%** OOD success

**[IEEE TMM Sub.] Rethinking Visual Programming with A Code-Tools Boosting Framework**

*Kaipeng Fang, Xu Luo, Pengpeng Zeng, Ji Zhang, Lianli Gao, Jingkuan Song, Heng Tao Shen*

▷ Identify a compounding error problem in Visual Programming from both code generation and tool calling; propose CT-Boost, a training-free multi-agent framework that boosts multiple VQA benchmarks by **4%–7%**

**[CVPR 2024] ProS: Prompting-to-simulate Generalized knowledge for Universal Cross-Domain Retrieval**

*Kaipeng Fang, Jingkuan Song, Lianli Gao, Pengpeng Zeng, Zhi-Qi Cheng, Xiyao Li, Heng Tao Shen*

▷ Pioneer prompt tuning for universal cross-domain retrieval; a two-stage prompting-to-simulate strategy enables a single model to generalize to unseen domain-category combinations

## Competition Awards

National · RoboCom Robot Developer Contest CAIP	<b>Second Prize</b>	2022
International · The 46th ACM-ICPC Asia Regional Contest (Nanjing)	<b>Silver Medal</b>	2021
National · The 7th CCPC China Collegiate Programming Contest (Harbin)	<b>Bronze Medal</b>	2021
International · The 45th ACM-ICPC Asia Regional Contest (Shenyang)	<b>Bronze Medal</b>	2021
National · 2021 GPLT National Finals	<b>Individual First Prize</b>	2021
International · The 45th ACM-ICPC Asia Regional Contest (Jinan)	<b>Bronze Medal</b>	2020
National · The 6th CCPC China Collegiate Programming Contest (Qinhuangdao)	<b>Bronze Medal</b>	2020

## Leadership

Captain & Student Coach, **ACM Programming Contest Team**, SDUT 2020 – 2022

## Personal Projects

ByteGather 2020 – Present

Personal blog (fangkaipeng.com), **200+** articles, **360K+** page views, WeChat subscription **3000+** followers