Wenzhao Zheng

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Experience

EECS, University of California, Berkeley — **Berkeley, United States**
Postdoctoral Researcher — *July 2023 – now*
Advisor: Prof. Kurt Keutzer

Education

Department of Automation, Tsinghua University — **Beijing, China**
Ph.D. in Computer Vision — *Sep 2018 – June 2023*
Advisor: Prof. Jie Zhou and Prof. Jiwen Lu

Department of Physics, Tsinghua University — **Beijing, China**
B.S. in Maths and Physics — *Sep 2014 – June 2018*

Research Interests

- **Large Models and World Models**: Efficient/Small LLMs, Multimodal Models, Video Generation Models, Large Action Models...
- **Embodied Agents and Spatial Intelligence**: 3D Occupancy Prediction, End-to-End Driving, 3D Scene Reconstruction, 4D Scene Simulation...

Publications

* indicates equal contribution, † denotes corresponding author.

Peer-Reviewed Conference Publications

[1] Xianda Guo, Chenming Zhang, Dujun Nie, **Wenzhao Zheng**, Youmin Zhang, Long Chen
LightStereo: Channel Boost is All You Need for Efficient 2D Cost Aggregation
International Conference on Robotics and Automation (**ICRA**), 2025

[2] Jianing Li, Ming Lu, Hao Wang, Chenyang Gu, **Wenzhao Zheng**, Li Du, Shanghang Zhang
SliceOcc: Indoor 3D Semantic Occupancy Prediction with Vertical Slice Representation
International Conference on Robotics and Automation (**ICRA**), 2025

[3] Ye Li, **Wenzhao Zheng**†, Xiaonan Huang, Kurt Keutzer
UniDrive: Towards Universal Driving Perception Across Camera Configurations
International Conference on Learning Representations (**ICLR**), 2025

[4] Yuanhui Huang, **Wenzhao Zheng**, Yunpeng Zhang, Jie Zhou, Jiwen Lu
GaussianFormer: Scene as Gaussians for Vision-Based 3D Semantic Occupancy Prediction
18th European Conference on Computer Vision (**ECCV**), 2024

[5] **Wenzhao Zheng***, Weiliang Chen*, Yuanhui Huang, Borui Zhang, Yueqi Duan, Jiwen Lu
OccWorld: Learning a 3D Occupancy World Model for Autonomous Driving
18th European Conference on Computer Vision (**ECCV**), 2024

[6] Han Xiao*, **Wenzhao Zheng***, Sicheng Zuo, Peng Gao, Jie Zhou, Jiwen Lu
SpatialFormer: Towards Generalizable Vision Transformers with Explicit Spatial Understand-

ing
18th European Conference on Computer Vision (**ECCV**), 2024

[7] **Wenzhao Zheng***, Ruiqi Song*, Xianda Guo*, Chenming Zhang, Long Chen
GenAD: Generative End-to-End Autonomous Driving
18th European Conference on Computer Vision (**ECCV**), 2024

[8] Linqing Zhao, Xiuwei Xu, Ziwei Wang, Yunpeng Zhang, Borui Zhang, **Wenzhao Zheng**, Dalong Du, Jie Zhou, Jiwen Lu
LowRankOcc: Tensor Decomposition and Low-Rank Recovery for Vision-based 3D Semantic Occupancy Prediction
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024

[9] Yuanhui Huang*, **Wenzhao Zheng***, Borui Zhang, Jie Zhou, and Jiwen Lu
SelfOcc: Self-Supervised Vision-Based 3D Occupancy Prediction
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024

[10] Borui Zhang, **Wenzhao Zheng**, Jie Zhou, Jiwen Lu
Path Choice Matters for Clear Attribution in Path Methods
International Conference on Learning Representations (**ICLR**), 2024

[11] 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

[12] 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

[13] 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

[14] 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

[15] 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

[16] 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

[17] 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

[18] 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

[19] **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

[20] 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

[21] Borui Zhang, **Wenzhao Zheng**, Jie Zhou, and Jiwen Lu
Attributable Visual Similarity Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022

[22] **Wenzhao Zheng***, Borui Zhang*, Jiwen Lu, and Jie Zhou
Deep Relational Metric Learning
IEEE International Conference on Computer Vision (**ICCV**), 2021

[23] **Wenzhao Zheng**, Chengkun Wang, Jiwen Lu, and Jie Zhou
Deep Compositional Metric Learning
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2021

[24] **Wenzhao Zheng**, Jie Zhou, and Jiwen Lu
Structural Deep Metric Learning for Room Layout Estimation
16th European Conference on Computer Vision (**ECCV**), 2020

[25] **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

[26] **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**

[27] 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

[28] Bohao Fan, **Wenzhao Zheng**, Jianjiang Feng, Jie Zhou
LiDAR-HMR: 3D Human Mesh Recovery from LiDAR
IEEE Transactions on Multimedia (**T-MM**), 2025

[29] Chengkun Wang, **Wenzhao Zheng**, Xian Sun, Jie Zhou, Jiwen Lu
Probabilistic Deep Metric Learning for Hyperspectral Image Classification
Pattern Recognition (**PR**), 2025

[30] Linqing Zhao, **Wenzhao Zheng**, Yunpeng Zhang, Jie Zhou, Jiwen Lu
StructLane: Leveraging Structural Relations for Lane Detection
IEEE Transactions on Image Processing (**T-IP**), 2024

[31] Shuai Zeng, **Wenzhao Zheng**, Jiwen Lu, Haibin Yan
Hardness-Aware Scene Synthesis for Semi-Supervised 3D Object Detection
IEEE Transactions on Multimedia (**T-MM**), 2024

[32] 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

[33] **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

[34] Linqing Zhao, **Wenzhao Zheng**, Yueqi Duan, Jie Zhou, and Jiwen Lu
SPTR: Structure-Preserving Transformer for Unsupervised Indoor Depth Completion
IEEE Transactions on Circuits and Systems for Video Technology (**T-CSVT**), 2023

[35] **Wenzhao Zheng**, Jiwen Lu, and Jie Zhou
Hardness-Aware Deep Metric Learning
IEEE Transactions on Pattern Analysis and Machine Intelligence (**T-PAMI**), 2021

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

Honors and Awards

- **Excellent Doctoral Dissertation of Chinese Association for Artificial Intelligence** 2024
- **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 - 2025
- International Conference on Computer Vision (ICCV), 2019, 2021, 2023
- European Conference on Computer Vision (ECCV), 2020, 2022, 2024

- International Conference on Learning Representations (ICLR), 2023 - 2025
- Annual Conference on Neural Information Processing Systems (NeurIPS), 2024, 2025
- International Conference on Machine Learning (ICML), 2025
- International Joint Conference on Artificial Intelligence (IJCAI), 2020, 2022
- IEEE Winter Conference on Applications of Computer Vision (WACV), 2020 - 2024
- IEEE International Conference on Multimedia and Expo (ICME), 2019 - 2024

Journal Reviewer

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