

# HAIWEN DIAO

## Three-year Doctoral Candidate

Intelligent Image Analysis and Understanding (IIAU) Lab

School of Information and Communication Engineering

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## Research Interests

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My primary research interests are *Vision-and-Language*, *Transfer Learning* and *Multimodal Large Language Model*. Specifically, my research in the vision-and-language domain strives to build up an efficient system that entails recognizing visual-semantic perception and contextualizing fine-grained correspondence across modalities.

## Experience

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**Beijing Academy of Artificial Intelligence, *Beijing*** **Sep.2023 — Present**  
*Research Internship*

- Director: [Dr. Xinlong Wang](#) (Computer Vision Center)

**Hong Kong University of Science and Technology, *Dalian*** **Jan.2023 — Aug.2023**  
*Remote Cooperation*

- Director: [Dr. Long Chen](#) (Computer Science and Engineering)

**Tencent AI Lab, *Shenzhen*** **Jun.2020 — Mar.2021**  
*2020 Tencent AI Lab Rhino-Bird Focused Research Program*

- Director: [Dr. Ying Zhang](#), [Dr. Lin Ma](#) (Computer Vision Center)

## Education

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**Dalian University of Technology (DUT), *Dalian*** **Sep. 2021 — Present**  
*Ph.D. in Information and Communication Engineering*

- Thesis: Parameter-efficient Transfer Learning, Multi-modal Large Language Model
- Director: [Prof. Huchuan Lu](#)

**Dalian University of Technology (DUT), *Dalian*** **Sep. 2018 — Jun. 2021**  
*M.E. in Information and Communication Engineering*

- Thesis: Person Re-Identification, Vision-and-Language Domain
- Director: [Prof. Huchuan Lu](#)

**Dalian University of Technology (DUT), *Dalian*** **Sep. 2014 — Jun. 2018**  
*B.E. in Electronic Information Engineering*

- GPA: Top3% (School of Information and Communication Engineering)

## Awards & Hornors

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### Awards

- Silver Award of the 9th China International College Students' 'Internet+' Innovation and Entrepreneurship Competition (Industrial Track) (Project Leader) (Top 120/421M) *Ministry of Education, 2023*
- Excellence Award of 2020 Tencent AI Lab Rhino-Bird Focused Research Program (9/27) *Tencent AI Lab, 2021*

### Hornors

- Excellent Graduate of Dalian City (Bachelor's degree) *Dalian City, 2018*
- Lingshui Scholarship (First Prize) (Top 5%) *Dalian City, 2016*
- China National Scholarship (Top 1%) *Ministry of Education, 2015*
- Awarded Learning Excellence Award (First Prize) (Top 5%) *DUT, 2015/16*

## Publications

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### Conference Publications .....

- **UniPT: Universal Parallel Tuning for Transfer Learning with Efficient Parameter and Memory**  
Haiwen Diao, Bo Wan, Ying Zhang, Xu Jia, Huchuan Lu ✉, Long Chen  
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024. [\[Code\]](#)
- **Similarity Reasoning and Filtration for Image-Text Matching**  
Haiwen Diao, Ying Zhang, Lin Ma, Huchuan Lu ✉  
Association for the Advancement of Artificial Intelligence (AAAI), 2021. (google citations: 250+) [\[Code\]](#)

### Journal Publications .....

- **Deep Boosting Learning: A Brand-new Cooperative Approach for Image-Text Matching**  
Haiwen Diao, Ying Zhang, Shang Gao, Xiang Ruan, Huchuan Lu ✉  
IEEE Transactions on Image Processing (TIP), 2024. [\[Code\]](#)
- **Plug-and-Play Regulators for Image-Text Matching**  
Haiwen Diao, Ying Zhang, Wei Liu, Xiang Ruan, Huchuan Lu ✉  
IEEE Transactions on Image Processing (TIP), 2023. [\[Code\]](#)

### Preprints (Under Review) .....

- **Unveiling Encoder-Free Vision-Language Models**  
Haiwen Diao\*, Yufeng Cui\*, Xiaotong Li, Yueze Wang, Huchuan Lu ✉, Xinlong Wang ✉  
Under Review. [\[Code\]](#)
- **SHERL: Synthesizing High Accuracy and Efficient Memory for Resource-Limited Transfer Learning**  
Haiwen Diao, Bo Wan, Xu Jia, Yunzhi Zhuge, Ying Zhang, Huchuan Lu ✉, Long Chen  
Under Review. [\[Code\]](#)
- **GSSF: Generalized Structural Sparse Function for Deep Cross-modal Metric Learning**  
Haiwen Diao, Ying Zhang, Shang Gao, Jiawen Zhu, Long Chen, Huchuan Lu ✉  
Under Review. [\[Code\]](#)
- **DenseFusion-1M: Merging Vision Experts for Comprehensive Multimodal Perception**  
Xiaotong Li\*, Fan Zhang\*, Haiwen Diao\*, Yueze Wang, Xinlong Wang, Lingyu Duan ✉  
Under Review. [\[Code\]](#)
- **LLMs Can Evolve Continually on Modality for X-Modal Reasoning**  
Jiazuo Yu, Haomiao Xiong, Lu Zhang ✉, Haiwen Diao, Yunzhi Zhuge, Lanqing Hong, Dong Wang, Huchuan Lu, You He, Long Chen  
Under Review. [\[Code\]](#)
- **MoTrans: Customized Motion Transfer with Text-driven Video Diffusion Models**  
Xiaomin Li, Xu Jia ✉, Qinghe Wang, Haiwen Diao, mengmeng Ge, Pengxiang Li, You He, Huchuan Lu  
Under Review. [\[Code\]](#)
- **Exploring Dynamic Transformer for Efficient Object Tracking**  
Jiawen Zhu, Xin Chen, Haiwen Diao, Shuai Li, Jun-Yan He, Chenyang Li, Bin Luo, Dong Wang, Huchuan Lu ✉  
Under Review. [\[Code\]](#)

### Patents Declaration .....

1. **An Image Retrieval Method and Related Device**  
Huchuan Lu, Haiwen Diao, Ying Zhang, Lin Ma  
CN111914113A, China, 2020.

## Professional Services

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### Journal Reviewer:

IEEE TPAMI, IEEE TIP

### Conference Reviewer:

CVPR (2022 - 2024), ICCV (2023), ECCV (2022 - 2024), AAAI (2023 - 2024), ACMMM(2024)

## References

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- **Prof. Huchuan Lu (Ph.D. Advisor)**  
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- **Dr. Lin Ma (Industrial Director)**  
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- **Dr. Xinlong Wang (Industrial Director)**  
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Email: wangxinlong@baai.ac.cn
- **Dr. Ying Zhang (Industrial Director)**  
Tencent WeiXin Group (WXG)  
Shenzhen, Guangdong 518000, China  
Email: zydl0907@gmail.com
- **Asst. Prof. Long Chen (Remote Director)**  
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Email: longchen@cse.ust.hk