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Postdoc | MultiMedia Lab (MMLab)
Chinese University of Hong Kong



SUMMARY

Weihong Li is currently a postdoc within the MultiMedia Lab (MMLab) at the Chinese University of Hong Kong, working with Dr. [Xiangyu Yue](#). Before MMLab, he was a research associate (postdoc) within the [VICO Group](#) led by Dr. [Hakan Bilen](#) in the School of Informatics at the University of Edinburgh. Prior to postdoc, he completed his PhD in the VICO group at the University of Edinburgh, supervised by Dr. [Hakan Bilen](#) and Prof. [Timothy Hospedales](#). His research interests are in computer vision and machine learning, with a focus on multi-task/domain learning and learning visual models from limited human supervision. His PhD thesis has been awarded the BMVA **Sullivan Doctoral Thesis Prize Runner-Up**. His [MTPSL](#) paper is awarded the **CVPR 2022 Best Paper Nominee**. He has been a reviewer for top-tier conferences such as CVPR, ICCV, Neurips and journals such as TPAMI et al and he received the **top reviewer award** at Neurips'23. He was invited to give talks at VGG, Sun Yat-sen University, HKUST-GZ et al. Before Edinburgh, he has completed his master and bachelor at Sun Yat-sen University, working with Prof. [Wei-Shi Zheng](#). During the master program, he has visited Queen Mary University of London to work with Prof. [Shaogang Gong](#).

RESEARCH INTERESTS

Universal Representation Learning: To design intelligent agents that are equipped with a wide range of problem-solving skills, and quick to adapt to new domains, modalities and tasks.

Learning models from limited labels: To design learning algorithms that can learn general representations from minimum human supervision or data.

3D Deep Learning: To design learning algorithms that are able to understand the geometry and reason about our world given visual observations.

EDUCATION & EXPERIENCE

CHINESE UNIVERSITY OF HONG KONG

2024.01 -

POSTDOC IN MULTIMEDIA LAB (MMLAB), WORKING WITH DR. [XIANGYU YUE](#)

- Working on Multi-task/domain/modal learning, foundation model, 3D deep learning.

UNIVERSITY OF EDINBURGH

2022.08 - 2023.10

RESEARCH ASSOCIATE (POSTDOC) IN SCHOOL OF INFORMATICS, WORKING WITH DR. [HAKAN BILEN](#)

- Working on Universal Representation Learning, 3D Deep Learning.

UNIVERSITY OF EDINBURGH

2018.09 - 2022.08

PHD STUDENT IN THE VISUAL COMPUTING (VICO) GROUP

- Working on Multi-task/domain Learning, Semi-supervised Learning, Meta-learning, Few-shot learning
- **Supervisor**: Dr. [Hakan Bilen](#), Prof. [Timothy Hospedales](#)
- **Thesis**: [Learning Universal Representations Across Tasks and Domains](#)
- **Examiners**: Dr. [Amir Zamir](#), Dr. [Laura Sevilla](#)

QUEEN MARY UNIVERSITY OF LONDON

2017.10 - 2018.04

VISITING MASTER STUDENT IN THE QUEEN MARY COMPUTER VISION LABORATORY

- Working on Video Search
- **Supervisor**: Prof. [Shaogang Gong](#), Prof. [Wei-Shi Zheng](#)

SUN YAT-SEN UNIVERSITY

2011.09 - 2018.07

B.SC & M.SC IN THE INTELLIGENCE SCIENCE AND SYSTEM LAB (ISEE)

- Working on Detection, Tracking and Machine Learning
- **M. Sc Thesis**: Important People Detection and Cross-Camera Pedestrian Tracking
- **Supervisor**: Prof. [Wei-Shi Zheng](#) GPA: 3.8/4.0

SELECTED PUBLICATIONS

- **Wei-Hong Li**, Steven McDonagh, Ales Leonardis, Hakan Bilen, "Multi-task Learning with 3D-Aware Regularization", ICLR, 2024.
- **Wei-Hong Li**, Xialei Liu, Hakan Bilen, "Universal Representations: A Unified Look at Multiple Task and Domain Learning", International Journal of Computer Vision (IJCV), 2023.
- **Wei-Hong Li**, "Learning universal representations across tasks and domains", University of Edinburgh, PhD thesis, 2022. **The BMVA Sullivan Doctoral Thesis Prize Runner-Up**
- Yu-Kun Qiu, Fa-Ting Hong, **Wei-Hong Li**, Wei-Shi Zheng, "Learning Relation Models to Detect Important People in Still Images", Transactions on Multimedia (TMM), 2022.
- **Wei-Hong Li**, Xialei Liu, Hakan Bilen, "Learning Multiple Dense Prediction Tasks from Partially Annotated Data", Proceedings of International Conference on Computer Vision and Pattern Recognition (CVPR), 2022. **Best Paper Nominee** (33/8161)
- **Wei-Hong Li**, Xialei Liu, Hakan Bilen, "Cross-domain Few-shot Learning with Task-specific Adapters", Proceedings of International Conference on Computer Vision and Pattern Recognition (CVPR), 2022.
- **Wei-Hong Li**, Xialei Liu, Hakan Bilen, "Universal Representation Learning from Multiple Domains for Few-shot Classification", Proceedings of International Conference on Computer Vision (ICCV), 2021.
- **Wei-Hong Li**, Chuan-Sheng Foo, Hakan Bilen, "Learning to Impute: A General Framework for Semi-supervised Learning". (Preprint)
- **Wei-Hong Li**, Hakan Bilen, "Knowledge Distillation for Multi-task Learning", Proceedings of European Conference on Computer Vision Workshop on Imbalance Problems in Computer Vision (ECCVW), 2020.
- Fa-Ting Hong, Xuanteng Huang, **Wei-Hong Li**, Wei-Shi Zheng, "MINI-Net: Multiple Instance Ranking Network for Video Highlight Detection", Proceedings of European Conference on Computer Vision (ECCV), 2020.
- Fa-Ting Hong*, **Wei-Hong Li***, Wei-Shi Zheng, "Learning to Detect Important People in Unlabelled Images for Semi-supervised Important People Detection", Proceedings of International Conference on Computer Vision and Pattern Recognition (CVPR), 2020.
- **Wei-Hong Li***, Fa-Ting Hong*, Wei-Shi Zheng, "Learning to Learn Relation for Important People Detection in Still Images", Proceedings of International Conference on Computer Vision and Pattern Recognition (CVPR), 2019.
- **Wei-Hong Li**, Zhuowei Zhong, Wei-Shi Zheng, "One-pass Person Re-identification by Sketched Online Discriminant Analysis", Pattern Recognition (PR), 2019.
- **Wei-Hong Li**, Benchao Li, Wei-Shi Zheng, "PersonRank: Detecting Important People in Images", Proceedings of International Conference on Automatic Face and Gesture Recognition (FG), 2018.
- **Wei-Hong Li**, Yafang Mao, Ancong Wu, Wei-Shi Zheng, "Correlation based Identity Filter: An Efficient Framework For Person Search", Proceedings of International Conference on Image and Graphics (ICIG), 2017. **Best Paper Award**
- Yuting Mai, **Wei-Hong Li**, Yongyi Tang, Xixi Bi, Wei-Shi Zheng, "Sketch metric learning", Proceedings of International Joint Conference on Neural Networks, 2016.
- Zhaoyu Lu and Ziqi Luo and Huicheng Zheng and Jikai Chen and **Wei-Hong Li**, "A Delaunay-Based Temporal Coding Model for Micro-expression Recognition", Proceedings of Asian Conference on Computer Vision, 2014.

HONORS & AWARDS

- **The Sullivan Doctoral Thesis Prize Runner-Up** - The British Machine Vision Association (BMVA) 2022
- **Best Paper Nominee** (33/8161) - Conference on Computer Vision and Pattern Recognition (CVPR) 2022
- **Top Reviewer Award** Neurips'23
- **IGS PhD scholarship** - School of Informatics at University of Edinburgh 2018-2021
- **Academic Excellence Award** - Sun Yat-Sen University 2011-2018
- **Student Fellowship** - Royal Society Advanced Newton Fellowship Program and NSFC 2017
- **Best Paper Award** - International Conference on Image and Graphics (ICIG) 2017
- **First and Second Prize** - Chinese RoboCup Competition 2013, 2014

TEACHING

UNIVERSITY OF EDINBURGH

- Image and Vision Computing (IVC) 2018-19
- Machine Learning Practical (MLP) 2018-19, 2019-20, 2020-21

PROFESSIONAL ACTIVITIES

REVIEWER (JOURNAL)

- **TPAMI** - Transactions on Pattern Analysis and Machine Intelligence since 2022
- **TMM** - Transactions on MultiMedia since 2022
- **ML** - Machine Learning since 2022
- **TCSVT** - Transactions on Circuits and Systems for Video Technology since 2023
- **IF** - Information Fusion since 2023

REVIEWER (CONFERENCE)

- **CVPR** - International Conference on Computer Vision and Pattern Recognition since 2022
- **ICCV** - International Conference on Computer Vision since 2021
- **ECCV** - European Conference on Computer Vision since 2022
- **Neurips** - Conference on Neural Information Processing Systems since 2022
- **ICML** - International Conference on Machine Learning since 2023
- **ICLR** - International Conference on Machine Learning since 2024

REVIEWER (WORKSHOP)

- **ECCV Workshop** - *Workshop on What is Motion For?* 2022

ORGANIZER

- **BMVC Workshop** - *Universal Representations for Computer Vision (URCV)* 2022

INVITED TALKS

UNIVERSAL REPRESENTATION LEARNING AND TASK-SPECIFIC ADAPTATION FOR FEW-SHOT LEARNING

- Visual Geometry Group (VGG), University of Oxford 2022

LEARNING UNIVERSAL REPRESENTATIONS ACROSS TASKS AND DOMAINS

- Intelligence Science and system Lab (iSEE), Sun Yat-sen University 2023
- National University of Defense Technology 2023
- AI seminar, Hong Kong University of Science and Technology (Guangzhou) 2023

SKILLS & OTHERS

PROGRAMMING LANGUAGES Python | Matlab | C++

DEEP LEARNING FRAMEWORK Pytorch | MatConvNet

LANGUAGES Mandarin | Teochew Dialect | English

HOBBIES Workout | Badminton | Gongfu Tea | Reading