

Chunhui Gu

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EDUCATION

- **University of California at Berkeley** Aug 2006 --- Expected 2011
Ph.D. Candidate in Electrical Engineering and Computer Sciences, **GPA: 4.0/4.0**
- **California Institute of Technology** Sep 2003 --- Jun 2006
B.S. Degree, Major in Electrical Engineering and Minor in Control and Dynamical Systems, **GPA: 4.0/4.0**
- **Tsinghua University**, Beijing, China Sep 2002 --- Jul 2003
Electronic Engineering, **GPA: 95/100**

RESEARCH EXPERIENCE

- **Berkeley Vision Lab** with **Prof. J. Malik** Fall 2008
Researched and developed a unified framework for object detection, segmentation, and classification using regions. Region-based descriptors encode shape and scale information of objects naturally; they are mildly affected by background clutter. Our proposed method significantly outperforms the state of the art in the ETHZ shape database, and obtained third best classification result in the standard Caltech 101 database.
 - **Adobe Systems Inc.** with **Dr. E. Shechtman** Summer 2008
Research intern in the Creative Technologies Laboratory/Digdug Team
Developed a Computer Vision system for complex human-action detection (e.g. detecting people answering cell phones, holding phones in open palm, etc) in images and videos. The system takes advantage of combining semantically meaningful mid-level image features which are themselves compositions of low-level features for accurate detection. A prototype system was available.
 - **Berkeley Vision Lab** with **Prof. J. Malik** Spring 2008
Investigated how taxonomies of visual object categories can be automatically learned from training samples and exploited this structure to establish a hierarchical scheme for object categorization. As a result, the complex categorization task was divided up into a sequence of simpler classifications. Performance has been evaluated on Caltech 101/256 databases and the results showed the hierarchy-based categorization outperforms the linear one.
 - **Berkeley Vision Lab** with **Prof. J. Malik** Spring 2007
Revisited and analyzed the classic problem of texture classification through a novel approach. Our patch-based approach captures higher-frequency information of the original textural signals that are missing in the conventional filterbank-based approach. Evaluation on the standard texture databases (CURET and UIUCTex) showed that new approach works better.
 - **Caltech Vision Lab** with **Prof. P. Perona** 2005
Analyzed the problem of video content retrieval, specifically parsing and indexing video frames based on visual and auditory cues. Visual processing included movie shot detection, face detection and tracking, facial feature detection and recognition. Auditory processing included background noise removal, speaker feature extraction and classification. As a result, each frame of the video can be assigned a label that described meaningful objects/events in the frame, e.g. names of characters present or absent and/or speaking. Thus, a structured organization of the movie source can be achieved, which enabled efficient content-based material retrieval.
 - **Caltech Control and Dynamics Lab** with **Prof. R. Murray** Fall 2005 – Spring 2006
Undergraduate senior thesis project
Investigated the situational awareness problem in a competitive robotic game called the RoboFlag. A Monte Carlo Localization (MCL) model together with a Hospitality Map approach were applied to enhance state estimation and decision making, both aiming at improving the situational awareness. The entire project was simulated using C++ coding.
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PUBLICATION	<ul style="list-style-type: none"> • C. Gu, J. J. Lim, P. Arbelaez, and J. Malik. Recognition using Regions. In CVPR 2009, Miami.
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AWARDS AND HONORS	<ul style="list-style-type: none"> • UC Berkeley EECS Departmental Fellowship 2006-2007 • Tau Beta Pi Engineering Honor Society 2006 • Cheng Ting Hsu Undergraduate Scholarship, Caltech 2005-2006 • 1st place in the Boston Area Undergraduate Physics Competition (BAUPC) 2004 • Gold medal, 4th place in the 33rd International Physics Olympiad (IPhO) 2002 • Gold medal, 1st place in the 3rd Asian Physics Olympiad (APhO) 2002 • Silver medal in the 17th National Mathematics Olympiad (CMO) 2002
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ACTIVITIES	<ul style="list-style-type: none"> • President of the Berkeley Chinese Students and Scholars Association (BCSSA) 2008-2009 • Vice president of the Berkeley Chinese Students and Scholars Association (BCSSA) 2006-2008 • President of the Caltech Students Association (CaltechC) 2005-2006 • Teaching Assistant for the class: <i>Selected Topics in Computer Vision</i> by Prof. Pietro Perona, Caltech 2006
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SKILLS	<ul style="list-style-type: none"> • Proficient with Windows, Unix/Linux, and Mac OS and applications. Skilled in Matlab and C programming languages. Basic experience in C++. • Language: English, Mandarin(native), Shanghainese
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