YILIN WANG

Homepage: https://modric197.github.io/
Phone: (+1) 6194335308 Email: yiw215@ucsd.edu
9500 Gilman Dr, La Jolla, CA 92093, USA

BRIEF INTRODUCTION

I'm currently a second year PhD. student at UC San Diego, advised by Prof. Hao Su. I received my bachelor's degree from **Yao Class, Tsinghua University**. I won a **gold medal** at the **35th Chinese Mathematics Olympiad (CMO, 2019)** and was a member of National Training Team (top 60 in CMO). My research interest lies on the intersection of **Robotics, Computer Vision and Machine Learning**, with particular focus on **sim-to-real robot manipulation** and **generative models**.

EDUCATION

UC San Diego **San Diego, California, USA**
Computer Science and Engineering Department
Doctor of Philosophy in Computer Science 09/2024-
Advisor: Prof. Hao Su

Tsinghua University **Beijing, China**
Institute of Interdisciplinary Information Sciences (**Yao Class**, IIIS)
Bachelor of Engineering in Computer Science 09/2020-07/2024

PAPERS

Yilin Wang*, Shangzhe Li*, Haoyi Niu, Zhiao Huang, Weitong Zhang, Hao Su, *A Recipe for Efficient Sim-to-Real Transfer in Manipulation with Online Imitation–Pretrained World Models*, in submission.

Yilin Wang, Zeyuan Chen, Liangjun Zhong, Zheng Ding, Zhizhou Sha, Zhuowen Tu, *Dolfin: Diffusion Layout Transformers without Autoencoder*, ECCV2024.

Yilin Wang*, Haiyang Xu*, Xiang Zhang, Zeyuan Chen, Zhizhou Sha, Zirui Wang, Zhuowen Tu, *OmniControlNet: Dual-stage Integration for Conditional Image Generation*, GCV Workshop at CVPR2024.

Zirui Wang, Zhizhou Sha, Zheng Ding, **Yilin Wang**, Zhuowen Tu, *TOKENCOMPOSE: Grounding Diffusion with Token-level Supervision*, CVPR2024.

Haiyang Xu, Yu Lei, Zeyuan Chen, Xiang Zhang, Yue Zhao, **Yilin Wang**, Zhuowen Tu, *Bayesian Diffusion Models for 3D Shape Reconstruction*, CVPR2024.

RESEARCH EXPERIENCE

Su Lab (UCSD) **San Diego, U.S.**
Advisor: Prof. Hao Su **09/2024-**

- **Project: A Recipe for Efficient Sim-to-Real Transfer in Manipulation with Online Imitation–Pretrained World Models**
  - Led the project, built a imitation learning sim-to-real pipeline with limited real-world demonstrations on several tasks.
  - The success rates significantly outperform current widely adopted imitation learning methods.

Zhuowen Tu's Research Group (UCSD) **San Diego, U.S.**
Advisor: Prof. Zhuowen Tu **01/2022-03/2024 (03/2023-09/2023 on site)**

- **Project: Diffusion Layout Transformers without Autoencoder**
  - Led the project, built a Transformer-based diffusion model pipeline that can directly operate the inputs in the original space to generate document layouts.
  - The Model outperformed the state-of-the-art model across several different metrics.
  - Corresponding paper was accepted at ECCV 2024.
- **Project: Dual-stage Integration for Conditional Image Generation**
  - Led the project, developed a two-stage pipeline that can not only use a single model to generate images similar to ControlNet with textual inversion technique in the second stage, but also generate the corresponding control features from the first stage with a single model.
  - The model can achieve similar performance with the task-separated models of ControlNet.
  - Corresponding paper was accepted at GCV workshop of CVPR2024.
- **Project: Grounding Diffusion with Token-level Supervision**

  Help a senior student with his project on finetuning the SD Model to achieve better performance in generating objects required in the prompts. Corresponding paper was accepted at CVPR 2024.
- **Project: Bayesian Diffusion Models for 3D Shape Reconstruction**

  Help another student with his project on adding priors to 3D diffusion models. Corresponding paper was accepted at CVPR 2024.

WORK EXPERIENCE

Hillbot Inc. **06/2024-09/2024 (Beijing, China) & 06/2025-09/2025 (San Diego, U.S.)**

Worked as a research intern, helped to develop reinforcement learning and imitation learning pipelines for several real-world manipulation tasks.

OTHER PROJECTS

Computer Graphics Path Tracing IIIS, Tsinghua University

Course project of the course *Advanced Computer Graphics*, received A+ in final grading.

Implement a path tracing algorithm in GLSL with following aspects: (1) Accelerate structure based on KD-Tree; (2) Some special scenes and materials including depth of field, anti-aliasing, transmissive material, frosted glass and some composed materials; (3) Some sampling methods including light-source sampling sampling, BRDF importance sampling and multi-importance sampling.

The project is writen in GLSL and received A+ in the final grading.

SKILLS

Programming Languages: Python, C/C++, GLSL, Verilog, Assembly language (Risc-V)

Languages: Chinese, Cantonese, English

AWARDS

- Athletic Scholarship of Tsinghua University 2021, 2022, 2023
- Freshmen Scholarship of Tsinghua University 2020
- Gold medal (Top 60, National Training Team), 35th China Mathematical Olympiad (CMO) 2019