

Chao Huang

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EDUCATION

Nanjing University, Nanjing, Jiangsu, China

- B.S. in Electronic Science and Engineering
- Major: Communication Engineering

Sep 2015 – Jun 2019

RESEARCH EXPERIENCE

Optical Flow Compensation for Multi-Frames Super-Resolution

- Vision Lab, Nanjing University
- Supervisor: Prof. Zhan Ma
- Stacked multiple deep convolutional neural networks to deal with different kinds of displacements
- Proposed a U-net shape CNN to estimate the optical flow between two or more neighboring frames
- Employed a image warping in the neighboring two frames to estimate the current frame and achieved multi-frames super resolution

Feb 2018 – May 2018

Compressive Sampling for Array Cameras

- Computer Lab, Duke Kunshan University
- Supervisor: Prof. David Brady
- Selected a Compressed-Sensing method to reduce computation in the encoder and processed raw bayer format data from camera
- Achieved better results than JPEG/JPEG2000: maintaining high quantitative profile like 35dB in PSNR with compression ratio around 1/200
- Designed an integer kernel strategy for training and reduced the power consumption largely about 10-100 times

Jun 2018 – Aug 2018

Extreme Image Compression

- Vision Lab, Nanjing University
- Supervisor: Prof. Zhan Ma
- Adopted generative adversarial networks for extreme image compression
- Proposed a novel Multi-Scale AutoEncoder framework
- Reconstructed the images with acceptable perceptual quality at a low bitrate (like 0.03bpp)

Sep 2018 – Feb 2019

Neural Stitching

- C.I.T.E Lab, Nanjing University
- Supervisors: Prof. Xun Cao and Prof. Yue Tao
- Used a low resolution image as guidance and registered high resolution images to the low-res image
- Combined plane sweep volume(PSV) method with CNN and accomplished the de-parallax task while maintaining resolution

Oct 2018 – Dec 2018

OTHER WORK EXPERIENCE

YANSHENG TECHNOLOGY CO., LTD., Guangzhou, Guangdong, China

- Assistant Researcher,
- Improved the storage algorithm and program structure, provided a powerful data analysis function in order to improve Fujian traffic system's efficiency
- Participated in web page design and helped establish a user friendly interface with quick response and concise style operation

Jul 2017 – Aug 2017

Aqueti(China) Technology Inc., Co., Suzhou, Jiangsu, China

- Assistant Research and Develop Engineer,
- Established multi-views cameras system and collected image datas from different objects and scenes to make training datasets
- Developed novel convolutional neural network based algorithms for array cameras data processing pipeline

Jun 2018 – Aug 2018

PUBLICATIONS	JOURNALS
	[1] X. Yan, C. Huang , and D. Brady, “Compressive Sampling for Array Cameras,” <i>Submitted to Nature Communications</i> , Jan 2019.
	CONFERENCES
	[1] C. Huang , H. Liu, and Z. Ma “Extreme Image Compression via Multiscale Autoencoders with Generative Adversarial Optimization,” <i>Submitted to ICIP 2019</i> , Jan 2019.
PATENT	Compressed sampling in array cameras
	▪ Status: In application Nov 2018
	Method and apparatus of extreme image compression using multi-scale autoen-coder with generative adversarial optimization,
	▪ Status: In application Mar 2019
CAMPUS ACTIVITIES	Xianyu Sign Language Club , Nanjing University
	▪ Vice President Aug 2016 – Jun 2017
	• Organized and held public benefit activities about sign language for students in Nanjing University
	Academic Department , Nanjing University
	▪ Vice President Aug 2016 – Jun 2017
	• Organized and held a series of academic exchange activities such as professional lecture and experience sharing
AWARDS & SCHOLARSHIPS	▪ Special-Class People’s Scholarship, Nanjing University Dec 2016
	▪ Second-Class People’s Scholarship, Nanjing University Dec 2017
	▪ Yang Yongman Scholarship, Nanjing University Jan 2018
LANGUAGES	▪ Mandarin: Native language.
	▪ English: Fluent (speaking, listening, reading, writing).
	▪ Cantonese: Fluent (reading, listening, speaking); Intermediate (writing).
	▪ Russian: Basic (reading, listening, speaking, writing);
PROGRAMMING SKILLS	▪ Language: MATLAB,C/C++,Python
	▪ Frameworks: Pytorch, Tensorflow.
INTERESTS	Computer Vision, Computer Graphics, Deep Learning, Signal Processing.