Yunfei Lu

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Education Background

Xidian University, Xi'an, Shaanxi, China Sept. 2019 – Now

Undergraduate Student
Major in Artificial Intelligence, School of Artificial Intelligence
Expected to graduate in Jun. 2023.

- GPA: 3.9/4.0
- Ranking: 1/157
- Weighted Average Score: 92.3/100.0

Standardized Tests

- CET-4: 628
- CET-6: 661
- TOEFL: 111
  Listening: 30, Reading: 30, Speaking: 22, Writing: 29
- GRE: 332 + 4.0
  Verbal: 163, Quantitative: 169, Analytical Writing: 4.0

Project Experiences

Research Experience Jun. 2022 – Now

Advisor Chaoli Wang, Professor of Computer Science and Engineering, University of Notre Dame

StyleGAN-based Scientific Visualization

- Propose a StyleGAN1-based framework to tackle scientific visualization problems, like view synthesis.
- Improve the performance of generator by changing the constant random input to the generator to Fourier feature, modifying some activation functions in the generator inspired by SIREN, etc.
- Modify the discriminator to enable it to calculate conditional probability with real or fake images and additional condition like the angle of view as inputs.
- Compare our method with existing baselines, including InsituNet, CoordNet, NeRV, to evaluate our method more comprehensively.
- Still working on the project to improve our method now. Plan to publish it in Mar. 2023.

Internship Experience Aug. 2022 – Oct. 2022

Company Vanyi Tech, wholly-owned subsidiary of Vanke Co., Ltd

Location Science and Technology Park, Nanshan District, Shenzhen, China

Intelligent Synthesis of Colorful Architectural Plans

- Crop images from our collected dataset of colorful architectural plans to desired size and generate random masks for each image.
- Pretrain the StableDiffusion-based model with images and generated masks to make it more adaptive to downstream tasks.
- Finetune our model to make it able to generate complete colorful architectural plans by adding details like vegetation, waters, branch ways, etc. by inputting incomplete architectural plans with only significant components containing buildings and main roads and text prompts.

Professional Skills

- Programming Language: Python, C/C++, MATLAB
- Deep Learning Framework: PyTorch, TensorFlow
- Other skills: Familiar with Linux system, LATEX and HTML

♡ Awards & Honors

- *China National Scholarship* Dec. 2020
- *Mathematics competition of Chinese College Students*, First Prize Dec. 2020
- *Second-class Academic Scholarship* Dec. 2021
- *Contemporary Undergraduate Mathematical Contest in Modeling*, Provincial First Prize Dec. 2021
- *Mathematical Contest in Modeling*, Meritorious Winner May 2022

Additional Information

- Research Interests: Computer Vision, Deep Learning, Machine Learning