Ziyang Song

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EDUCATION

The Hong Kong Polytechnic University   Hong Kong SAR, China

PhD in Computing; Supervisor: Bo Yang   Sep. 2021 – Feb. 2026 (Expected)

- **Thesis title:** Segmentation and Reconstruction of 3D Objects from Dynamic Scenes

Xi'an Jiaotong University   Xi'an, China

MEng in Control Science and Engineering   Sep. 2018 – Jun. 2021

Xi'an Jiaotong University   Xi'an, China

BEng in Automation (Honors Youth Program)   Sep. 2014 – Jun. 2018

WORK EXPERIENCE

TikTok   San Jose, USA

Research Intern; Mentor: Xinyu Gong   Jul. 2025 – Nov. 2025 (Expected)

- Research in reference-to-video generation
  - Development of a new video generation algorithm with **3D consistency to multi-view reference** images of objects
  - Curation of a large-scale object-centric reference-to-video dataset

SenseTime   Shanghai, China

Research Intern; Mentor: Dongliang Wang   Feb. 2021 – Jul. 2021

- Research in 3D human motion synthesis (*ActFormer*, ICCV 2023)
- Development of a sparse-view 3D human motion capture system

Tencent Robotics X   Shenzhen, China

Research Intern; Mentor: Wanchao Chi   Jun. 2019 – Aug. 2019

- Development of a real-time human action recognition system on NVIDIA Xavier mobile platform

SELECTED PUBLICATIONS

- **Ziyang Song**, Jinxi Li, Zihui Zhang, et al. *Mono360: Free View Synthesis of Deformable Objects from Monocular Videos via Dynamic Fusion.* Under Review.
- **Ziyang Song**, Jinxi Li, Bo Yang. *OSN: Infinite Representations of Dynamic 3D Scenes from Monocular Videos.* ICML, 2024.
- **Ziyang Song**, Bo Yang. *Unsupervised 3D Object Segmentation of Point Clouds by Geometry Consistency.* TPAMI, 2024.

- Liang Xu*, **Ziyang Song***, Dongliang Wang, et al. *ActFormer: A GAN-based Transformer towards General Action-Conditioned 3D Human Motion Generation.* ICCV, 2023.

- **Ziyang Song**, Bo Yang. *OGC: Unsupervised 3D Object Segmentation from Rigid Dynamics of Point Clouds.* NeurIPS, 2022.

- Peng Huang, Jinxi Li, **Ziyang Song**, et al. *CoVIP: Visual-Physical 3D Scene Reconstruction from a Single Image.* Under Review.

- Jinxi Li, **Ziyang Song**, Bo Yang. *TRACE: Learning 3D Gaussian Physical Dynamics from Multi-view Videos.* ICCV, 2025.

- Jinxi Li, **Ziyang Song**, Siyuan Zhou, et al. *FreeGave: 3D Physics Learning from Dynamic Videos by Gaussian Velocity.* CVPR, 2025.

- Jinxi Li, **Ziyang Song**, Bo Yang. *NVFi: Neural Velocity Fields for 3D Physics Learning from Dynamic Videos.* NeurIPS, 2023.

(* denotes equal contribution)

TECHNICAL SKILLS

- **Frameworks:** PyTorch (deep learning), Taichi (differentiable geometry processing), Nvdiffrast (differentiable rendering), etc.

- **Large-scale GPU usage:** Multi-node distributed training experience of video generation models