Chunming He

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Education

Duke University, China 2024 – 2027 (expected)

Ph.D. in Biomedical Engineering (TOP 3 in the U.S.) and Computer Science
Advisor: Prof. Sina Farsiu

Tsinghua University, China 2021 – 2024

Master student in Artificial Intelligence at Shenzhen International Graduate School
Advisor: Prof. Xiu Li

Honors and Awards

Pratt-Gardner Fellowship in Duke University 2024
John Chambers Fellowship in Duke University 2024
Outstanding Graduate of Tsinghua University in Tsinghua University 2024
Outstanding Master's Thesis of Tsinghua University in Tsinghua University 2024
National Scholarship in Tsinghua University 2023

Selected Publications

Here is a list of my publications (selected). For full publications, please refer to my Google Scholar and Github.

Accepted (†equal contribution, *corresponding author)

- Chengyu Fang†, **Chunming He**†,*, Fengyang Xiao, Yulun Zhang, Longxiang Tang, Yuelin Zhang, Xiu Li*: *Real-world Image Dehazing with Coherence-based Label Generator and Cooperative Unfolding Network*, Advances in Neural Information Processing Systems (**NeurIPS**), Spotlight, 2024. [PDF] [CODE]
- **Chunming He**, Kai Li*, Yachao Zhang, Yulun Zhang, Zhenhua Guo, Xiu Li*, Martin Danelljan, Fisher Yu: *Strategic Preys Make Acute Predators: Enhancing Camouflaged Object Detectors by Generating Camouflaged Objects*, International Conference on Learning Representations (**ICLR**), 2024. [PDF] [CODE]
- **Chunming He**†, Kai Li†, Yachao Zhang, Guoxia Xu, Longxiang Tang, Yulun Zhang, Zhenhua Guo, Xiu Li*: *Weakly-Supervised Concealed Object Segmentation with SAM-based Pseudo Labeling and Multi-scale Feature Grouping*, Advances in Neural Information Processing Systems (**NeurIPS**), 2023. [PDF] [CODE]
- **Chunming He**, Kai Li*, Guoxia Xu, Yulun Zhang, Runze Hu, Zhenhua Guo, Xiu Li*: *Degradation-Resistant Unfolding Network for Heterogeneous Image Fusion*, International Conference on Computer Vision (**ICCV**), 2023. [PDF]
- **Chunming He**, Kai Li*, Yachao Zhang, Longxiang Tang, Yulun Zhang, Zhenhua Guo, Xiu Li*: *Camouflaged Object Detection with Feature Decomposition and Edge Reconstruction*, IEEE International Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023. [PDF] [CODE]
- **Chunming He**, Kai Li*, Guoxia Xu, Jiangpeng Yan, Longxiang Tang, Yulun Zhang, Yaowei Wang, Xiu Li*: *HQG-Net: Unpaired Medical Image Enhancement with High-Quality Guidance*, IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2023. [PDF] [CODE]
- Mingye Ju†, **Chunming He**†, Can Ding*, Wenqi Ren, Lin Zhang: *AIIE: All-Inclusive Image Enhancement via DCT Data Adjustment*, EEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2023. [PDF]
- Guoxia Xu†, **Chunming He**†, Hao Wang*, Hu Zhu, Weiping Ding: *DM-Fusion: Deep Model-Driven Network for Heterogeneous Image Fusion*, IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2023. [PDF]
- Mingye Ju†, **Chunming He**†, Juping Liu, Bin Kang, Jian Su, Dengyin Zhang: *IVF-Net: An Infrared and Visible Data Fusion Deep Network for Traffic Object Enhancement in Intelligent Transportation Systems*, IEEE Transactions on Intelligent Transportation Systems (**TITS**), 2022. [PDF]

- Lizhen Deng[†], **Chunming He**[†], Guoxia Xu, Hu Zhu[*], Hao Wang: *PcGAN: A Noise Robust Conditional Generative Adversarial Network for One Shot Learning*, IEEE Transactions on Intelligent Transportation Systems (**TITS**), 2022. [PDF]

Under Review

- **Chunming He**[†], Chenyu Fang[†], Yulun Zhang[*], Tian Ye, Kai Li, Longxiang Tang, Zhenhua Guo, Xiu Li, and Sina Farsiu[*]: *Reti-Diff: Illumination Degradation Image Restoration with Retinex-based Latent Diffusion Model*, Submitted to **ICLR** 2025.
- **Chunming He**, Kai Li, Yachao Zhang, Longxiang Tang, Yulun Zhang, Zhenhua Guo, Xiu Li, and Sina Farsiu[*]: *Segment Concealed Objects with Incomplete Supervision*, Submitted to **IEEE TPAMI**.
- **Chunming He**, Yuqi Shen, Chengyu Fang, Yulun Zhang[*], Kai Li, Zhenhua Guo, Xiu Li[*]: *Diffusion Models in Low-Level Vision: A Survey*, Submitted to **IEEE TPAMI**.
- **Chunming He**, Kai Li, Yachao Zhang, Longxiang Tang, Yulun Zhang, Zhenhua Guo, Xiu Li, and Sina Farsiu[*]: *Concealator: Enhancing Concealed Object Segmentor By Generating Concealed Objects*, Submitted to **IEEE TPAMI**.

Skills

- Programming Languages: Python, MATLAB, C++, LaTex
- Language: Chinese Mandarin (native), English (fluent, TOEFL: 100)