Huaxi Huang

BASIC INFORMATION

Gender: Male
Add: 701 Yunjin Road, Xuhui, Shanghai, China
E-mail: tjuhhx@outlook.com

EDUCATION

University of Technology Sydney **Apr. 2022**
- Doctor of Philosophy

NIT, Zhejiang University **Mar. 2017 - Feb. 2018**
- Visiting Research Student

Tianjin University **Jan. 2017**
- Master of Engineering, Major in Computer Science

Tianjin University **Jul. 2014**
- Bachelor of Engineering, Major in Software Engineering

WORKING EXPERIENCE

Shanghai AI Laboratory
Apr. 2024 - Prsent
- Researcher

Lumachain
Dec. 2023 - Apr. 2024
- Computer Vision and Machine Learning Engineer

Data61, Commonwealth Scientific and Industrial Research Organisation
Mar. 2022 - Dec. 2023
- CERC Research Fellow

University of Technology Sydney **July. 2021 - Jan. 2022**
- Research Assistant

RESEARCH EXPERIENCE

Shanghai AI Laboratory
Apr. 2024 - Present
- **Research Area:** LLM, MLLM, AIGC

Lumachain AI Group
Dec. 2023 - Apr. 2024
- **Research Area:** Computer Vision, Machine Learning and Multimedia

ICV Group (Data61, CSIRO) and the Sydney AI Centre (USYD)

Mar. 2022 - Dec. 2023

- **Supervisor:** Professor Dadong Wang, Professor Tongliang Liu
- **Research Area:** Trustworthy Machine Learning, Computer Vision

Lab of Multimedia and Data Analytics (University of Technology Sydney)

Mar. 2018 - Feb.2022

- **Supervisor:** Professor Jian Zhang, Professor Qiang Wu
- **Research Area:** Few-shot Learning, Fine-grained Classification, Railway Infrastructure Defects Recognition

Lab of Intelligent Information Technology and Intelligent System (Ningbo Insitute of Technology, Zhejiang University)

Mar. 2017 - Feb. 2018

- **Advisor:** Professor Chao Hu
- **Research Area:** Defects Detection, Image Processing

Lab of Machine learning and Data Mining (Tianjin University)

Sept. 2014 - Jan. 2017

- **Supervisor:** Professor Qinghua Hu, Professor Changqing Zhang
- **Research Area:** Active Learning, Multi-view Learning

PROJECT

Differential Privacy Preservation Machine Learning on Image Data

Mar. 2022 - Dec. 2023

- Created a fishery dataset from raw videos/images
- Designed a Diffusion-based Differential Privacy model to protect fishermen's privacy information

Autonomous Grading of Dynamic Blood Vessel Markers in the Eye using Deep Learning

July. 2021 - Jan. 2022

- Constructed a retina-video dataset from raw video data
- Developed a deep learning framework for retina video classification

Rail Infrastructure Defect Detection Through Video Analytics (UTS-RMCRC-Sydney Trains)

Apr. 2018 - Apr. 2021

- Created and labeled a railway infrastructure defect dataset
- Developed an automated defect recognition system using computer vision and deep learning
- Designed four deep learning algorithms to address the challenge of limited labeled data for defect detection

Mobile Phone Workpiece Surface Defects Detection

Mar. 2017 - Feb. 2018

- Set up a dataset for mobile phone defects

- Designed and implemented two machine vision-based systems for detecting surface defects

PUBLICATIONS

- **Huaxi Huang**, Xin Yuan, Qiyu Liao, Dadong Wang, Tongliang Liu, " Enhancing User-Centric Privacy Protection: An Interactive Framework through Diffusion Models and Machine Unlearning ". (**Under Review)**
- Fan Liu and Sai Yang and Delong Chen, **Huaxi Huang**, Jun Zhou, " Few-shot classification guided by generalization error bound". Pattern Recognition (**PR**), 2024, 145: 109904. (**CORE A***) doi:10.1016/j.patcog.2023.109904
- **Huaxi Huang**, Hui Kang, Sheng Liu, Olivier Salvado, Thierry Rakotoarivelo, Dadong Wang, Tongliang Liu. " PADDLES: Phase-Amplitude Spectrum Disentangled Early Stopping for Learning with Noisy Labels ", Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023. (**CORE A***) doi:10.1109/ICCV51070.2023.01533
- Wenbo Xu, **Huaxi Huang**, Ming Cheng, Litao Yu, Qiang Wu, Jian Zhang. " Masked Cross-image Encoding For Few-shot Segmentation ". IEEE International Conference on Multimedia and Expo (**ICME Oral**), 2023. (**CORE A**) doi:10.1109/ICME55011.2023.00133
- **Huaxi Huang**, Junjie Zhang, Jian Zhang, Qiang Wu, Chang Xu. " PTN: A Poisson Transfer Network for Semi-supervised Few-shot Learning ". 35th AAAI Conference on Artificial Intelligence (**AAAI**), 2021, pp.1602-1609. (**CORE A***) https://ojs.aaai.org/index.php/AAAI/article/view/16252
- **Huaxi Huang**, Junjie Zhang, Jian Zhang, Qiang Wu, Chang Xu." TOAN: Target-Oriented Alignment Network for Fine-Grained Image Categorization with Few Labeled Samples ". IEEE Transactions on Circuits and System for Video Technology (**TCSVT**), 2021.(**JCR Q1**) doi:10.1109/TCSVT.2021.3065693.
- **Huaxi Huang**, Junjie Zhang, Jian Zhang, Jingsong Xu, Qiang Wu. " Low-Rank Pairwise Alignment Bilinear Network For Few-Shot Fine-Grained Image Classification ". IEEE Transactions on Multimedia (**TMM**), 2021, vol: 23, pp: 1666-1680. (**CORE A***) doi:10.1109/TMM.2020.3001510.
- **Huaxi Huang**, Junjie Zhang, Jian Zhang, Qiang Wu and Jingsong Xu, " Compare More Nuanced: Pairwise Alignment Bilinear Network for Few-Shot Fine-Grained Learning ". IEEE International Conference on Multimedia and Expo (**ICME Oral**), Shanghai, China, 2019, pp. 91-96. (**CORE A**) doi:10.1109/ICME.2019.00024.
- **Huaxi Huang**, Jingsong Xu, Jian Zhang, Qiang Wu, Christina Kirsch. " Railway Infrastructure Defects Recognition using Fine-grained Deep Convolutional Neural Network ". IEEE International Conference on Digital Image Computing: Techniques and Application (**DICTA**), 2018, pp 1-8. DOI: 10.1109/DICTA.2018.8615868

- **Huaxi Huang**, Chao Hu, et al. " Surface Defects Detection for Mobilephone Panel workpieces based on Machine Vision and Machine Learning ". IEEE International Conference on Information and Automation (**ICIA**), 2017, pp. 370-375. DOI: 10.1109/ICInfA.2017.8078936
- **Huaxi Huang**, Changqing Zhang, Qinghua Hu, Pengfei Zhu. " Multi-View Representative and Informative induced Active Learning ". Pacific Rim International Conference on Artificial Intelligence (**PRICAI**), 2016, pp. 139-151. (**CORE B**) DOI: 10.1007/978-3-319-42911-3_12

AWARDS

- 2024 Australian Pawsey Supercomputing Research Centre Pawsey Partner Scheme Grant
- 03/2022-12/2023 CERC ResearchPlus Fellowship, CSIRO
- 04/2021-10/2021 UTS President's Scholarship, UTS
- 09/2019 UTS HDR Collaboration Grant, UTS
- 04/2018-04/2021 Higher Degree by Research Industry Scholarship, UTS
- 04/2018-10/2021 UTS International Research Scholarship, UTS
- 01/2017 Outstanding Graduates of Tianjin University
- 12/2015 Merit Student of Tianjin University

SERVICE

- Session Chair of ICME23, Area Chair of MMSP22. Reviewer of IEEE T-PAMI, IJCV, IEEE T-IP, IEEE T-MM, IEEE T-CSVT, Machine Learning Journal, WWWJ, PRL, IET Computer Vision, ICLR, ICML, NeurIPS, AAAI, ACM MM, WACV, ICME, ACML, ICASSP, VCIP, etc

SKILLS

- Computer Vision, Machine Learning, Image Processing, Python, C++, Deep Learning, PyTorch, TensorFlow, SQL, Linux, Latex