Zhengdong Zhang

CONTACT

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ADDRESS

550 Memorial Dr., Apt #13E-1
Cambridge, MA 02139

EDUCATION

Massachusetts Institute of Technology   2014 - 2017(expected)
Doctoral Student in Electrical Engineering and Computer Science, GPA: 5.0/5.0
Supervised by Vivienne Sze.

Massachusetts Institute of Technology   2012 - 2014
Master of Science in Electrical Engineering and Computer Science, GPA: 5.0/5.0
Supervised by Edward Adelson.

Tsinghua University   2007 - 2011
Bachelor of Engineering in Computer Science, GPA: 90.3/100
Supervised by Andrew Chi-Chih Yao.

PUBLICATION

1. TILT: Transform Invariant Low-rank Textures
   Zhengdong Zhang, Arvind Ganesh, Xiao Liang and Yi Ma
   Accepted by the International Journal of Computer Vision (IJCV), November 2011. Conference version presented in ACCV 2010

2. Robust Subspace Discovery via Relaxed Rank Minimization
   Xinggang Wang, **Zhengdong Zhang**, Yi Ma, Xiang Bai, Wenyu Liu, and Zhuowen Tu
   Neural Computation, December 2013

3. Rotate Intra Block Copy for Still Image Coding
   Zhengdong Zhang, and Vivienne Sze
   International Conference on Image Processing (ICIP), September 2010

4. SparkleVision: Seeing the World through Random Specular Microfacets
   Zhengdong Zhang, Phillip Isola and Edward H. Adelson
   Workshop on Computational Camera and Display, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2015

5. Repairing Sparse Low-Rank Texture
   Xiao Liang, Xiang Ren, **Zhengdong Zhang** and Yi m Ma
   European Conference on Computer Vision (ECCV), October 2012

6. Unwrapping Low-rank Textures on Generalized Cylindrical Surfaces
   Zhengdong Zhang, Xiao Liang and Yi Ma
   International Conference on Computer Vision (ICCV), October 2011

7. Camera Calibration with Lens Distortion from Low-rank Textures
   Zhengdong Zhang, Yasuyuki Matsushita and Yi Ma
   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), June 2011

8. Decomposing Background Topics from Keywords by Principal Component Pursuit
   Kerui Min, **Zhengdong Zhang**, John Wright and Yi Ma
   ACM International Conference on Information and Knowledge Management (CIKM) 2010

RESEARCH EXPERIENCE

Microsoft Research Asia   Oct, 2009 - Jun, 2011
Research Intern in Visual Computing Group

- **Web Search and Document Indexing**   Oct, 2009 - Feb, 2010
  With Kerui Min, Supervised by Prof. Yi Ma and Dr. John Wright.

- **Matrix Library and Image Processing Toolbox Implementation on Large Scale Clusters** Nov, 2009 - Jun, 2010
  With Dr. Xu Yang, supervised by Prof. Yi Ma.
- **Translation Invariant Low-rank Textures** Mar, 2010 - Nov, 2010
  With Arvind Ganesh, Xiao Liang, supervised by Prof. Yi Ma
- **Robust Camera Calibration** July, 2010 - Nov, 2010
  supervised by Dr. Yasuyuki Matsushita and Prof. Yi Ma.
- **Rectification of Curved Surface with Low-rank Textures**
  With Xiao Liang, supervised by Prof. Yi Ma. Dec, 2010 - Wed, 2011
- **3D reconstruction of Urban Scenes(B.A. Thesis)** Apr, 2011 - Jun, 2011
  With Hossein Homobaha, Zihan Zhou, Allen Yang, supervised by Prof. Yi Ma.

Microsoft Research Asia July, 2011 - June, 2012
Assistant Researcher in Visual Computing Group

- **Automatic Camera Calibration Toolbox** July, 2011 - Oct, 2011
  With Dr. Yasuyuki Matsushita and Prof. Yi Ma
- **Fast Matrix Library for Low-rank Applications** Aug, 2011 - Nov, 2011
  With Dr. Zhouchen Lin, Gong Cheng, Dr. Yasuyuki Matsushtia and Prof. Yi Ma
- **Texture Repairing and Synthesis** Nov, 2011 - Mar, 2012
  With Prof. Yi Ma
- **Facade Parsing in Urban Scenes** July, 2011 - Mar, 2012
  With Cyril Lan, and Prof. Yi Ma
- **One-Class Multiple Instance Learning** Nov, 2011 - Mar, 2012
  With Xinggang Wang, Prof. Zhuowen Tu and Prof. Yi Ma
- **Common Object Detection** Mar, 2012 - Jun, 2012
  With Xinggang Wang, Prof. Zhuowen Tu and Prof. Yi Ma

Massachusetts Institute of Technology July, 2011 - June, 2012
Research Assistant in Perceptual Science Group

- **Acceleration of Shape Collage** February 2013 - May 2013
  With Phillip Isola and Prof. Edward Adelson
- **Sparkle Vision** October 2013 - May 2014
  With Phillip Isola and Prof. Edward Adelson

National Institute of Informatics, Japan July, 2011 - June, 2012
Research Intern

- **Photometric Stereo and Material Perception** February 2013 - May 2013
  With Yinqiang Zheng and Prof. Imari Sato

INDUSTRY EXPERIENCE

Google, Mountain View Office May, 2013 - Aug, 2013
Engineering Intern in Google Shopping

- **Synthesizing Shopping Items Collage** July, 2011 - Oct, 2011
  With Dr. Yuli Gao

TEACHING EXPERIENCE

- Teaching Assistant of 6.344, Digital Image Processing, at MIT
  Feb, 2014 - May 2014

PATENT

1. ROBUST RECOVERY OF TRANSFORM INVARIANT LOW-RANK TEXTURES
   Zhengdong Zhang, Xiao Liang, Arvind Ganesh and Yi Ma
   U.S. Patent Application Serial No. 12/955,734, filed on November 29, 2010

2. ROBUST CAMERA CALIBRATION AND CAMERA UNDISTORTION
Zhengdong Zhang, Yasuyuki Matsushita and Yi Ma
MS No. 333143.01 (in Application)

3. RECTIFICATION OF CHARACTERS AND TEXT AS TRANSFORM IN-VARIANT LOW-RANK TEXTURES
Xin Zhang, **Zhengdong Zhang**, Xiao Liang, Zhouchen Lin and Yi Ma
MS No. 333145.01 (in Application)

4. LEADING EDGE DETECTION, ROTATION, AND OCCLUSION OF SPACE BETWEEN NEIGHBORING IMAGE PAIRS OF A SET OF IMAGES
Yuli Gao, **Zhengdong Zhang**
Google Ref. No. GP-19754-00-US, Assignment and Declaration, JMI Ref. No. GOOG-1630

COURSE WORK

- 6.438 Algorithm for Inference (A+)
- 6.875 Advances in Computer Vision (A)
- 6.875 Crytography & Crytoanalysis (A)
- 6.820 Programming Language Analysis (A)
- 6.344 Digital Image Processing (A)

AWARD & HONORS

- David S. Y. Wong Fellowship   2012
- Kaifeng Scholarship (one of the top scholarships in Tsinghua University) 2009
- First prize, Freshman Scholarship in Tsinghua university   2008
- Ranked 2/280758 in National College Entrance Examination, Sichuan Province, China   2007
- First prize in China Mathematics Olympia Contest   2006

SKILLS

- Proficient in MATLAB, c++/MFC, java(at least 10 projects' experience for each programming language). Familiar with C#, WPF, Verilog, sql, Haskell, Coq, Ocaml.
- Solid training in theoretical computer science(discrete mathematics, algorithm design/analysis, model of computing)
- Many practices in convex/non-convex optimization, linear algebra and matrix computation, image processing.

STANDARD TESTS

- **TOEFL** 108/120 - Reading 27, Listening 28, Speaking 24, Writing 29
- **GRE** Verbal 155(69%), Quantitative 168(96%), Analytical Writing 4.5(72%)

ACADEMIC ACTIVITIES

- A Demo of Automatic Facade Parsing Toolkit for Microsoft TechFest 2012, Seattle,   Mar, 2011
- Poster and Spotlight presentation in ICCV 2011 at Barcelona, SpainNov, 2011
- Present in Microsoft Research Asia Tab Review in Beijing, China   Oct, 2011
- A Demo of Calibration for Microsoft TechFest 2011, Seattle,   Mar, 2011