

JIANG CHENHAN

@ cjiangao@connect.ust.hk @Cyan_Jiang jiangchenhan.github.io



Research Interests: 3D Vision 3D Generation 3D Representation Learning

EDUCATION

PhD. in Computer Science and Engineering

Hong Kong University of Science and Technology

📅 Sep. 2022 – Ongoing

- Supervisor: Dit-Yan Yueng.
- Research topics are 3D representation learning and text-to-3D generation.

M.S. in Computer Science and Technology

Sun Yat-san University

📅 Sep. 2016 – Jun. 2019

- Supervisor: Lin Liang. Co-supervisor: Liang Xiaodan.
- Research topics is large-scale 2D detection.

B.S. in Intelligent Science and Technology

XiDian University

📅 Sep. 2012 – Jun. 2016

- GPA: 3.7/4.0 (ranked: 15/130). Relevant courses: Machine Learning, Digital Image Process, Data Structure, etc.

WORK EXPERIENCE

Huawei Hong Kong Co., Ltd | **Researcher**

📅 Aug. 2019 – Jun. 2022

Work for Autonomous Driving and Representation Learning. *Supervised by Li Zhenguo*

📍 Hong Kong

SenseTime | **Research Intern**

📅 Jan. 2018 – Dec. 2018

Focus on Graph-based Large-scale Object Detection. *Supervised by Kuang Zhanghui*

📍 Shenzhen, CN

SELECTED RESEARCH PROJECTS

3D Generation

📅 Feb. 2023 – Ongoing

- To overcome the data bottleneck (lack semantics and diverse camera motion) of Novel View Synthesis, we propose FVGen as a data engine to produce high-quality and diverse free-views that facilitate downstream models. Our FV-Gen incorporates a certainty-aware free-view sampling strategy, which maximally captures under-constrained geometry and minimally reduces reconstruction artifacts. [CVPR26]
- Current SDS-based text-to-3D methods struggle to generate 3D content that accurately reflect user prompts. We propose **CoherentDream**, a first framework that uses the reasoning capabilities of MLLMs to ensure textual consistency in SDS optimization. Moreover, we finetune a 3D-CRITIC to bridge the chatbot and 3D evaluator. [AAAI26]
- Mainstream text-to-3D methods produce unstructured geometry and lack support for post-modeling interaction, making them ill-suited for artistic workflows. Inspired by the reasoning and spatial understanding capabilities of LLM in a wide range of tasks, we propose a LLM-assisted pipeline that consists of a graph-based procedural shape representation and an agentic workflow for modelling and painting. [NeurIPS25]
- To address the multi-Janus problem in the original Score Distillation-based text-to-3D generation, we introduce **joint score distillation (JSD)** on multiple rendered views. We incorporate universal view-aware models to capture interview coherency, indicating compatibility with our JSD. [ECCV24]

3D Representation Learning

📅 Oct. 2020 – Dec. 2022

- We propose a **Contrastive Language-Image-Point cloud Pretraining** framework to facilitate open-vocabulary 3D representation in realistic scenarios. Specifically, we collect text-image-point cloud triplets from real-world autonomous driving scenes and directly align 3D space with broader raw text. [CVPR23]
- To facilitate future research on exploiting unlabeled data for 3D detection, we propose an autonomous driving dataset and build a benchmark to evaluate various self-supervised and semi-supervised methods on it. [NeurIPS21]

- We propose a self-supervised learning approach to alleviate annotation workload in LiDAR-based object detection. Our method addresses inconsistent contrast by introducing voxel distance in feature contrastive learning. We also generate pseudo-instances via motion and utilize self-clustering to learn instance-level representations. [ICCV21]

HONORS AND AWARDS

- HKUST RedBird PhD Award 2022
- Huawei PhD Fellowship Award 2022
- Waymo 2D Detection Challenge **Top3, Top1** 2020/2021
- EuroCity Person Detection **Top1** 2020
- Huawei Director Award-Outstanding New Employees 2020
- Tianchi Zero-shot Image Classification Competition **Top1 [1/3226]** 2018
- FashionAI Global Challenge, Tianchi Competition **Top2 [2/2323]** 2017
- First Class Scholarship, Huawei Scholarship **Top 3%** 2016/2018

PUBLICATIONS

Journal Articles

- **Jiang, Chenhan.** (2024). A survey on text-to-3d contents generation in the wild. *arXiv preprint arXiv:2405.09431*.
- Ding, J., Xie, E., Xu, H., **Jiang, Chenhan**, Li, Z., Luo, P., & Xia, G.-S. (2023). Unsupervised pretraining for object detection by patch reidentification. *IEEE TPAMI*.
- Wang, K., Lin, L., **Jiang, Chenhan.**, Qian, C., & Wei, P. (2019). 3d human pose machines with self-supervised learning. *IEEE TPAMI*.

Conference Proceedings

- **Jiang, Chenhan**, Zeng, Y., & Yeung, D.-Y. (2025). Coherendream: Boosting holistic text coherence in 3d generation via multimodal large language models feedback.
- Zhang*, S., **Jiang***, **Chenhan**, Li, Z., & Deng, J. (2025). Shapecraft: Llm agents for structured, textured and interactive 3d modeling. In *Neurips*.
- **Jiang, Chenhan**, Zeng, Y., Hu, T., Xu, S., Zhang, W., Xu, H., & Yeung, D.-Y. (2024). Jointdreamer: Ensuring geometry consistency and text congruence in text-to-3d generation via joint score distillation. In *Eccv*.
- Chen, R., Mu, Y., Xu, R., Shao, W., **Jiang, Chenhan**, Xu, H., ... Luo, P. (2023). Co³: Cooperative unsupervised 3d representation learning for autonomous driving. In *Iclr*.
- Zeng*, Y., **Jiang***, **Chenhan**, Mao, J., Han, J., Ye, C., Huang, Q., ... Xu, H. (2023). Clip²: Contrastive language-image-point pretraining from real-world point cloud data. In *Cvpr*.
- Du, X., **Jiang Chenhan**, Xu, H., Zhang, G., & Li, Z. (2021). How to save your annotation cost for panoptic segmentation? In *Aaai*.
- Liang*, h., **Jiang***, **Chenhan**, Feng, D., Chen, X., Xu, H., Liang, X., & Li, Z. (2021). Exploring geometry-aware contrast and clustering harmonization for self-supervised 3d object detection. In *Iccv*.
- Mao*, J., Niu*, M., **Jiang, Chenhan**, Liang, H., Liang, X., Li, Y., ... Yu, J., et al. (2021). One million scenes for autonomous driving: Once dataset. In *Neurips dataset and benchmark*.
- **Jiang***, **Chenhan**, Wang*, S., Xu, H., Liang, X., Lin, L., & Xiao, N. (2020). Elixirnet: Relation-aware network architecture adaptation for medical lesion detection. In *Aaai*.
- **Jiang***, **Chenhan**, Xu*, H., Zhang, W., Liang, X., & Li, Z. (2020). Sp-nas: Serial-to-parallel backbone search for object detection. In *Cvpr*.
- Xu*, H., **Jiang***, **Chenhan**, Liang, X., & Li, Z. (2019). Spatial-aware graph relation network for large-scale object detection. In *Cvpr*.
- Xu*, H., **Jiang***, **Chenhan**, Liang, X., Lin, L., & Li, Z. (2019). Reasoning-rcnn: Unifying adaptive global reasoning into large-scale object detection. In *Cvpr*.
- **Jiang***, **Chenhan**, Xu*, H., Liang, X., & Lin, L. (2018). Hybrid knowledge routed modules for large-scale object detection. In *Neurips*.