

Huaxi Huang

BASIC INFORMATION

Gender: Male

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EDUCATION

University of Technology Sydney

Apr. 2022

- Ph.D. in Artificial Intelligence

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

Data61, Commonwealth Scientific and Industrial Research Organisation

Mar. 2022 - Present

- Postdoctoral Research Fellow

University of Technology Sydney

July. 2021 - Jan. 2022

- Research Assistant

RESEARCH EXPERIENCE

Imaging and Computer Vision Group (Data61, Commonwealth Scientific and Industrial Research Organisation)

Mar. 2022 - Present

- **Supervisor:** Professor Dadong Wang, Dr. Tongliang Liu
- **Research Area:** Differential Privacy Preservation Machine Learning on Image Data, Computer Vision, Machine Learning

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

Mar. 2018 - Feb. 2022

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

Lab of Intelligent Information Technology and Intelligent System (Ningbo Institute 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, Changqing Zhang
- **Research Area:** Active Learning, Multi-view Learning.

INDUSTRY PROJECT

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

July. 2021 - Jan. 2022

- Retina-video dataset construction from the raw videos.
- Designed a deep learning based retina video classification framework.

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

Apr. 2018 - Apr. 2021

- Collected, labeled, and established a railway infrastructure defects dataset.
- Designed an automated image/video railway infrastructure defects recognition framework using computer vision and deep learning technologies.
- Designed four deep learning algorithms to solve the limited labeled problem in dealing with railway infrastructure defects recognition task.

Mobile Phone Workpiece Surface Defects Detection

Mar. 2017 - Feb. 2018

- Collected, annotated, and set up a mobile phone defects dataset.
- Designed and implemented two automatic machine-vision based methods for mobile phone workpiece surface defects detection.

PUBLICATIONS

- **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**, J. Zhang, J. Zhang, Q. Wu and J. 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, et al. “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 Mobile-phone 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

- 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, University of Technology Sydney
- 04/2018-10/2021 UTS International Research Scholarship, University of Technology Sydney.
- 01/2017 Outstanding Graduates of Tianjin University
- 12/2015 Merit Student of Tianjin University

SERVICE

- Meta-Reviewer of MMSP22. Reviewer of IEEE T-PAMI, IEEE T-MM, IEEE T-CSVT, MLJ, WWWJ, PRL, ICLR, ACM MM, ICME, ACML, VCIP.

TEACHING EXPERIENCE

- Teaching Assistance: A Introduction of Machine Learning, Ningbo Institute of Technology, Zhejiang University, Spring 2017.
- Teaching Assistance: Advanced Computer Vision, Tianjin University, Autumn 2016.