Sixiang Chen

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Education

- **School of Ocean Information Engineering, Jimei University** — Xiamen, China
  Bachelor of Communication Engineering; — *July 2019 - June 2023*
  Courses: *Functions of Complex Variable(100/100), Programming Fundamentals(98/100,C language), Mathematical Modeling (96/100,Python/MATLAB language), Advanced Mathematics (92/100), Probability Theory and Mathematical Statistics (96/100).*

- **Hong Kong University of Science and Technology (Guangzhou)** — Guangzhou, China
  Research Assistant; — *August 2023 -*
  Research Proposal: *Image Restoration, Vision Transformer, Prompt Learning, Diffusion, AIGC.*

Research Interest

- Perform image restoration under real-world adverse conditions.

- Efficient neural network for low-level applications (ViTs, Diffusions, Mambas).

- Explore the applications of AIGC (Artificial Intelligence Generated Content) technology.

Publications

- **ECCV'24: Teaching Tailored to Talent: Adverse Weather Restoration via Prompt Pool and Depth-Anything Constraint** : Sixiang Chen, Tian Ye, Kai Zhang, Zhaohu Xing, Yunlong Lin, Lei Zhu. [**PDF**, **Code**,]
- **ECCV'24: Semi-Supervised Video Desnowing Network via Temporal Decoupling Experts and Distribution-Driven Contrastive Regularization** : Hongtao Wu, Yijun Yang, Angelica Aviles-Rivero, Jingjing Ren, Sixiang Chen, Haoyu Chen, Lei Zhu. [**PDF**, **Code**,]
- **MICCAI'24: Cross-conditioned Diffusion Model for medical image-to-image translation** : Zhaohu Xing, Sicheng Yang, Sixiang Chen, Tian Ye, Lei Zhu. [**PDF**, **Code**,]
- **CVPR'24 Highlight: Learning Diffusion Texture Priors for Image Restoration**: Tian Ye, Sixiang Chen, Wenhao Chai, Zhaohu Xing, Jing Qin, Ge Lin, Lei Zhu. [**PDF**, **Code**,]
- **ICCV'23: Sparse Sampling Transformer with Uncertainty-Driven Ranking for Unified Removal of Raindrops and Rain Streaks**: Sixiang Chen, Tian Ye†, Jinbin Bai, Jun Shi, Erkang Chen, Lei Zhu. [**PDF**, **Code**, **Project**]
- **ICCV'23: AWRCP: Reinventing Adverse Weather Removal with Codebook Priors**: Tian Ye†, Sixiang Chen†, Jinbin Bai, Shi Jun, Chenghao Xue, Jingjia Jiang, Junjie Yin, Erkang Chen, Yun Liu. *Co-first author* [**PDF**, **Code**]
- **ACM MM'23: Uncertainty-Driven Dynamic Degradation Perceiving and Background Modeling for Efficient Single Image Desnowing**: Sixiang Chen†, Tian Ye†, Chenghao Xue, Haoyu Chen, Yun Liu, Erkang Chen, Lei Zhu.
- **ACM MM'23: CPLFormer: Cross-scale Prototype Learning Transformer for Image Snow Removal**: Sixiang Chen†, Tian Ye†, Yun Liu, Jinbin Bai, Haoyu Chen, Yunlong Lin, Jun Shi, Erkang Chen.
- **ACM MM'23: Sequential Affinity Learning for Video Restoration**: Tian Ye†, Sixiang Chen† , Yun Liu, Wenhao Chai, Jinbin Bai, Wenbin Zou, Yunchen Zhang, jiang mingchao, Erkang Chen, Chenghao Xue. *Co-first author*
- **ACM MM'23: NightHazeFormer: Single Nighttime Haze Removal Using Prior Query Transformer**: Yun Liu, Zhongsheng Yan, Sixiang Chen*, Tian Ye, Wenqi Ren, Erkang Chen. *Corresponding author*[**PDF**, **Code**]
- **Digital Signal Processing: Dual-former: Hybrid Self-attention Transformer for Efficient Image Restoration**: Sixiang Chen, Tian Ye, Yun Liu, Erkang Chen.[**PDF**]
- **BMVC'23: Five A+ Network: You Only Need 9K Parameters for Underwater Image Enhancement**: Jingxia Jiang†, Tian Ye†, Jinbin Bai†, Sixiang Chen, Wenhao Chai, Jun Shi, Yun Liu, Erkang Chen.[**PDF**, **Code**]
- **ICASSP'23: DEHRFormer: Real-time Transformer for Depth Estimation and Haze Removal from Varicolored Haze Scenes**: Sixiang Chen†, Tian Ye†, Jun Shi, Yun Liu, JingXia Jiang, Erkang Chen, Peng Chen. [**PDF**]
- **ICASSP'23: MSP-Former: Multi-Scale Projection Transformer for Single Image Desnowing**: Sixiang Chen†, Tian Ye†, Yun Liu, Taodong Liao, Jingxia Jiang, Erkang Chen, Peng Chen. [**PDF**]
- **Displays (Q2): Robust back-scattered light estimation for underwater image enhancement with polarization**: Sixiang Chen, Erkang Chen, Tian Ye, Chenghao Xue. [**PDF**]
- **ACCV'22: Towards Real-time High-Definition Image Snow Removal: Efficient Pyramid Network with Asymmetrical Encoder-decoder Architecture**: Tian Ye†, Sixiang Chen†, Yun Liu, Yi Ye, Erkang Chen *Co-first author.* [**PDF**]
- **ECCV'22 Oral: Perceiving and Modeling Density for Image Dehazing**: Tian Ye, Mingchao Jiang, Yunchen Zhang, Liang Chen, Yun Liu, Sixiang Chen, Erkang Chen. [**PDF**, **Code**]
- **CVPRW'22: Underwater Light Field Retention: Neural Rendering for Underwater Imaging**: Tian Ye†, Sixiang Chen† , Yun Liu, Yi Ye, Erkang Chen, Yuche Li *Co-first author.* [**PDF**, **Code**]

Arxiv Preprint

- **Arxiv'22: SnowFormer: Context Interaction Transformer with Scale-awareness for Single Image Desnowing**: Sixiang Chen[†], Tian Ye[†], Yun Liu, Erkang Chen. [**PDF**, **Code**]

Research Service

- **Reviewer**: CVPR 2022 NTIRE workshop, ACCV 2022, ICRA 2023, ICCV 2023, ACMMM 2023 / 2024, TMM, ECCV 2024, TCSVT.

Skills Summary

- **Languages**: Python, C, JAVA.
- **Frameworks**: Opencv, Pytorch, Numpy.
- **Soft Skills**: Leadership, Science Writing, Independent Thinking.

College Competitions and Awards

- **Outstanding Graduate in Jimei University, 2023.**: Rewarding excellent students during bachelor study.
- **International Third Price, Team Leader**: Mathematical Contest In Modeling, 2022.
- **National Second Prize, Team Leader**: China Undergraduate Mathematical Contest in Modeling, 2021.
- **National Second Prize, Team Leader**: Mathorcup Mathematical Contest in Modeling, 2021.