Ziyi ZHAO

Tongji University, Shanghai, China

+86 130-8942-3813 Zhaozi1@tongji.edu.cn Jacoo-Zhao.github.io

RESEARCH INTERESTS

Computer Vision:	Medical Imaging,	3D Modelling
Deep Learning:	Graph Neural Network,	Trustworthy Deep Learning

EDUCATION

Tongji University ***Sep 2020–July 2023***

M.Eng College of Electronics and Information Engineering Shanghai, China

GPA: 4.61/5.0, Rank: top 5%

École polytechnique fédérale de Lausanne (EPFL) ***Feb 2022 - Dec 2022***

Exchange School of Computer and Communication Sciences Lausanne, Switzerland

GPA: 5.875/6

Jilin University ***Sep 2016 - July 2020***

B.Eng College of Instrument and Electrical Engine Jilin, China

GPA: 3.25/4.0, Outstanding Undergraduate's Paper Award (Departmental)

PUBLICATIONS

[1] Zhao, Z., Kiciroglu, S., Vinzant, H., Cheng, Y., Katircioglu, I., Salzmann, M., & Fua, et al. "3D Pose Based Feedback For Physical Exercises." Proceedings of the Asian Conference on Computer Vision.2022.

[2] Zhao, Z., Liu, H., Li, S., Pang, J., Zhang, M., Qin, Y., ... & Wu, Q., et al. "A Review of Intelligent Music Generation Systems" arXiv preprint arXiv:2211.09124 (2022). Under review by Applied Intelligence

[3] Ziyi Zhao, "Chinese Patent: An automatic control device for window shades", China National Intellectual Property Administration. (under review) 2022. Application No.202223147747.9.

[4] Ziyi Zhao, "Software Copyright: Automatic colour recognition system based on HSV algorithm", Issued by China National Intellectual Property Administration 2020. Registration No.2020SR0314601.

RESEARCH EXPERIENCE

1. 6D Pose Detection for Visual Navigation | CodaLab Competition ***Sep.2022–Dec.2022***

Supervisor: Dr. Mathieu Salzmann(Senior Scientist) and Chen Zhao(PhD Candidate) CVLab, EPFL, Switzerland

- Goal: Democratizing aerial navigation through robust and data-scalable computer vision
- Key points: 1.Limited or even no real/domain specific data (zero-shot) 2.From coarse to fine (Image retrieval, NetVLAD) 3.Structure from motion (SFM), Colmap

2. 3D Pose Based Motion Correction for Physical Exercises | Published thecvf.com ***Feb.2022–Jun.2022***

Supervisor: Prof.Pascal Fua and Sena Kiciroglu(PhD) CVLab, EPFL, Switzerland

- Goal: Safer and more effective unsupervised self-rehabilitation exercises and physical training
- Key points: 1.A double branches **learning-based framework** 2.**Graph Convolutional Network** (GCN) architecture + Feedback module 3.A **new dataset** with ~120K annotated frames

3. Ultra Wide Band (UWB) Pinpointing in the Presence of Interference | National Third Prize ***Sep.2021–Oct.2021***

Huaiwei Cup The 18th China Post-Graduate Mathematical Contest in Modeling Tongji University, China

- Goal: Research into how ultra-wideband (UWB) systems can achieve precise positioning in the face of signal interference
- Key points: 1.Data pre-processing, **statistical feature** extraction 2.Support Vector Machine(**SVM**), k-Nearest Neighbor(**KNN**), Extreme Learning Machine(**ELM**) 3.Yield 85.0523mm localization accuracy

4. COVID-19 Diagnosis based on CT images Using a Transfer Learning approach ***Sep.2020–Dec.2020***

Supervisor: Prof.Mingyu You Tongji University, China

- Goal: Detect COVID-19 in early stage using CT images and contain its spread.
- Key points:1.**Few-shot learning** 2.Data augmentation 3.**Transfer learning**: pretrain on LUNA16 dataset 4.Model architecture inspired by: CRNet in CVPR 2020

INDUSTRY EXPERIENCE

Intern | Immersive Interaction Research Group ***Aug.2022–Sep.2022***

Supervisor: Dr.Ronan Boulic, EPFL EPFL, Switzerland

- Responsibility: Run controlled experiment in Virtual Reality, Interact with the experiment participants
- Contributions: 1. Collected data from 50 subjects (over 50 million rows of movement track data)
- Tools: Unity3D, RStudio

Intern | NIO, Shanghai ***Dec.2020--May.2021***

Supervisor: Mrs.Wen Su, Quality Department Shanghai, China

- Responsibility: Data analysis, Management of software development
- Contributions: Jointly developed driver assistance software is used on NIO's latest Model ET&
- Tools: SQL, Jira, Zeppelin, Confluence

Intern | Air Products, Shanghai ***Jul.2020–Dec.2020***

Supervisor: Mr.Wenlong Shen, Asia Technique Operation Support (ATOS), Air Products Tongji University, China

- Responsibility: Mobile application development based on Microsoft Power Platform
- Contributions: Improving paperless working in factories across Asia and impacting over 1000 people
- Tools: Power Apps, Power Automate, Office365

HONORS

Membership | Chinese Association for Artificial Intelligence, CAAI *Oct.2020–Dec.2024*

Membership | Chinese Society of Optimization, Overall Planning and Economic Mathematics *Sep.2019–Dec.2024*

Certificate of Professional Development | China Instrument and Control Society *Sep.2019–Dec.2024*

National Third Prize | "Huaiwei Cup" The 18th China Post-Graduate Mathematical Contest in Modeling, *Dec.2021*

National Second Prize | The 9th MathorCup Mathematical Modeling Competition for College Students *Jun. 2019*

Provincial Second Prize | Mathematical Modeling Competition of Jilin Province *May 2019*

Jilin University Scholarship of Excellence *2016-2020*

SERVICES

Teach Assistant | Course: Advance Artificial Intelligence, Tongji University *Sep.2021-Jan 2022*

Conference Volunteer | The China Automation Congress(CAC) 2020 *Nov.2020*

Outstanding Member Award | The Graduate Student Union of the College of Electronic and Information Engineering, Tongji University *Sep.2020-Sep.2021*

Volunteer | Blood donation overall 1200ml *2016-2021*

Volunteer | Science Popularization Support Service in Museum of Jilin University *Feb.2019- Oct.2019*

MISC

Language	English: **IELTS 7.0 / Sep.2022**, French: A1
Programming	Python, C, RStudio, JavaScript, HTML, CSS
Library	Torch, NumPy, OpenCV, SciPy, Matplotlib
Hobbies	Guitar, Photography, Chess