Junpeng Jing

Curriculum Vitae

Beihang University, C.N.
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Second-year Master student

BIOGRAPHY

2020.9 – Present
Master, *Dept. of Cyber Science and Technology*, Beihang University, C.N..
- GPA: 3.85/4.0 (1/26)
- Group: *Multimedia Computing Towards Communications (MC2 Lab)*
- Topics: **Information Hiding**, **Image Compression**, **Stereo Image Process**
- Advisor:*Prof. Zhenyu Guan* (*Scholar Page*), *Mai Xu* (*Scholar Page*), *Xin Deng* (*Scholar Page*)

2016.9 – 2020.7
Bachelor, *Dept. of Electronic Information Engineering*, Beihang University, C.N..
- GPA: 3.58/4.0 (64/297)

RESEARCH INTERESTS

Reversible Image Conversion, Stereo Image Process, Optical Flow

PUBLICATIONS

My *Google Scholar Page*.

[1] Zhenyu Guan[1], **Junpeng Jing**[1] (co-first author), Xin Deng, Mai Xu, Lai Jiang, Zhou Zhang, Yipeng Li. *DeepMIH: Deep Invertible Network for Multiple Image Hiding.* IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**, IF=24.314), 2022. (*Paper*) (*Code*)

[2] **Junpeng Jing**, Xin Deng, Mai Xu, Jianyi Wang, Zhenyu Guan. *HiNet: Deep Image Hiding by Invertible Network.* Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**), 2021. (*Paper*) (*Code*)

PATENT

[1] Xin Deng, **Junpeng Jing**, Zhenyu Guan, Mai Xu, Dawei Li. *An Image Hiding Technology and Method.* C.N. 202011290006.9

RESEARCHES

Researches on Image Hiding

2020.7 – 2020.12
HiNet: Deep Image Hiding by Invertible.
- Main works::
  - We propose a novel image hiding network, namely HiNet, based on invertible neural network for the task of large-capacity image hiding.
  - We design two concealing and revealing modules with differentiable and invertible property, aiming to make the image hiding process fully reversible.
  - We propose a low-frequency wavelet loss to control the distribution of secret information in different frequency bands, which significantly improves the hiding security.

2021.1 – **DeepMIH: Deep Invertible Network for Multiple Image Hiding**.
2022.1 ○ Main works:
- We propose a novel invertible multiple image hiding framework, to hide multiple secret images into the same cover image in a new manner.
- We investigate two important findings about image hiding, which lay great foundations for the network and loss function design for multiple image hiding.
- We propose an importance map module to guide the current image hiding with the results of previous image hiding, to fully utilize the hiding potential of cover image.
- We develop a new multi-stage training strategy with the designed stage losses, to improve the training stability and the performance of multiple image hiding.

Researches on Stereo Image Process

2022.1 – **StereoSRT: A Stereo Image Super-Resolution Transformer**.
2022.4 ○ Main works:
- We propose a transformer based architecture for stereo image super-resolution, simultaneously leverage the self and cross information between stereo image pairs.

○ We got the 6-th place at NTIRE 2022 Challenge on Stereo Image Super-resolution, 2022 (CVPR Workshop)

SCHOLARSHIPS

2022	Top-10 Graduate Students	*Top 0.5%, 10,000¥*
	– Highest honor of the postgraduate in BUAA	
2021	National Scholarship	*Top 1%, 20,000¥*
	– Directly Awarded by the National Ministry of Education	
2021	Postgraduate Academic Scholarship	*1st Prize, 7,500¥*
2020	Postgraduate Academic Scholarship	*2nd Prize, 5,000¥*
2017	Science and Technology Scholarship of Beihang University	*2nd Prize, 1,000¥*

HONORS & AWARDS

2021	Outstanding Graduate Student	*Top 5%*
2021	Merit Student	*Top 5%*
2019	National College-student Electronics Design Contest	*1st Author & 2nd Prize*
2019	29th Fengru Cup "Nokia" Innovation Contest	*1st Author & 2nd Prize*
2018	Beijing College-student Electronics Design Contest	*1st Author & 2nd Prize*
2018	COMAP's Mathematical Contest in Modeling	*Honorable Winner*
2017	27th "Feng Ru Cup" Competition of Innovation	*1st Author & 3rd Prize*

PROJECTS

2018 – 2019	National College Student Innovation and Entrepreneurship Training Program	
	– Autonomous Tracking UAV Based on Deep Learning	*1st Author*

SKILLS

Programming: Matlab, Python (PyTorch)

Word processing: LaTeX, Microsoft Office, Adobe Illustrator

Languages: Chinese, English (CET-4 CET-6, IELTS)

Daily-Hobbies: Bodybuilding, Basketball, Chess