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# Bingbing Zhuang

## Education

- 2015– Present **Ph.D. Candidate in Electrical and Computer Engineering.**  
National University of Singapore  
Advisors: Loong Fah Cheong, Gim Hee Lee
- 2011–2015 **Bachelor in Electric Engineering and Information Science.**  
University of Science and Technology of China (USTC), Hefei, China  
GPA: 3.96/4.30, Rank: 3/105; Math GPA: 4.20/4.30

## Research Interests

3D Computer Vision in general, including both low-level geometric problems (Structure-from-Motion/SLAM, 3D Reconstruction, Pose estimation) and high-level perception of 3D environment or humans.

## Experience

- 2018 **Research Intern**, NEC Laboratories America, CA.  
Jun.-Nov. Mentors: Prof. Manmohan Chandraker, Dr. Quoc-Huy Tran and Dr. Pan Ji in the Media Analytics group. Research on robust Structure-from-Motion and SLAM on unconstrained videos.
- 2014 **Research Intern**, *Computer Science*, The University of Hong Kong.  
Jul.-Aug. Advisor: Prof. Yizhou Yu. Research on Person Re-identification problem based on metric learning and post-rank optimization
- 2014 Jun. **Research Engineer**, *Information Processing Center*, USTC.  
-2015 Jun. Advisor: Prof. Nenghai Yu. Research on abnormal event detection in video based on sparse coding.

## Publications

- Learning Structure-and-Motion Aware Rolling Shutter Correction.**  
Bingbing Zhuang, Quoc-Huy Tran, Pan Ji, Loong-Fah Cheong, Manmohan Chandraker.  
Computer Vision and Pattern Recognition (CVPR), 2019. *Oral Presentation*
- Degeneracy in Self-Calibration Revisited and a Deep Learning Solution for Uncalibrated SLAM.**  
Bingbing Zhuang, Quoc-Huy Tran, Gim Hee Lee, Loong-Fah Cheong, Manmohan Chandraker.  
IEEE/RSJ International Conference on Intelligent Robots and Systems(IROS), 2019.  
[Under Review]
- Baseline Desensitizing In Translation Averaging.**  
Bingbing Zhuang, Loong-Fah Cheong, Gim Hee Lee.  
Computer Vision and Pattern Recognition (CVPR), 2018.

### **Rolling-Shutter-Aware Differential SfM and Image Rectification.**

**Bingbing Zhuang**, Loong-Fah Cheong, Gim Hee Lee.

International Conference on Computer Vision (ICCV), 2017.

### **Person Re-Identification by the marriage of KISS Metric Learning and Post-Rank Optimization: KISSPOP.**

**Bingbing Zhuang**, Ziping Zhu, Fangbemi Abassin Sourou, Nenghai Yu.

International Conference on Internet Multimedia Computing and Service (ICIMCS), 2015

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## **Selected Awards**

- 2015-2019 President's Graduate Fellowship, NUS
- 2015 Excellent Bachelor's Thesis Award (Top 5%), USTC
- 2015 Honorary Rank of Academic Achievement of the Grade 2011 Undergraduates (Top 5%), USTC
- 2011-2015 Top 3 cumulative GPA in the department of EEIS, USTC
- 2011-2015 Numerous Scholarships, USTC
- 2010 Province First Prize in China National Physics Olympiad

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## **Patent Applications**

### **Camera Self-Calibration Using Convolutional Neural Networks with Applications to SFM/SLAM with Uncalibrated Images/Videos**

Q.-H. Tran, B. Zhuang, P. Ji, and M. Chandraker

NEC Laboratories America, Inc. (provisional application US/62/793,948, filed on Jan 2019)

### **Rolling Shutter Correction Using Convolutional Neural Networks with Applications to SFM/SLAM with Rolling Shutter Images/Videos**

Q.-H. Tran, B. Zhuang, P. Ji, and M. Chandraker

NEC Laboratories America, Inc. (provisional application US/62/751,888, filed on Oct 2018)

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## **Professional Services**

- Reviewer Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- British Machine Vision Conference (BMVC)
- ACM International Conference on Multimedia (ACMMM)
- The Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP)

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## **Teaching Assistant**

- 2017 Fall EE5731 Visual Computing, NUS
- 2016-2018 EE4212 Computer Vision, NUS
- Spring
- 2016 Fall CG3207 Computer Architecture, NUS
- 2014 Fall Programming in C language, USTC