

# Zhaokai Wang (王肇凯)

Ph.D. candidate at Shanghai Jiao Tong University

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## EDUCATION

<b>Shanghai Jiao Tong University</b>	09/2022 - Present
Joint Ph.D. program with Shanghai AI Laboratory	Advisor: Prof. Jifeng Dai
<b>Peking University</b>	09/2019 - 06/2022
Double bachelor degree in Economics	
<b>Beihang University</b>	09/2018 - 06/2022
B.Eng in computer science	Overall GPA: 3.80

## EXPERIENCE

<b>OpenGVLab, Shanghai AI Laboratory</b>	Shanghai
Research Intern, collaborated with Prof. Jifeng Dai and Dr. Xizhou Zhu	11/2022 - Present
<b>TuTu. AI, Startup</b>	Shanghai
Co-founder & Research Scientist	06/2023 - 02/2024
<b>Fundamental Vision Group, SenseTime</b>	Beijing
Research Intern, collaborated with Prof. Jifeng Dai and Dr. Xizhou Zhu	02/2022 - 10/2022
<b>Sea AI Lab</b>	Remotely at Beijing
Research Intern, collaborated with Prof. Shuicheng Yan and Dr. Jibin Wu	08/2021 - 02/2022
<b>CoLab, Institute of Artificial Intelligence at Beihang University</b>	Beijing
Research Intern, collaborated with Prof. Si Liu	08/2019 - 06/2022

## PUBLICATIONS

- Parameter-Inverted Image Pyramid Networks for Visual Perception and Multimodal Understanding  
**Zhaokai Wang**, Xizhou Zhu, Xue Yang, Gen Luo, Hao Li, Changyao Tian, Wenhan Dou, Junqi Ge, Lewei Lu, Yu Qiao, Jifeng Dai  
Preprint
- Vision-to-Music Generation: A Survey  
**Zhaokai Wang**, Chenxi Bao, Le Zhuo, Jingrui Han, Yang Yue, Yihong Tang, Victor Shea-Jay Huang, Yue Liao  
Preprint
- Sparkle: Mastering Basic Spatial Capabilities in Vision Language Models Elicits Generalization to Composite Spatial Reasoning  
Yihong Tang\*, Ao Qu\*, **Zhaokai Wang\***, Dingyi Zhuang\*, Zhaofeng Wu, Wei Ma, Shenhao Wang, Yunhan Zheng, Zhan Zhao, Jinhua Zhao  
Preprint
- Multimodal Music Generation with Explicit Bridges and Retrieval Augmentation  
Baisen Wang, Le Zhuo, **Zhaokai Wang**, Chenxi Bao, Chengjing Wu, Xuecheng Nie, Jiao Dai, Jizhong Han, Yue Liao, Si Liu  
Preprint
- Does Reinforcement Learning Really Incentivize Reasoning Capacity in LLMs Beyond the Base Model?  
Yang Yue, Zhiqi Chen, Rui Lu, Andrew Zhao, **Zhaokai Wang**, Yang Yue, Shiji Song, Gao Huang  
Preprint
- TIDE: Temporal-Aware Sparse Autoencoders for Interpretable Diffusion Transformers in Image Generation  
Victor Shea-Jay Huang, Le Zhuo, Yi Xin, **Zhaokai Wang**, Peng Gao, Hongsheng Li  
Preprint
- OS Agents: A Survey on MLLM-based Agents for Computer, Phone and Browser Use  
Xueyu Hu, Tao Xiong, Biao Yi, Zishu Wei, Ruixuan Xiao, Yurun Chen, Jiasheng Ye, Meiling Tao, Xiangxin Zhou, Ziyu Zhao, Yuhuai Li, Shengze Xu, Shawn Wang, Xinchun Xu, Shuofei Qiao, **Zhaokai Wang**, Kun Kuang, Tiejong Zeng, Liang Wang, Jiwei Li, Yuchen Eleanor Jiang, Wangchunshu Zhou, Guoyin Wang, Keting Yin, Zhou Zhao, Hongxia Yang, Fan Wu, Shengyu Zhang, Fei Wu  
Preprint
- Mono-InternVL: Pushing the Boundaries of Monolithic Multimodal Large Language Models with Endogenous Visual Pre-training  
Gen Luo\*, Xue Yang\*, Wenhan Dou\*, **Zhaokai Wang\***, Jiawen Liu, Jifeng Dai, Yu Qiao, Xizhou Zhu  
CVPR 2025

9. SynerGen-VL: Towards Synergistic Image Understanding and Generation with Vision Experts and Token Folding  
Hao Li, Changyao Tian, Jie Shao, Xizhou Zhu, **Zhaokai Wang**, Jinguo Zhu, Wenhan Dou, Xiaogang Wang, Hongsheng Li, Lewei Lu, Jifeng Dai  
CVPR 2025
10. Parameter-Inverted Image Pyramid Networks  
Xizhou Zhu\*, Xue Yang\*, **Zhaokai Wang\***, Hao Li, Wenhan Dou, Junqi Ge, Lewei Lu, Yu Qiao, Jifeng Dai  
NeurIPS 2024 **Spotlight (Top 2.5%)**
11. ITINERA: Integrating Spatial Optimization with Large Language Models for Open-domain Urban Itinerary Planning  
Yihong Tang\*, **Zhaokai Wang\***, Ao Qu\*, Yihao Yan\*, Zhaofeng Wu, Dingyi Zhuang, Jushi Kai, Kebin Hou, Xiaotong Guo, Jinhua Zhao, Zhan Zhao, Wei Ma  
EMNLP 2024 & KDD UrbComp 2024 **Best Paper Award**
12. Auto MC-Reward: Automated Dense Reward Design with Large Language Models for Minecraft  
Hao Li\*, Xue Yang\*, **Zhaokai Wang\***, Xizhou Zhu, Jie Zhou, Yu Qiao, Xiaogang Wang, Hongsheng Li, Lewei Lu, Jifeng Dai  
CVPR 2024
13. Video Background Music Generation: Dataset, Method and Evaluation  
Le Zhuo\*, **Zhaokai Wang\***, Baisen Wang\*, Yue Liao, Chenxi Bao, Stanley Peng, Songhao Han, Aixi Zhang, Fei Fang, Si Liu  
ICCV 2023
14. Video Background Music Generation with Controllable Music Transformer  
Shangzhe Di, Zeren Jiang, Si Liu, **Zhaokai Wang**, Leyan Zhu, Zexin He, Hongming Liu, Shuicheng Yan  
ACM Multimedia 2021 **Best Paper Award (1/542)**
15. Confidence-aware Non-repetitive Multimodal Transformers for TextCaps  
**Zhaokai Wang**, Renda Bao, Qi Wu, Si Liu  
AAAI 2021

### SELECTED AWARDS AND HONORS

Best Paper Award, KDD Urban Computing Workshop (UrbComp) 2024	2024
Best Zero to One Award, Alibaba Creator@AI Entrepreneur Hackathon Finals	2024
Outstanding Graduate of Beihang University	2022
Best Paper Award, ACM Multimedia 2021	2021
Best Video Award, IJCAI 2021 Video Competition	2021
First Place, CVPR TextCaps Challenge	2020

### ADDITIONAL INFORMATION

#### Talks:

- 2025.4: Talk on Mono-InternVL at Open Multimodal Gathering Workshop hosted by NUS ShowLab.

#### Activities

- **Conference Reviewer:** ICCV 2023 & 2025, ECCV 2024, CVPR 2024 & 2025, EMNLP 2024, NeurIPS 2024, ICLR 2025, ICML 2025, AAAI 2025.
- **Teaching Assistant:** Fundamentals of Computers (2021), Software Engineering (2022).

#### Skills

- **Programming languages:** Python, C/C++, Java, JavaScript.
- **Scientific packages:** Numpy, Pytorch, Tensorflow.
- **English:** TOEFL 111 (S26) , GRE 327+4.0, CET-4 669, CET-6 612.