Changshuo Wang

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Education/work

09/2023 -- Now	Nanyang Technological University	Research Fellow
09/2018-06/2023	University of Chinese Academy of Sciences, Circuits and Systems	Ph.D. Canditate
09/2014-06/2018	Qingdao University of Science and Technology Electronic Information Science and Technology	Bachelor

About Me

I have graduated from the University of Chinese Academy of Sciences (UCAS) at the end of June 2023. My research interests are **2D/3D Scene Representation, Generation and Understanding; Few-shot Learning;; Person Understanding**.

Now I am a Research Fellow in Nanyang Technological University (NTU). I am studying the following research domains:

(1) 2D/3D scene understanding and generation based on multimodal data.

(2) Human-centered visual understanding, such as person re-identification.

(3) Brain-inspired visual cognition algorithm.

Honors

1.	Outstanding graduate of Beijing	2023
2.	Outstanding graduate of University of Chinese Academy of Sciences	2023
3.	Director Scholarship from Institute of Semiconductors, Chinese Academy of Sciences	2023
4.	National scholarship from University of Chinese Academy of Sciences	2022
5.	Merit Student from University of Chinese Academy of Sciences	2020＆2021＆2022
6.	Best Service Award from HPBD&IS 2019	2019
7.	Outstanding Graduates of Shandong Province, China	2018
8.	Honourable Metion of MCM/ICM, USA	2017
9.	Second Prize in the 13th “Huawei Cup” National Graduate Mathematical Contest in Modeling	2016
10.	First Prize in the 8th China College Students' Mathematics Competition (Non-Mathematics Major Group)	2016
11.	First Prize in the Shandong Provincial Electronic Design Contest	2016
12.	National Encouragement scholarship from Qingdao University of Science and Technology	2015＆2016＆2017

Project Experience

07/2022-12/2022	Research and implementation of 2D virtual try-on in real environment	Main Participant
12/2021-12/2022	Research on person re-identification based on 3D point cloud	Main Participant
10/2020-11/2021	3D point cloud understanding based on deep learning	Main Participant
08/2019-09/2020	Research on Topological Feature Extraction Method Based on Brain Inspiration	Main Participant

Publications

1. **Changshuo Wang**, Shuting He, Xiang Fang, Jiawei Han, Zhonghang Liu, Xin Ning, Weijun Li, Prayag Tiwari. Point Clouds Meets Physics: Dynamic Acoustic Field Fitting Network for Point Cloud Understanding. ***IEEE Conference on Computer Vision and Pattern Recognition (CVPR)***, 2025**.** (Accepted, **CCF A**)
2. Zhonghang Liu, Kun Zhou, **Changshuo Wang**, Daniel Lin, Jiangbo Lu. FlexUOD: The Answer to Real-world Unsupervised Image Outlier Detection. ***IEEE Conference on Computer Vision and Pattern Recognition (CVPR)***, 2025**.** (Accepted, **CCF A**)
3. **Changshuo Wang,** Shuting He, Xiang Fang, Meiqing Wu, Siew Kei Lam, Prayag Tiwari. Taylor Series-Inspired Local Structure Fitting Network for Few-shot Point Cloud Semantic Segmentation. ***The 39th Annual AAAI Conference on Artificial Intelligence (AAAI)***, 2025. (Accepted, **CCF A**)
4. Xiang Fang, Wanlong Fang, **Changshuo Wang**[#], Daizong Liu, Keke Tang, Jianfeng Dong, Pan Zhou[#], Beibei Li. Multi-Pair Temporal Sentence Grounding via Multi-Thread Knowledge Transfer Network. ***The 39th Annual AAAI Conference on Artificial Intelligence (AAAI)***, 2025. (Accepted, **CCF A**, first co-corresponding author)
5. **Changshuo Wang**, Meiqing Wu, Siew-Kei Lam, Xin Ning, Ruiping Wang, Shangshu Yu, Weijun Li, Thambipillai Srikanthan. GPSFormer: A Global Perception and Local Structure Fitting-based Transformer for Point Cloud Understanding, ***European Conference on Computer Vision (ECCV)***, 2024. (Accepted, **CCF B**)
6. **Changshuo Wang**, Xin Ning, Weijun Li, Xiao Bai, Xingyu Gao. 3D Person Re-identification Based on Global Semantic Guidance and Local Feature Aggregation, ***IEEE Transactions on Circuits and Systems for Video Technology,*** 2023. (JCR Q1, IF:8.3, ESI Highly Cited Paper)
7. **Changshuo Wang**, Xin Ning, Linjun Sun, Liping Zhang, Weijun Li, Xiao Bai. Learning Discriminative Features by Covering Local Geometric Space for Point Cloud Analysis, ***IEEE Transactions on Geoscience and Remote Sensing***, 2022. (JCR Q1, IF:7.5, ESI Highly Cited Paper)
8. **Changshuo Wang**, Rongsheng Cao, Ruiping Wang. Learning discriminative topological structure information representation for 2D shape and social network classification via persistent homology, ***Knowledge-Based Systems,*** 2025. (JCR Q1, IF:7.2)
9. **Changshuo Wang**, Chen Wang, Weijun Li. A Brief Survey on RGB-D Semantic Segmentation Using Deep Learning, ***Displays***, vol. 70, 2021. (JCR Q2, IF：3.7)
10. **Changshuo Wang**, Han Wang, Xin Ning, Shengwei Tian, Weijun Li. 3D Point Cloud Classification Method Based on Dynamic Coverage of Local Area, ***Journal of Software***, 2022. (**CCF A**)
11. Huang Zhang, **Changshuo Wang***, Long Yu, Shengwei Tian, Xin Ning, Yudong Zhang. PointGT: A Method for Point-Cloud Classification and Segmentation Based on Local Geometric Transformation. ***IEEE Transactions on Multimedia,*** 2024. (JCR Q1, IF:8.4, Co-first authors, ESI Highly Cited Paper)
12. Enhao Ning, **Changshuo Wang***, Huang Zhang, Xin Ning, Prayag Tiwari. Occluded person re-identification with deep learning: A survey and perspectives. ***Expert Systems with Applications,*** 2024**.** (JCR Q1, IF:7.5, Co-first authors)
13. Huang Zhang, **Changshuo Wang***, Jianchu Lin, Baoli Lu, Liping Zhang, Shengwei Tian. Deep Learning-based 3D Point Cloud Classification: A Systematic Survey and Outlook, ***Displays,*** 2023. (JCR Q2, IF:3.7, Co-first authors)
14. Liming Jiang, **Changshuo Wang**[#], Xin Ning, Zaiyang Yu. LTTPoint: A MLP-based Point Cloud Classification Method with Local Topology Transformation Module, ***ACAIT 2023: 7th Asian Conference on Artificial Intelligence Technology***. (Corresponding author)
15. Enhao Ning, Yangfan Wang, **Changshuo Wang**, Huang Zhang, Xin Ning. Enhancement, integration, expansion: Activating representation of detailed features for occluded person re-identification, ***Neural Networks,*** 2024. (JCR Q1, IF:6.0)
16. Huang Zhang, Xin Ning, **Changshuo Wang**, Enhao Ning, Lusi Li. Deformation depth decoupling network for point cloud domain adaptation, ***Neural Networks,*** 2024. (JCR Q1, IF:6.0)
17. Enhao Ning, Canlong Zhang, **Changshuo Wang**, Xin Ning, Hao Chen, Xiao Bai. Pedestrian Re-ID based on Feature Consistency and Contrast Enhancement, ***Displays,*** 2023. (JCR Q2, IF:3.7)

18. Zaiyang Yu, Lusi Li, Jinlong Xie, **Changshuo Wang**, Weijun Li, Xing Ning. Pedestrian 3D Shape Understanding for Person Re-Identification via Multi-View Learning. ***IEEE Transactions on Circuits and Systems for Video Technology,*** 2024. (JCR Q1, IF:8.3, ESI Highly Cited Paper, ESI Hot Paper)
19. Ruiping Wang, Siew-Kei Lam, Meiqing Wu, Zhijian Hu, **Changshuo Wang**, Jing Wang. Destination intention estimation-based convolutional encoder-decoder for pedestrian trajectory multimodality forecast. ***Measurement,*** 2025. (JCR Q2, IF:5.2)
20. Shangshu Yu, Meiqing Wu, Siew-Kei Lam, **Changshuo Wang**, Ruiping Wang. EDS-Depth: Enhancing Self-Supervised Monocular Depth Estimation in Dynamic Scenes. ***IEEE Transactions on Intelligent Transportation Systems,*** 2025. (JCR Q1, IF:7.9)

Patents

1. Xin Ning, **Changshuo Wang**, Xiaoli Dong, Weijun Li, Liping Zhang, Linjun Sun. Point cloud semantic segmentation method, device, electronic equipment and storage medium. Invention patent. Patent number: CN202210220298.1. (First Participant)
2. Xin Ning, Shaolin Zhang, **Changshuo Wang**, Xiaoli Dong, Weijun Li. Image recognition model training method, image recognition method, and device. Patent for Invention. Patent number: CN112183559B. (First Participant)

Fund application

1. Indoor Fine-Grained Point Cloud Semantic Segmentation Research Based on Bionic Imaginal Cognition Theory, 2023 National Natural Science Foundation of China. Main Participant
2. Research on Multi-View Representation Learning Based on Homology-Continuity Principle in Few-shot Environment. 2020 National Natural Science Foundation of China. Main Participant

Mentoring experience

I have guided the research work of some students, including those from the University of Ottawa, Beijing University of Chemical Technology, Xinjiang University, South China Normal University, Guangxi Normal University, etc.

Corporate Internship experience

Wave Group · Beijing R&D Center AI algorithm engineer

- Algorithm Research and Application of 2D Virtual Try-On Jul. 2022-Dec.2022

Academic Services

- **Journal Reviewer:** IEEE TNNLS, IEEE TMM, IEEE TCSVT, Pattern Recognition, Knowledge-Based Systems, Information Fusion, Neural Networks, Neurocomputing, IET Computer Vision, Signal Processing, etc.
- **Conference Reviewer / PC Member:** CVPR2025, ICCV2025, ICLR2025, ICML2025, NeurIPS2025, NeurIPS2024, HPBD&IS 2019-2021, HDIS 2022, ICCD 2023, HDIS 2023 PC Member and Reviewer etc.
- **Guest Editor:** [**Electronics**]--Special Issues--Recent Progress in Visual AI: Architectures, Learning, and Applications; [**Symmetry**]--Special Issues--Applications Based on Symmetry and Asymmetry in Deep Learning and Artificial Intelligence Methods.

Personal Links / Blog

- **Personal Links:** https://changshuowang.github.io/
- **CNBlog:** https://www.cnblogs.com/wangchangshuo