

# Qihui Zhu

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## Research Interests

My primary interest is computer vision. In particular, I study mid-level representation for object recognition and 3D interpretation. I am also interested in problems related to machine learning and computer graphics.

## Education

**University of Pennsylvania**, Philadelphia, PA

Ph.D. Candidate in Computer and Information Science, September 2004 – present. GPA: 4.0/4.0

M.S.E. in Computer and Information Science, May 2006. GPA: 4.0/4.0

Advisor: Prof. Jianbo Shi

**Tsinghua University**, Beijing, China

B.S.E. in Compute Science and Technology, June 2004. GPA: 88.2/100

Advisor: Prof. Haizhou Ai

## Publications

- Qihui Zhu, Liming Wang, Yang Wu and Jianbo Shi. **Contour Context Selection for Object Detection: A Set-to-Set Contour Matching Approach**. In *European Conference on Computer Vision (ECCV) 2008*.
- Yang Wu, Qihui Zhu, Jianbo Shi and Nanning Zheng. **Saliency Based Opportunistic Search for Object Part Extraction and Labeling**. In *European Conference on Computer Vision (ECCV) 2008*.
- Qihui Zhu, Gang Song and Jianbo Shi. **Untangling Cycles for Contour Grouping**. In *IEEE International Conference on Computer Vision (ICCV) 2007 (oral presentation, acceptance rate 3.9%)*. Extended version in *CIS Technical Report MS-CIS-07-17, University of Pennsylvania, 2007*.
- Song-Hai Zhang, Qihui Zhu and Ralph R. Martin. **Propagation of Geometric Tolerance Zones in 3D**. In *Conference of Mathematics in Surfaces XII 2007*.
- Qihui Zhu and Jianbo Shi. **Shape from shading: Recognizing the Mountains through a Global View**. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2006*.
- Kilian Weinberger, Fei Sha, Qihui Zhu and Lawrence Saul. **Localization in Large Scale Sensor Networks via Semidefinite Programming and Graph Regularization**. In *Advances in Neural Information Processing Systems (NIPS) 2006*.

## Research Experience

**University of Pennsylvania**, Philadelphia, PA

Research Assistant, September 2004 – present.

Performed research on computer vision and image understanding covering the following topics:

- Perceptual organization: image segmentation and contour grouping for high level vision processes;
- Shape matching for object detection;
- 3D shape perception, parametrization and reconstruction from various image cues;
- Graph embedding and manifold learning, with applications to vision and machine learning.

Current work focuses on utilizing salient image structures such as regions and contours for shape matching, object recognition, and 3D reasoning.

**Tsinghua University**, Beijing, China

Research Assistant, May 2003 – November 2003.

Analyzed 3D geometric error propagation in compute graphics and CAD. It was a research project sponsored by National Natural Science Foundation of China (NSFC).

## Teaching Experience

- Teaching Assistant, CSE 260 Discrete Mathematics, University of Pennsylvania, Spring 2006.
- Teaching Assistant, CSE 260 Discrete Mathematics, University of Pennsylvania, Fall 2005.
- Tutor, the C Programming Language, Tsinghua University, Spring 2003.

## Honors and Awards

- Excellent Graduate of Tsinghua University, 2004.
- Bao Gang Co. Scholarship, Tsinghua University, 2003.
- 8<sup>th</sup> place in *TrendMicro*<sup>TM</sup> Programming Contest Final, 2002.
- Shunde Wu Couple Scholarship, Tsinghua University, 2001.
- Gold Medal of the 41<sup>st</sup> International Mathematical Olympiad (IMO), 2000.
- 1<sup>st</sup> place in All-Russian Mathematical Olympiad, 2000.
- Silver Medal of the 40<sup>th</sup> International Mathematical Olympiad (IMO), 1999.

## Professional Activities

- Journal reviewer, *Pattern Recognition*.
- Member of Institute of Electrical and Electronics Engineers (IEEE) and Sigma Xi.

## References

Available upon request.