ZONGQI HE

+852 9287 7340 ◇ plume.he@connect.polyu.hk ◇ wuyou012.github.io

EDUCATION

The Hong Kong Polytechnic University(PolyU) Sep. 2021 - Present
BEng (Hons) in Electronic & Information Engineering
GPA: 3.7/4.3 (to be first honour)
Honor: Achieved "A" or "A+" in 18 courses; **Dean's Honours List;** Talent Development Scholarship; 3rd Place, Sparse Neural Rendering Challenge, ECCV AIM Workshop, 2024; 2nd Place, Efficient Video Super-Resolution Competition, ECCV AIM Workshop, 2024
Research Interests: 3D Reconstruction, Diffusion, Vision Conditioning, Image Generation, Computer Vision

PUBLICATIONS

- **Zongqi He**, Zhe Xiao, Wenjing Jia, Kin-Man Lam, et al. "MFGAN: OCT Super-resolution and Enhancement with Blind Degradation and Multi-frame Fusion". In International Workshop on Advanced Imaging Technology (IWAIT) 2025. (Accepted)
- Zhe Xiao, **Zongqi He,** Wenjing Jia, Kin-Man Lam, et al. "A Multi-Perceptual Learning Network for Retina OCT Image Denoising and Classification". In 2024 Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC). (Accepted)
- **Zongqi He**, Zhe Xiao, Kin-Chung Chan, Yushen Zuo, Jun Xiao, Kin-Man Lam. "See In Detail: Enhancing Sparse-view 3D Gaussian Splatting with Local Depth and Semantic Regularization". In Proceedings of the International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2025. (Under review)
- Yushen Zuo, Jun Xiao, Kin-Chung Chan, Rongkang Dong, Cuixin Yang, **Zongqi He**, Hao Xie, Kin-Man Lam, "Towards Multi-View Consistent Style Transfer with One-Step Diffusion via Vision Conditioning". In Proceedings of the European Conference on Computer Vision Workshop (ECCV-W), 2024.

RESEARCH EXPERIENCE

Enhancing Sparse-view 3D Gaussian Splatting The Hong Kong Polytechnic University
Research Student *May 2024 - Sep. 2024*

· Proposed a 3DGS method, namely SIDGaussian, for novel view synthesis based on sparse inputs, which can achieve real-time and high-quality rendering of 3D scenes. Designed a semantic regularization technique that maintains the semantic coherence of rendered images across different viewpoints Proposed local depth regularization, which constrains depth values to improve generalization on unseen views.
· Responsible for conducting experiments and demonstrated that the method significantly outperforms state-of-the-art novel view synthesis methods, delivering up to a 0.4dB improvement in terms of PSNR on the LLFF dataset.

Multi-View Consistent Style Transfer with One-Step Diffusion The Hong Kong Polytechnic University
Research Student *Dec. 2023 - Mar. 2024*

· Proposed a one-step multi-view consistency diffusion model that effectively synthesizes images from different viewpoints with various style references while preserving image content and multi-view consistency.
· Designed LoRA to significantly reduce the number of trainable parameters during fine-tuning, enabling efficient model adaptation for multi-view style transfer.
· Introduces a vision-language project that uses the pre-trained CLIP image encoder to encode the style information from the reference style images, which is further injected into the SD-Turbo model for generating styled images of different viewpoints.
· Conducted experiments show that the method has superior capability in rendering artistic styles across images from different viewpoints while preserving multi-view consistency.

Retina OCT Image Denoising and Classification The Hong Kong Polytechnic University
Research Student *Oct. 2023 - Feb. 2024*

- Improved the LACNN architecture by replacing the original backbone of the LACNN with ResNet.which significantly enhances the model's ability to accurately classify OCT images.
- Proposed the FD Loss into the GAN architecture, which helps preserve the structural integrity of OCT images during denoising. This facilitates multi-perceptual learning, enhancing both the quality of the denoised images and the classification accuracy.
- Conducted experiments of model which achieves a CNR score of 6.351, and an MSR score of 11.573, outperforming many existing methods on OCT images.

EXTRACURRICULAR ACTIVITIES

Sub-team lead — E-formula Racing Team, PolyU
Leader — *Jun. 2024 - Present*

- Spearheaded the design and development planning for the upcoming year, coordinating design concepts, manufacturing processes, and weekly team meetings to ensure high design quality and achieve optimal project outcomes.
- Designed and implemented a multi-channel marketing campaign, including social media, email marketing, and campus posters, which increased online engagement by 40% and physical participation by 25% compared to the previous year.

Vehicle Dynamics member — E-formula Racing Team, PolyU
Menber — *Sep. 2022 - May. 2024*

- Designed vehicle suspension systems involving utilizing advanced software tools such as Lotus and Adams to ensure optimal performance and reliability. This process requires a deep understanding of vehicle dynamics, material properties, and load conditions.
- Involved in assembly and adjustment of steering and braking components and linkages. It requires attention to detail, precision, and a thorough understanding of mechanical systems.

Hall activities organizer — Student Hall, PolyU
Leader — *Nov. 2021 -May. 2023*

- Coordinated with a diverse team of 9 enthusiastic members to meticulously plan and organize three exciting recreational activities for over 100 hallmates, ensuring that everyone would have an enjoyable and memorable experience.
- Liaise with caterers, florists, venue managers, and other event professionals to ensure timely delivery and setup of services. Manage contracts, payments, and communication to avoid delays or discrepancies.

International Volunteer — Cambodia
Member — *Jun. 2023*

- Taught IT-related courses to over 300 students across six grades in three different schools. Utilized diverse teaching methods, including incorporated educational games, hands-on coding exercises, and real-world applications of IT, to cater to varying learning styles.
- Designed and administered assessments to evaluate students' progress and identify areas for improvement. Provided constructive feedback and personalized guidance to help students achieve their learning goals.

SKILLS AND INTERESTS

Computer	Python, MATLAB, STM32; beginner in C++, Torch, JAX, SolidWorks, Lotus, Adams, PADS Logic & Layout
Language	Mandarin (native), English (native)