

# KAI CHEN

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No.129 Luoyu Road, Hongshan District, Wuhan, Hubei, P.R. China

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## EDUCATION

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- M.Eng. in Photogrammetry and Remote Sensing, **Wuhan University** August 2016 - Present
- Adviser: Prof. Jian Yao
  - Research Interests: Image and Video Processing
  - GPA: 3.71/4.00
- B.Eng. in Remote Sensing Science and Technology, **Wuhan University** August 2012 - June 2016
- Graduate with Honor
  - Thesis: Panorama Completion Based on Graph Cuts Optimization
  - Excellent Bachelor's Degree Thesis of Hubei Province
  - GPA: 3.87/4.00 (Top 3%)

## RESEARCH EXPERIENCE

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- Image Completion** September 2015 - July 2016
- Designed a unified framework to complete 360 panoramas.
- Affine Image Rectification** July 2016 - May 2017
- Rectify content distortion in tiled images with features in frequency domain.
  - Proposed an efficient image completion algorithm based on affine image rectification.
- Image and Video Blending** May 2017 - August 2017
- Evaluated performance of different blend methods: Multi-band blending, poisson blending, mean value coordinate blending, pyramid convolution blending, etc.
  - Designed an effective blending framework for video blending.
- Video Stitching** August 2017 - December 2017
- Proposed a new motion model for video stitching.
  - An effective video stitching method balancing spatial alignment and temporal consistency.
- Image Stitching** December 2017 - Present
- Proposed to combine multiple constraints in unified content-preserving warping framework for image stitching.
  - Designed a more general framework GCPW to handle color difference between images.

## PUBLICATIONS

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### CONFERENCE

1. **Kai Chen**, Jian Yao, Menghan Xia, Xinyuan Gui, Li Li and Xiaohu Lu. "A Unified Blending Framework for Panorama Completion via Graph Cuts", The XXIII ISPRS Congress (ISPRS 2016), Accepted.
2. **Kai Chen**, Jian Yao, Binbin Xiang and Jingmin Tu. "Video Stitching with Extended-MeshFlow", The 24th International Conference on Pattern Recognition (ICPR 2018), Accepted.
3. **Kai Chen**, Jian Yao, Binbin Xiang and Li Li. "Multiple Combined Constraints for Image Stitching", The 25th IEEE International Conference on Image Processing (ICIP 2018), Accepted.
4. **Kai Chen**, Jingmin Tu and Jian Yao. "xxxx xxxx xxxx", The 14th Asian Conference on Computer Vision (ACCV 2018), Submitted.

### JOURNAL

1. **Kai Chen**, Jingmin Tu and Jian Yao. "Generalized Content-Preserving Warp: Direct Photometric Alignment beyond Color Consistency", IEEE Access, 2018, Submitted.

## INVENTION PATENTS

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1. Jian Yao, **Kai Chen**, Li Li, Menghan Xia and Renping Xie. "A Method and Unified System for Panorama Completion via Graph Cuts", 2016, Under review.
2. Jian Yao, **Kai Chen** and Jinjie Zhao. "An Online Video Stitching Method Based on MeshFlow", 2018, Under review.

## AWARDS & SCHOLARSHIPS

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|---|----------------|
| 1. Second Prize Scholarship for undergraduates            | September 2013 |
| 2. First Prize Scholarship for undergraduates             | September 2014 |
| · Top 6%  |                |
| 3. Wang Zhizhuo Innovative Talent Award                   | October 2014   |
| · 2 out of 254 competitors won this award                 |                |
| 4. Second Prize Scholarship for undergraduates            | September 2015 |
| 5. Outstanding Undergraduate Graduate of Wuhan University | June 2016      |
| 6. Excellent Bachelor's Degree Thesis of Hubei Province   | July 2016      |
| · Rank 1st among 254 graduates                            |                |
| 7. First Prize Scholarship for postgraduates              | September 2017 |
| · Top 5%  |                |

## TECHNICAL SKILLS

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### Programming Languages

C/C++, MATLAB, Python, CMake

### Tools and Software Skills

OpenCV, Qt, Eigen, Ceres, CGAL

### Others

L<sup>A</sup>T<sub>E</sub>X, can write well organized paper