

# Benjamin (Zhenyu) Yao

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## Education

- Ph.D. Candidate in Statistics** Sept. 2008.  
Department of Statistics, University of California Los Angeles (UCLA).
- M.S. in Electrical Engineering** Jul. 2007.  
Graduate University of Chinese Academy of Sciences (GUCAS), Beijing, China.
- B.S. in Electrical Engineering** Jul. 2003.  
University of Science and Technology of China (USTC), Hefei, China.

## Publication (more details please see my homepage at <http://www.stat.ucla.edu/~zyyao>)

- **Benjamin Z. Yao**, X. Yang, L. Lin, M. W. Lee and S. C. Zhu, "I2T: Image Parsing to Text Description", Proceedings of IEEE, 2010
- **B. Z. Yao**, Song-Chun Zhu, "Learning Deformable Action Templates from Cluttered Videos", ICCV'09.
- **B. Z. Yao**, X. Yang and T. F. Wu, "Image Parsing with Stochastic Grammar: The Lotus Hill Dataset and Inference Scheme", SIG-09: First International Workshop on Stochastic Image Grammars, CVPR'09 workshop.
- J. Porway, **B. Z. Yao**, S. C. Zhu, "Learning compositional models for object categories from small sample sets", Book Chapter in *Object Categorization: Computer and Human Vision Perspectives*, Cambridge University Press. 2009.
- **B. Z. Yao**, L. Wang and S. C. Zhu, "Learning a Scene Contextual Model for Tracking and Abnormality Detection", Proc. 3rd Int'l Workshop on Semantic Learning and Applications in Multimedia (SLAM'08), CVPR'08 workshop.
- **B. Z. Yao**, X. Yang and S. C. Zhu, "Introduction to a large scale general purpose ground-truth dataset: methodology, annotation tool, and benchmarks", EMMCVPR, Springer LNCS 4679, Ezhou, China, Aug 2007.

## Research Experience (more details please see my homepage at <http://www.stat.ucla.edu/~zyyao>)

**Graduate Student Researcher (GSR) at the department of statistics, UCLA.** (Sept. 2007 – Present)

**Projects:** Actions and activities recognition from video.

- **Learning animated basis models from real-world videos for action detection and recognition**
  - Model human action templates as *animated basis* (i.e. a set of Gabor and optical-flow filters at selected spatial-temporal locations), which can be learned from a set of aligned human action videos.
  - Propose a Dynamic Space-Time Warping (DSTW) algorithm for detecting human actions from videos and aligning them with *animated basis* templates.
  - Learn the *animated basis* model by iterating the above two steps in a semi-supervised learning framework.
- **Learning a scene contextual model for tracking and anomaly detection in far-field surveillance video**
  - Learn a contextual model of a far-field traffic scene by pursuing spatio-temporal relationships between targets presented in training videos. The learning process follows an information project framework.

**Intern at the Microsoft Research, Redmond, USA** (July. 2010 – Sept. 2010)

**Projects:** Actions and activities recognition from video.

- **Learning a Discriminative Mixture of Postures for Action Detection**
  - Propose a part-based mixture of postures model for actions.
  - Develop a discriminative learning method based on Latent SVM for learning mixtures of action templates from weakly supervised examples.
  - Develop a dynamic programming based inference algorithm for fast action detection from video.

**Intern at the Lotus Hill Institute of Computer Vision (LHI), Ezhou, China** (Jan. 2006 – July. 2007)

**Projects:** LHI image dataset and video surveillance projects.

- **Video surveillance project** (now [Seesoft surveillance company](#))
  - Develop an object tracking algorithm based on GMM background modeling and mean-shift tracking algorithm.
  - Co-develop the software infrastructure of the LHI video surveillance system.
  - Co-develop an object classification algorithm for recognizing the tracked objects using HoG features and SVM.
- **LHI image dataset project** (see website <http://www.imageparsing.com/>)
  - Design the data structure of the LHI dataset – a large-scale image database with ground-truth annotation.
  - Setup and maintain several public image datasets and benchmarks.

### **Programming Skills**

- Experienced with **OpenCV** and **Matlab** programming.
- Familiar with software development using C++.
- Other programming language: Python, R (statistical programming).
- Familiar with both Windows and Linux operation systems.

### **Presentations**

1. Oral presentation at the review of an ONR grants collaborated by the UCLA vision group and Object Video Inc.
2. Oral presentation at the 1st Int'l Workshop on Stochastic Image Grammars (SIG-09), CVPR'09
3. Oral presentation at the 3rd Int'l Workshop on Semantic Learning and Applications in Multimedia (SLAM-08).
4. Oral presentation at the EMMCVPR 2007.

### **Awards**

- Excellent Paper Award for Research Plan for College Student, USTC, 2003
- Third-grade Outstanding Student Scholarship,USTC,2002
- Third-grade Outstanding Student Scholarship,USTC,1999
- Second-grade Outstanding Freshman Scholarship,USTC,1998

### **Extracurricular Activities**

Photography, tennis, guitar and bicycling.