

Wenzhao Zheng

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Education

Department of Automation, Tsinghua University

PhD student in Computer Vision

Advisor: Prof. Jie Zhou and Prof. Jiwen Lu

Beijing, China

Sep 2018 – June 2023

Department of Physics, Tsinghua University

B.S. in Maths and Physics

Beijing, China

Sep 2014 – June 2018

Research Interests

- **Omni-supervised representation learning** that exploits various types of supervision signals to learn discriminative and generalizable representations.
- **Vision-centric autonomous driving** that efficiently perceives and predicts the complex 3D world based on images.
- **Explainable artificial intelligence** that builds comprehensible and trustworthy AI systems with high performance.

Publications

* indicates equal contribution

Peer-Reviewed Conference Publications

- [1] Chengkun Wang*, **Wenzhao Zheng***, Zheng Zhu, Jie Zhou, and Jiwen Lu
OPERA: Omni-Supervised Representation Learning with Hierarchical Supervisions
IEEE International Conference on Computer Vision (ICCV), 2023
- [2] Han Xiao*, **Wenzhao Zheng***, Zheng Zhu, Jie Zhou, and Jiwen Lu
Token-Label Alignment for Vision Transformers
IEEE International Conference on Computer Vision (ICCV), 2023
- [3] Yi Wei*, Linqing Zhao*, **Wenzhao Zheng**, Zheng Zhu, Jie Zhou, and Jiwen Lu
SurroundOcc: Multi-Camera 3D Occupancy Prediction for Autonomous Driving
IEEE International Conference on Computer Vision (ICCV), 2023
- [4] Yuanhui Huang*, **Wenzhao Zheng***, Yunpeng Zhang, Jie Zhou, and Jiwen Lu
Tri-Perspective View for Vision-Based 3D Semantic Occupancy Prediction
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023
- [5] Chengkun Wang*, **Wenzhao Zheng***, Junlong Li, Jie Zhou, and Jiwen Lu
Deep Factorized Metric Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023
- [6] Borui Zhang, **Wenzhao Zheng**, Jie Zhou, and Jiwen Lu
Bort: Towards Explainable Neural Networks with Bounded Orthogonal Constraint
International Conference on Learning Representations (ICLR), 2023
- [7] Yunpeng Zhang, **Wenzhao Zheng**, Zheng Zhu, Guan Huang, Jie Zhou, and Jiwen Lu
A Simple Baseline for Multi-Camera 3D Object Detection
Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI), 2023

- [8] Yi Wei*, Linqing Zhao*, **Wenzhao Zheng**, Zheng Zhu, Yonming Rao, Guan Huang, Jiwen Lu, and Jie Zhou
SurroundDepth: Entangling Surrounding Views for Self-Supervised Multi-Camera Depth Estimation
Conference on Robot Learning (CoRL), 2022
- [9] **Wenzhao Zheng**, Yuanhui Huang, Borui Zhang, Jie Zhou, and Jiwen Lu
Dynamic Metric Learning with Cross-Level Concept Distillation
17th European Conference on Computer Vision (ECCV), 2022
- [10] Yunpeng Zhang, **Wenzhao Zheng**, Zheng Zhu, Guan Huang, Dalong Du, Jie Zhou, and Jiwen Lu
Dimension Embeddings for Monocular 3D Object Detection
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022
- [11] Borui Zhang, **Wenzhao Zheng**, Jie Zhou, and Jiwen Lu
Attributable Visual Similarity Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022
- [12] **Wenzhao Zheng***, Borui Zhang*, Jiwen Lu, and Jie Zhou
Deep Relational Metric Learning
IEEE International Conference on Computer Vision (ICCV), 2021
- [13] **Wenzhao Zheng**, Chengkun Wang, Jiwen Lu, and Jie Zhou
Deep Compositional Metric Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2021
- [14] **Wenzhao Zheng**, Jie Zhou, and Jiwen Lu
Structural Deep Metric Learning for Room Layout Estimation
16th European Conference on Computer Vision (ECCV), 2020
- [15] **Wenzhao Zheng**, Jiwen Lu, and Jie Zhou
Deep Metric Learning via Adaptive Learnable Assessment
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2020
- [16] **Wenzhao Zheng**, Zhaodong Chen, Jiwen Lu, and Jie Zhou
Hardness-Aware Deep Metric Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019, **Oral Presentation**
- [17] Yueqi Duan, **Wenzhao Zheng**, Xundong Lin, Jiwen Lu, and Jie Zhou
Deep Adversarial Metric Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2018, **Spotlight Presentation**

Peer-Reviewed Journal Publications

- [18] Chengkun Wang*, **Wenzhao Zheng***, Zheng Zhu, Jie Zhou, and Jiwen Lu
Introspective Deep Metric Learning
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), 2023
- [19] **Wenzhao Zheng**, Jiwen Lu, and Jie Zhou
Deep Metric Learning with Adaptively Composite Dynamic Constraints
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), 2023
- [20] **Wenzhao Zheng**, Jiwen Lu, and Jie Zhou
Hardness-Aware Deep Metric Learning
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), 2021

- [21] Yueqi Duan, Jiwen Lu, **Wenzhao Zheng**, and Jie Zhou
Deep Adversarial Metric Learning
IEEE Transactions on Image Processing (**T-IP**), 2020

Honors and Awards

- **Tsinghua Excellent Doctoral Dissertation Award** 2023
- **Beijing Outstanding Graduate** 2023
- **Tsinghua Outstanding Graduate** 2023
- Tsinghua Xuancheng Scholarship 2022
- **Chinese National Scholarship** 2021
- CVPR 2021 Outstanding Reviewer 2021
- Tsinghua Changtong Scholarship 2020
- **Chinese National Scholarship** 2019
- Tsinghua Tung OOCL Scholarship 2017
- Tsinghua German Scholarship 2016

Academic Services

Conference Senior PC Member

- International Joint Conference on Artificial Intelligence (IJCAI), 2021

Conference Reviewer / PC Member

- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2019-2022
- International Conference on Computer Vision (ICML), 2019,2021
- European Conference on Computer Vision (ECCV), 2020,2022
- International Conference on Learning Representations (ICLR), 2023
- International Joint Conference on Artificial Intelligence (IJCAI), 2020,2022
- IEEE Winter Conference on Applications of Computer Vision (WACV), 2020-2022
- IEEE International Conference on Multimedia and Expo (ICME), 2019-2022

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
- IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)
- IEEE Transactions on Image Processing (T-IP)
- IEEE Transactions on Biometrics, Identity and Behavior (T-BIOM)
- ACM Transactions on Intelligent Systems and Technology (TIST)
- Pattern Recognition (PR)