

# CATHERINE LIH-LIAN WAH

CONTACT INFORMATION	UCSD/CSE EBU3b Rm. 4148 9500 Gilman Drive, Dept. 0404 La Jolla, CA 92093	<i>Phone:</i> (217) 377-5120 <i>E-mail:</i> <a href="mailto:cwah@cs.ucsd.edu">cwah@cs.ucsd.edu</a> <i>Website:</i> <a href="http://vision.ucsd.edu/~cwah">http://vision.ucsd.edu/~cwah</a>
EDUCATION	<b>University of California, San Diego (UCSD)</b> , La Jolla, CA PhD, Computer Science, expected graduation date: June 2014 C.Phil, Computer Science, June 2012 M.S., Computer Science, December 2011  <b>University of Illinois, Urbana-Champaign (UIUC)</b> , Urbana, IL B.S., Electrical Engineering with Honors, August 2008 <ul style="list-style-type: none"><li>• Chancellor's Scholar, Edmund J. James Scholar</li><li>• Minors in Computer Science and Mathematics</li></ul>	
ACADEMIC EXPERIENCE	<b>Computer Science and Engineering Department, UCSD</b> , La Jolla, CA Graduate Student Researcher 9/2008–present Computer Vision Lab, Advisor: Serge Belongie <ul style="list-style-type: none"><li>• <i>Visipedia</i>: interactive visual recognition of fine-grained categories</li><li>• <i>Parking space vacancy monitoring</i>: identification of vacant parking spaces under occlusion using stereo reconstruction</li></ul> <b>Toyota Technological Institute</b> , Chicago, IL Visiting Student/Intern 1/2014–3/2014 Host: Subhransu Maji <ul style="list-style-type: none"><li>• Leveraging multiple perceptual similarity metrics for interactive fine-grained categorization</li></ul> <b>Computer Science and Engineering Department, UCSD</b> , La Jolla, CA Teaching Assistant 9/2013–12/2013 <i>CSE 166: Image Processing</i> , Instructor: Serge Belongie  <b>Toyota Technological Institute</b> , Chicago, IL Visiting Student/Intern 2/2013–5/2013 Host: Subhransu Maji <ul style="list-style-type: none"><li>• Interactive visual recognition of fine-grained categories using similarity-based comparisons</li></ul> <b>Electronic Engineering Dept., Chinese University of Hong Kong</b> , Hong Kong Visiting Research Staff 6/2010–8/2010 Image and Video Processing Lab, Host: Xiaogang Wang <ul style="list-style-type: none"><li>• <i>Visipedia</i>: integration of part localization for visual recognition</li></ul> <b>Intel Undergraduate Research Program, UIUC</b> , Urbana, IL Intel Research Scholar 1/2005–8/2008 Image Formation and Processing Group, Advisor: Thomas Huang <ul style="list-style-type: none"><li>• <i>Hand gesture recognition</i>: investigated manifold learning methods to compactly represent natural variation found in human hands (senior thesis)</li></ul> <b>Electrical and Computer Engineering Department, UIUC</b> , Urbana, IL Teaching Assistant 8/2007–5/2008	

- *Analog Signal Processing (ECE 210)*: taught three lab sections and graded weekly assignments

**College of Engineering, UIUC, Urbana, IL**

Engineering Learning Assistant

4/2007–10/2007

- Taught 30 freshmen in introductory seminar to College of Engineering

REFEREED  
PUBLICATIONS

- C. Wah, G. Van Horn, S. Branson, S. Maji, P. Perona, S. Belongie. “Similarity Comparisons for Interactive Fine-Grained Categorization”. To appear in *Computer Vision and Pattern Recognition (CVPR)*. Columbus, OH, June 2014.
- S. Branson, G. Van Horn, C. Wah, P. Perona, S. Belongie. “The Ignorant Led by the Blind: A Hybrid Human-Machine Vision System for Fine-Grained Categorization”. *International Journal of Computer Vision (IJCV)*. February 2014.
- C. Wah, S. Belongie. “Attribute-Based Detection of Unfamiliar Classes with Humans in the Loop”. *Computer Vision and Pattern Recognition (CVPR)*. Portland, OR, June 2013.
- W. Di, C. Wah, A. Bhardwaj, R. Piramuthu, N. Sundaresan. “Style Finder: Fine-Grained Clothing Style Detection and Retrieval”. *Third IEEE International Workshop on Mobile Vision*. Portland, OR, June 2013.
- C. Wah, S. Branson, P. Perona, S. Belongie. “Multiclass Recognition and Part Localization with Humans in the Loop”. *International Conference on Computer Vision (ICCV)*. Barcelona, Spain, Nov. 2011.
- S. Branson, C. Wah, B. Babenko, F. Schroff, P. Welinder, P. Perona, S. Belongie. “Visual Recognition with Humans in the Loop”. *European Conference on Computer Vision (ECCV)*. Heraklion, Crete, Sept. 2010.

OTHER  
PUBLICATIONS/  
PRESENTATIONS

- C. Wah, S. Belongie. “Attribute-Based Detection of Unfamiliar Classes with Humans in the Loop”. *Second Workshop on Fine-Grained Visual Categorization (FGVC)*. Portland, OR, June 2013.
- C. Wah, S. Branson, P. Perona, S. Belongie. “Interactive Localization and Recognition of Fine-Grained Visual Categories”. *First Workshop on Fine-Grained Visual Categorization (FGVC)*. Colorado Springs, CO, June 2011.
- C. Wah, S. Branson, P. Welinder, P. Perona, S. Belongie. “Birds-200: A Dataset For Fine-Grained Visual Categorization”. *First Workshop on Fine-Grained Visual Categorization (FGVC)*. Colorado Springs, CO, June 2011.
- C. Wah. “Crowdsourcing and Its Applications in Computer Vision”. *UCSD CSE Research Exam*. May 2011.
- C. Wah, S. Branson, P. Welinder, P. Perona, S. Belongie. “The Caltech-UCSD Birds-200-2011 Dataset”. *Caltech Technical Report CNS-TR-2011-001*. 2011.
- P. Welinder, S. Branson, T. Mita, C. Wah, F. Schroff, S. Belongie, P. Perona. “Caltech-UCSD Birds 200”. *Caltech Technical Report CNS-TR-2010-001*. 2010.
- C. Wah, D. Lin, and T. S. Huang. “Anthropometric Human Hand Models for Tracking”. *Women in Machine Learning Workshop*, 2008.

HONORS

NSF Graduate Research Fellowship, 2010-2013  
 NSF International Research and Education in Engineering (IREE) Award, 2010  
 Powell Foundation Fellowship, UCSD, 2008  
 CRA Outstanding Undergraduate Award, Honorable Mention, 2008  
 Knight of St. Patrick, UIUC, 2008  
 Marcia Peterman Memorial Award, 2008

Senior 100 Honorary, UIUC, 2008  
Ellery B. Paine Outstanding Junior Award, 2007

PROFESSIONAL  
EXPERIENCE

- Google Inc.**, Venice, Los Angeles, CA  
Software Engineering Intern, Visual Search 6/2013–9/2013
- **Attribute-based classification** of product images
- eBay Inc.**, San Jose, CA  
Research Intern, eBay Research Lab 6/2012–9/2012
- **Visual recognition and retrieval** of fine-grained clothing types and styles
- Amazon A9.com**, Palo Alto, CA  
Software Development Intern, Visual Search 6/2011–9/2011
- Developed algorithm/prototype for **product search of visually similar items** using cameraphone image queries and aided by user input
  - Co-inventor of patent “*Drawn Gesture Based Search to Identify Item*” (filed)
- Intel Corporation**, Hillsboro, OR  
Technical Undergraduate Intern, Compatibility and Validation 5/2006–8/2006
- Evaluated digital media adapter software on Intel Viiv platforms
- Intel Corporation**, Hillsboro, OR  
Technical Undergraduate Intern, Compatibility and Validation 6/2005–8/2005
- Evaluated third-party drivers on pre-beta builds of Windows Vista OS
  - Received a KUDOS Award

SERVICE

- Program Committee Member, *2nd Fine-Grained Visual Categorization (FGVC) Workshop* 2013  
Invited Reviewer: ICCV 2013, *IJCV Special Issue on Active and Interactive Methods in Computer Vision*  
Women in Computing Member, UCSD, 2008–present  
Eta Kappa Nu ECE Honor Society, UIUC, 2005–2007
- *President*, August 2006–May 2007
- Women in Electrical and Computer Engineering, UIUC, 2005–2006
- *President*, August 2005–May 2006
- ECE Student Advisory Committee, UIUC, 2005–2008
- *Chair*, August 2007–May 2008
- IEEE Student Member, 2004–present

OTHER

U.S. Citizen