WEIJIAN DENG

Email: weijian.deng@anu.edu.au ◇ http://weijiandeng.xyz ◇ Google Scholar
Research Fellow ◇ Australian National University

RESEARCH INTERESTS

Robust Model Perception I am driven to create machine perception models that demonstrate remarkable robustness, showcasing exceptional generalization across diverse testing environments.

3D Content Modeling Additionally, I am keenly interested in advancing the field of 3D content modeling, where I seek to contribute innovative solutions and insights that enhance our ability to represent and generate 3D objects and scenes

EDUCATION

Australian National University, Australia *Jul 2019 - Jan 2023*
Research Topic: Predicting Out-of-Distribution Generalization
Supervisors: Prof. Stephen Gould, Dr. Yumin Suh, Dr. Liang Zheng

University of Chinese Academy of Sciences, China *Sep 2016 - Jun 2019*
Master of Science in Computer Science
Research Topic: Object Recognition
Supervisor: Prof. Jianbin Jiao

Beijing Jiaotong University, China *Sep 2012 - Jun 2016*
Bachelor of Engineering
Overall GPA: 92.3/100

WORK EXPERIENCE

Research Fellow *Jan 2023 - Now*
Australian National University, Australia
Advisor: Prof. Stephen Gould

NEC Laboratories America, INC. *Jun 2020 - Sep 2020*
Research Intern (Remote) on Multi-task Learning
Hosted by Dr. Yu Xiang and Dr. Yumin Suh

Singapore University of Technology and Design *Aug 2019 - Nov 2019*
Research Assistant on Domain Adaptation
Hosted by Dr. Liang Zheng

PROFESSIONAL SERVICE

Lecturer, *Introduction to Computer Science*, SDUW (Joint ANU-SDUW Program, Winter Sem. 2023)
ACM MM'24 Area Chair
Co-organizer: CVPR'22 Tutorial on Evaluating Models Beyond the Textbook: Out-of-distribution and Without Labels (https://sites.google.com/view/evalmodel)
Co-organizer: ECCV'20 Visual Domain Adaptation Challenge (http://ai.bu.edu/visda-2020)
Conference Reviewer: NeurIPS'22-23; ICML'22-24; ICLR'22-24; ICCV'21,23; CVPR'21-24; ECCV'20
Journal Reviewer: IEEE-TPAMI; IEEE-TIP
Guest Lecturer: SUTD 2018/12 (*Image-Image Translation*); ANU 2019/09 (*SVDNet*)

AWARDS

NeurIPS 2022 Scholar Award, 2022
ICML 2022 Top 10% Reviewer, 2022
ECCV 2020 Outstanding Reviewer, 2022
Australian Government Research Training Program (AGRTP) Scholarship, 2019-2023
The Third Place in Vehicle Re-identification track of CVPR 2019 AI-City Challenge, 2019
China National Scholarship (Master), 2018
China National Scholarship (Bachelor), 2014, 2015

PUBLICATIONS

Summary. Published > 15 papers in top computer vision and machine learning venues such as CVPR, ICCV, ICML, NeurIPS, TPAMI, TIP, and TCSVT. Google Scholar Citations $= 2,400$.

[1] Confidence and Dispersity Speak: Characterising Prediction Matrix for Unsupervised Accuracy Estimation
Weijian Deng, Yumin Suh, Liang Zheng, Stephen Gould
International Conference on Machine Learning (**ICML**), 2023

[2] AutoEval: Are Labels Always Necessary for Classifier Accuracy Evaluation?
Weijian Deng and Liang Zheng
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2022

[3] On the Strong Correlation Between Model Invariance and Generalization
Weijian Deng, Stephen Gould, and Liang Zheng
Neural Information Processing Systems (**NeurIPS**), 2022

[6] Are Labels Always Necessary for Classifier Accuracy Evaluation?
Weijian Deng and Liang Zheng
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021

[5] What Does Rotation Prediction Tell Us about Classifier Accuracy under Varying Testing Environments?
Weijian Deng, Stephen Gould, and Liang Zheng
International Conference on Machine Learning (**ICML**), 2021

[6] Image-Image Domain Adaptation with Preserved Self-Similarity and Domain-Dissimilarity for Person Re-identification
Weijian Deng, Liang Zheng, Qixiang Ye, Guoliang Kang, Yi Yang, and Jianbin Jiao
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018

[7] Split to Learn: Gradient Split for Multi-Task Human Image Analysis
Weijian Deng, Yumin Suh, Xiang Yu, Masoud Faraki, Liang Zheng, Manmohan Chandraker
IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2023

[8] Fine-grained Classification via Categorical Memory Networks
Weijian Deng, Joshua Marsh, Stephen Gould, and Liang Zheng
IEEE Transactions on Image Processing (**TIP**), 2022

[9] Rethinking Triplet Loss for Domain Adaptation
Weijian Deng, Liang Zheng, Yifan Sun, and Jianbin Jiao
IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2020

[10] Ray Deformation Networks for Novel View Synthesis of Refractive Objects
Weijian Deng, Dylan Campbell, Chunyi Sun, Shubham Kanitkar, Matthew Shaffer, Stephen Gould
IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2024

[11] Adaptive Calibrator Ensemble for Model Calibration under Distribution Shift
Yuli Zou*, **Weijian Deng*** (equal contribution), Liang Zheng
IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023

[12] A Bag-of-Prototypes Dataset Representation
Weijie Tu, **Weijian Deng**, Tom Gedeon, Liang Zheng
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023

[13] A Closer Look at the Robustness of Contrastive Language-Image Pre-Training (CLIP)
Weijie Tu, **Weijian Deng**, Tom Gedeon,
Neural Information Processing Systems (**NeurIPS**), 2023

[14] Ranking Models in Unlabeled New Environments
Xiaoxiao Sun, Yunzhong Hou, **Weijian Deng**, Hongdong Li, Liang Zheng
IEEE/CVF International Conference on Computer Vision (**ICCV**), 2021

[15] SVDNet for Pedestrian Retrieval
Yifan Sun, Liang Zheng, **Weijian Deng**, Shengjin Wang
IEEE/CVF International Conference on Computer Vision (**ICCV**), 2017

Technical Report

[16] Similarity-preserving Image-Image Domain Adaptation for Person Re-Identification
Weijian Deng, Liang Zheng, Qixiang Ye, Yi Yang, and Jianbin Jiao
arXiv preprint arXiv:1811.10551

[17] Domain alignment with triplets
Weijian Deng, Liang Zheng, and Jianbin Jiao
arXiv preprint arXiv:1812.00893

[18] Assessing Model Out-of-Distribution Generalization With Softmax Prediction Probability Baselines and a Correlation Method
Weijie Tu, **Weijian Deng**, Tom Gedeon, Liang Zheng

[19] 3D-GPT: Procedural 3D Modeling with Large Language Models
Chunyi Sun, Junlin Han, **Weijian Deng**, Xinlong Wang, Zishan Qin, Stephen Gould
arXiv preprint arXiv:2310.12945

[20] Vehicle Re-Identification with Location and Time Stamps
Kai Lv, Heming Du, Yunzhong Hou, **Weijian Deng**, Hao Sheng, Jianbin Jiao, and Liang Zheng
CVPR workshop on AI-City, 2019 (Win 3rd place out of 84 participants)