

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

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| 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 VCIP 2019</i> , May 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 | <ul style="list-style-type: none"> ▪ 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. |