

# YAOKUN LI

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## RESEARCH INTEREST

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My research interests center around generalizable neural representations, 3D reconstruction/editing, and face analysis. In the long term, I strive to advance lightweight, generalizable representation learning for 3D objects/scenes, aiming to achieve effective 3D representations tailored for real-world applications. Recently, I am keen on exploring how to utilize the prior knowledge of pre-trained generative models to address uncertainty in sparse 3D reconstruction.

## BACKGROUND

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### Sun Yat-sen University

M.S. in Traffic Information Engineering & Control. (Postgraduate Recommendation)  
Supervisor: Prof. Guang Tan & Assoc. Prof. Chao Gou

Shenzhen, China  
Sep. 2021 – present

### Wuhan University of Technology

B.S. in Automotive Engineering. (Average: 85.82/100)  
Military Service

Wuhan, China  
Sep. 2015 – Sep. 2016 & Sep. 2018 – Jun. 2021  
Sep. 2016 – Sep. 2018

## RESEARCH

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### Preprint

- **Yaokun Li**, Chao Gou, Guang Tan. “Taming Uncertainty in Sparse-view Generalizable NeRF via Indirect Diffusion Guidance” (**arXiv 2024**)
  - We propose ID-NeRF, a novel Indirect Diffusion-guided NeRF framework that mitigate uncertainty in Generalizable NeRFs with sparse inputs by indirectly leveraging a distilled diffusion prior.

### Publications

- **Yaokun Li**, Guang Tan, and Chao Gou. “Cascaded Iterative Transformer for Jointly Predicting Facial Landmark, Occlusion Probability and Head Pose.” International Journal of Computer Vision (**IJCV 2023**).
  - We propose a task-dependent inspired cascaded iterative transformer multitasking framework for joint prediction of facial landmark, occlusion probability, and pose.
- **Yaokun Li**, Yuezhao Yu, Yuliang Liu, and Chao Gou. “MS-GCN: Multi-Stream Graph Convolution Network for Driver Head Pose Estimation.” IEEE International Conference on Intelligent Transportation Systems (**ITSC 2022**).
  - We propose a multi-stream graph convolution network to incorporate topological, local, and global facial information for driver’s head pose estimation.
- Yuchen Zhou, Guang Tan, Rui Zhong, **Yaokun Li**, and Chao Gou. “PIT: Progressive Interaction Transformer for Pedestrian Crossing Intention Prediction.” IEEE Transactions on Intelligent Transportation Systems (**TITS**).
  - We propose a progressive interaction transformer to capture the dynamic spatiotemporal interactions between humans, vehicles, and the environment more progressively as humans do.

### In Doing

- **Yaokun Li**, Guang Tan. “Generalizable 3D Gaussian Splatting From Single Image for Novel View Synthesis”
  - We focus on the highly ill-posed task of 3D reconstruction from a single image, intending a two-stage process that first utilizes prior knowledge from large models for shape regularization and then deforms 3D Gaussians.

## AWARDS

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- **2019: China National Scholarship**
- **2022:** Honorable mention in HACKPKU 2022
- **2023:** Third Prize of 2023 “Huawei Cup” National Graduate Student Mathematical Modeling Competition

## SKILLS

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- **Programming Languages:** Python, C.
- **Framework:** Pytorch.
- **Languages:** Chinese (native), English (522 in CET-4, 503 in CET-6, preparing for TOEFL).