

# PENGFEI ZHOU

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## SUMMARY

A third-year master's student majoring in Artificial Intelligence, Institute of Computing Science, **Chinese Academy of Sciences**, with rich experience in computer vision and multimedia processing and analysis. **9 papers have been published** (5 as first author), and several more are under review in top-tier conferences&journals. Invited reviewer of well-known conferences&journals and co-organizer of a conference. Looking for Ph.D. positions in 2024 Fall.

## EDUCATION

Master, Artificial intelligence, Advised by Weiqing Min and Shuqiang Jiang	Graduating Jun 2024
Chinese Academy of Sciences, Beijing, China	<b>National Scholarship</b>
Institute of Computing Technology	GPA: 3.62/4

Bachelor, Internet of Things Engineering, Advised by Cong Bai	Graduated Jun 2021
Zhejiang University of Technology, Hangzhou, China	<b>National Scholarship</b>
College of Computer Science and Technology	Grade: 84/100

## PUBLICATIONS

### Published (Representative)

- **Pengfei Zhou**, Weiqing Min, Yang Zhang, Jiajun Song, Ying Jin, and Shuqiang Jiang. SeeDS: Semantic Separable Diffusion Synthesizer for Zero-Shot Food Detection, pp. 8157-8166, ACM International Conference on Multimedia, 2023
- **Pengfei Zhou**, Kaining Ying, Zhenhua Wang, Dongyan Guo, and Cong Bai. Self-Supervised Enhancement for Named Entity Disambiguation via Multimodal Graph Convolution, IEEE Transactions on Neural Networks and Learning Systems, 2022, doi: 10.1109/TNNLS.2022.3173179
- **Pengfei Zhou**, Cong Bai, Jie Xia, and Shengyong Chen, CMRDF: A Real-Time Food Alerting System Based on Multimodal Data, IEEE Internet of Things Journal, 2022, doi: 10.1109/JIOT.2020.2996009
- **Pengfei Zhou**, Cong Bai, Kaining Ying, Jie Xia, and Lixin Huang, RWMF: A Real-World Multimodal Foodlog Database, pp. 962-968, International Conference on Pattern Recognition, 2021
- Zhiwei Zha, **Pengfei Zhou**, and Cong Bai. Exploring Implicit and Explicit Relations with Dual Relation-Aware Network for Image Captioning, International Conference on Multimedia Modeling, pp. 97-108, 2022
- Kaining Ying, Zhenhua Wang, Cong Bai, and **Pengfei Zhou**. ISDA: Position-Aware Instance Segmentation with Deformable Attention, IEEE International Conference on Acoustics, Speech and Signal Processing, pp. 2619-2623, 2022

### Under Review

- **Pengfei Zhou**, Weiqing Min, Jiajun Song, Yang Zhang, and Shuqiang Jiang. Knowledge-Enhanced Features Synthesizer for Real-World Zero-Shot Food Detection, IEEE Transactions on Image Processing, 2023
- Weiqing Min, **Pengfei Zhou**, Leyi Xu, Tao Liu, Tianhao Li, Mingyu Huang, Ying Jin, Yifan Yi, Min Wen, Shuqiang Jiang and Ramesh Jain. From Plate to Production: Artificial Intelligence in Modern Consumer-Driven Food Systems, Proceedings of the IEEE, 2023

## RESEARCH EXPERIENCE

Institute of Computer Vision, Zhejiang University of Technology, Hangzhou, China	Mar 2019 – Jun 2021
Research Assistant Worked with Cong Bai	

- Researched on multimodal retrieval in the National Natural Science Fund project (No. 61976192)
- Led a project funded by Undergraduate Innovation Entrepreneurship Training Program
- Won second place in LMRT of ImageCLEFlog2019 Competition (as team leader)
- Authored 5 academic papers, 3 Chinese patents and a software copyright (granted)

Hangzhou Xiao Bin Technology Co. LTD, Hangzhou, China	Jan 2020 – Sep 2021
Co-founder, CTO	

- Led the smart home system research and development team
- Developed the visual recognition system of the smart bin (classification accuracy is higher than 99%)
- Won 10+ prizes in competitions including First Prize in National Undergraduate IoT Design Contest, Silver Award in International "Internet Plus" College Student Innovation and Entrepreneurship Competition in Zhejiang

**State Key Laboratory of CAD&CG, Zhejiang University, Hangzhou, China**  
**Visiting Student Working with Hao Chen and Chunhua Shen**

Jun 2023 – Present

- Researching on multimodal large language models
- Applying large language models on open-set scenarios

## PROJECTS

### Online Illegal Tobacco Information Monitoring System

Jul 2021 – Mar 2022

Led a team of 3 to develop illegal information monitoring system for Jiaxing Tobacco Monopoly Administration

- Developed an online monitoring system for illegal tobacco sales information based on the entity recognition model
- The project was transformed into a practical application by the Tobacco Monopoly Administration
- Published a relevant paper in IEEE TNNLS, and authorized three software copyrights (granted)

### Visual Food Detection System

Apr 2022 – Oct 2023

Leading a team of 8 to develop food detection systems at Institute of Intelligent Computing Technology, Suzhou, CAS

- Developed the detection algorithm with accuracy higher than 98% in the real-world scene
- Realizing the transformation of unmanned, intelligent and precise nutrition for multiple canteens and restaurants
- Authorized a Chinese patent and submitted related papers to ACM MM and IEEE TIP

## MAJOR HONORS & AWARDS

<b>Graduate National Scholarship</b>	Ministry of Education of the People's Republic of China	Oct 2023
<b>Undergraduate National Scholarship</b>	Ministry of Education of the PRC	Dec 2020
E-Funds Fellowship	Institute of Computing Technology, Chinese Academy of Sciences	Jan 2023
Zhejiang Provincial Outstanding Graduate	Zhejiang Provincial Department of Education	Jun 2021
Second Prize of National Service Outsourcing Competition	Ministry of Education of the PRC	Aug 2020
Outstanding and Honorary Student in colleges, ZJUT S&T Award, etc.	Zhejiang University of Technology	2020 - 2021

## ACADEMIC ACTIVITIES

**Reviewer:** IEEE TNNLS, IEEE TMM, ACM MM 2023, ICMR 2023, ICME 2023, ICME 2022, and ICPR 2022

**Co-organizer:** China Multimedia 2023 Conference (1K+ attendees)

## OTHER ACTIVITIES

**Campus ambassador:** Tencent Holdings Limited Co.Ltd

**Volunteer service:** Alibaba Cloud Computing Conference 2018 (1M+ attendees)

**Other interests:** Changed major (studied civil engineering at Institute of Architectural Engineering, ZJUT)

## SKILLS

**Language:** English (98 out of 120 in TOEFL, and 7.0 out of 9 in IELTS), Chinese

**Programming:** Python (Pytorch), C++, C, MATLAB

## RESEARCH INTERESTS

**Current:** Working on computer vision (zero-shot detection) and multimedia content analysis (food computing)

**Interested in:** Multimodal large language models, vision-language multimodal learning, and multimedia systems