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EDUCATION

University of Chinese Academy of Sciences

M.Eng. in Electronic Information

Advisor: Prof. Chao Dong

GPA: 3.6/4.0

Shenzhen, China

Sept. 2023 – Present

Tianjin University

B.Eng. in Computer Science and Technology

Advisor: Prof. Junjie Chen

GPA: 3.84/4.0

Tianjin, China

Sept. 2019 – Jun. 2023

PROJECTS

DiffBIR: Image Restoration Model Based on Generative Prior

Mar. 2023 – Jun. 2024

Leader: Chao Dong (SIAT)

- **Task:** Blind image restoration with photo-realistic outputs.
- **Innovation:** **1)** Leverage Stable Diffusion's generative capabilities to achieve photo-realistic image restoration; **2)** Propose a two-stage framework that decouples restoration and generation, designed to handle complex degradations in real-world scenarios; **3)** Address three restoration tasks in one framework.
- **Outcome:** **1)** Achieved SOTA results in three tasks: blind image super-resolution, blind face restoration, and blind image denoising; **2)** Over **3,800 stars on GitHub** and more than **300 citations**.

HYPIR: Large-Scale One-step Image Restoration Model

Mar. 2025 – Jul. 2025

Leader: Chao Dong (SIAT), Jinjin Gu (University of Sydney)

- **Task:** One-step image restoration with performance comparable to multi-step models.
- **Innovation:** **1)** Explicitly propose a simple and effective training paradigm for image restoration: diffusion initialization + adversarial training; **2)** Theoretically explain why diffusion initialization is a good starting point for image restoration model; **3)** Scale up this simple paradigm to larger base models.
- **Engineering:** Multi-node training; FSDP2 training framework.
- **Outcome:** **1)** A concise training paradigm that enables more efficient training, faster inference, and performance on par with or exceeding multi-step models. **2)** A practical image restoration model with fast inference speed, excellent real-world performance, and rich user control.

HYPVR: Large-Scale One-step Video Restoration Model

Jun. 2025 – Present

Leader: Chao Dong (SIAT), Jinjin Gu (University of Sydney)

- **Task:** One-step video restoration with efficient training and inference.
- **Innovation:** Fine-tuning a one-step image restoration model into a one-step video restoration model, achieving both temporal consistency and visual quality.
- **Engineering:** FSDP2 training framework with content parallel.
- **Outcome:** Ongoing project.

PUBLICATIONS

- **Lin, X.**, He, J., Chen, Z., Lyu, Z., Dai, B., Yu, F., ... & Dong, C. (2024, September). Diffbir: Toward blind image restoration with generative diffusion prior. In European conference on computer vision (pp. 430-448). Cham: Springer Nature Switzerland.
- **Lin, X.**, Yu, F., Hu, J., You, Z., Shi, W., Ren, J. S., ... & Dong, C. (2025). Harnessing Diffusion-Yielded Score Priors for Image Restoration. arXiv preprint arXiv:2507.20590.
- Chen, Z., He, J., **Lin, X.**, Qiao, Y., & Dong, C. (2024). Towards real-world video face restoration: A new benchmark. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (pp. 5929-5939).
- He, J., Xue, T., Liu, D., **Lin, X.**, Gao, P., Lin, D., ... & Liu, Z. (2024). Venhancer: Generative space-time enhancement for video generation. arXiv preprint arXiv:2407.07667.
- Liu, Y., He, J., Liu, Y., **Lin, X.**, Yu, F., Hu, J., ... & Dong, C. (2024). AdaptBIR: Adaptive Blind Image Restoration with latent diffusion prior for higher fidelity. Pattern Recognition, 155, 110659.