

Weina Ge

CONTACT INFORMATION	GE Global Research One Research Circle Niskayuna, NY 12309	+1-(814)-441-9357 ge@cse.psu.edu http://www.cse.psu.edu/~ge
EDUCATION	The Pennsylvania State University , University Park, PA Ph.D. in Computer Science and Engineering Thesis: “Bayesian Analysis of Small Groups in Crowds” GPA: 3.92/4.0 Concurrent Degree: Master of Applied Statistics	August 2005 - August 2010
	Zhejiang University , Hangzhou, China B.E. in Computer Science and Technology Thesis: “Real-time Implementation of Full-frame Video Stabilization” GPA: 3.91/4.0	September 2001 - June 2005
RESEARCH INTEREST	Computer vision techniques with applications to object detection and tracking Probabilistic models and efficient statistical inference methods for multimedia data analysis	
RESEARCH EXPERIENCE	GE Global Research , Niskayuna, NY Computer Scientist	August 2010 - present
	<ul style="list-style-type: none">• Developing event recognition algorithms for video surveillance applications• Developing medical image processing algorithms for ultrasound images	
	Laboratory for Perception, Action and Cognition , University Park, PA Research Assistant, supervised by Dr. Robert T. Collins	September 2007 - July 2010
	<ul style="list-style-type: none">• Proposed a general stochastic optimization framework to detect and track people in crowds for automated analysis of pedestrian social behavior and crowd dynamics, funded by NSF• Developed a salient region detector for image matching and object shape description	
	GE Global Research , Niskayuna, NY Intern, hosted by Dr. Peter Tu and Dr. Ting Yu	Summer 2009
	<ul style="list-style-type: none">• Developed multi-target tracking algorithms to improve the performance of a multi-camera tracking system	
	IDIAP Research Institute , Martigny, Switzerland Intern, hosted by Dr. Daniel Gatica-Perez and Dr. Jean-Marc Odobez	Summer 2007
	<ul style="list-style-type: none">• Investigated shape-based image features for object recognition, funded by the AMIDA (Augmented Multiparty Interaction with Distance Access) training program	
	Intelligent Information Systems Research Lab , University Park, PA Research Assistant, supervised by Dr. James Z. Wang	August 2005 - May 2007
	<ul style="list-style-type: none">• Constructed statistical models for image annotation and search on large-scale image databases, funded by NSF• Applied image segmentation and machine learning techniques for computational models that aid archaeological analysis• Developed digital techniques to understand paintings and the methods of great masters, funded by NSF	

Microsoft Research Asia, Beijing, China

Intern, hosted by Dr. Yasuyuki Matsushita and Dr. Eyal Ofek January 2005 - June 2005

- Research on image registration and motion inpainting for full-frame video stabilization

TEACHING Teaching Assistant The Pennsylvania State University Fall 2008
EXPERIENCE Teaching assistant for a new graduate level course, CSE583/EE552 Pattern Recognition. Taught one review session in an interactive lecture format, drafted syllabus, drafted and graded homeworks, projects, and quizzes, held office hours.

PUBLICATIONS Journals

1. [Weina Ge](#), Robert T. Collins and R. Barry Ruback, “[Vision-based Analysis of Small Groups in Pedestrian Crowds](#),” *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, accepted to appear, 2011.
2. R. Barry Ruback, Robert T. Collins, Sarah Koon-Magnin, [Weina Ge](#), Luke Bonkiewicz and Clifford E. Lutz, “[People Transitioning Across Places: A Multimethod Investigation of How People Go to Football Games](#),” *Environment and Behavior*, accepted to appear, 2011.
3. [Weina Ge](#) and Robert T. Collins, “[Crowd Density Analysis with Marked Point Processings \[Applications Corner\]](#),” *Signal Processing Magazine*, Vol 27, Issue 5, pp. 107-111, 2010.
4. Ritendra Datta, [Weina Ge](#), Jia Li, and James Z. Wang, “[Toward Bridging the Annotation-Retrieval Gap in Image Search](#),” *IEEE Multimedia*, vol.14, no.3, pp. 24-35, 2007.
5. Yasuyuki Matsushita, Eyal Ofek, [Weina Ge](#), Xiaoou Tang and Heung-Yeung Shum, “[Full-frame Video Stabilization with Motion Inpainting](#),” *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, vol. 28, no. 7, pp. 1150-1163, 2006.

Conference Proceedings

1. Ming-Ching Chang, Nils Krahnstoever, and [Weina Ge](#), “[Probabilistic group-level motion analysis and scenario recognition](#),” to appear at the *International Conference on Computer Vision (ICCV)*, Barcelona, Spain, 2011.
2. Nils Krahnstoever, Ming-Ching Chang, and [Weina Ge](#), “[Gaze and body pose estimation from a distance](#),” *IEEE International Conference on Advanced Video and Signal-Based Surveillance (AVSS)*, Klagenfurt, Austria, 2011. (Best Paper Runner-Up)
3. James Z. Wang, [Weina Ge](#), Dean Snow, Prasenjit Mitra and C. Lee Giles, “[Determining the Sexual Identities of Prehistoric Cave Artists using Digitized Handprints – A Machine Learning Approach](#),” *Proc. ACM Multimedia Conference (MM)*, pp. 1325-1332, Florence, Italy, 2010.
4. [Weina Ge](#) and Robert T. Collins, “[Crowd Analysis with a Multiview Sampler](#),” *Proc. European Conference on Computer Vision (ECCV)*, pp. 324-337, Crete, Greece, 2010.
5. Aditi Rathi, Michael DeBole, [Weina Ge](#), Robert T. Collins, Narayanan Vijaykrishnan, “[A GPU Based Implementation of Center-Surround Distribution Distance for Feature Extraction and Matching](#),” *Proc. Design, Automation and Test in Europe (DATE)*, Dresden, Germany, 2010.
6. [Weina Ge](#) and Robert T. Collins, “[Evaluation of Sampling-based Pedestrian Detection for Crowd Counting](#),” *Proc. IEEE International Workshop on Performance Evaluation of Tracking and Surveillance (Winter-PETS)*, Salt Lake City, UT, 2009.

7. [Weina Ge](#), Robert T. Collins, and Barry Ruback, “Automatically Detecting the Small Group Structure of a Crowd,” *Proc. IEEE Workshop on Applications of Computer Vision (WACV)*, Salt Lake City, UT, 2009.
8. [Weina Ge](#) and Robert T. Collins, “Marked Point Processes for Crowd Counting,” *Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 2913-2920, Miami, FL, 2009.
9. Robert T. Collins and [Weina Ge](#), “CSDD Features: Center-Surround Distribution Distance for Feature Extraction and Matching,” *Proc. European Conference on Computer Vision (ECCV)*, pp. 140-153, Marseille, France, 2008.
10. [Weina Ge](#) and Robert T. Collins, “Multi-target Data Association by Tracklets with Unsupervised Parameter Estimation,” *Proc. British Machine Vision Conference (BMVC)*, pp. 935-944, Leeds, UK, 2008.
11. Ritendra Datta, [Weina Ge](#), Jia Li, and James Z. Wang, “Toward Bridging the Annotation-Retrieval Gap in Image Search by a Generative Modeling Approach,” *Proc. ACM Multimedia Conference (MM)*, pp. 977-986, Santa Barbara, CA, 2006.

COMPUTER SKILLS Windows, Unix/Linux, C/C++, MATLAB, Perl, Python, PHP, OpenGL, Java,

HONORS & AWARDS	Best Paper Runner-Up in AVSS’11	2011
	NSF Travel Grant for IEEE CVPR Doctoral Spotlight	2009
	Student Travel Award for ACM Multimedia	2006
	Best Thesis Award, Zhejiang University, China	2005
	9 th place in ACM/ICPC Asia Region Preliminary Contest, Beijing, China	2004
	Outstanding Student Scholarship, Zhejiang University, China	2001 - 2003
	Dean’s List of Distinguished Students, Zhejiang University, China	2001 - 2004

SERVICES & PROFESSIONAL ACTIVITIES	Mentor	Peer Mentor Program	Penn State	2009
	Attendee	CRA-W Grad Cohort Workshop	San Francisco, CA	2006 & 2007

Conference Reviewer
 IEEE Conf. on Computer Vision and Pattern Recognition, European Conf. on Computer Vision, ACM Multimedia Conf.

Journal Reviewer
 IEEE Trans. on Pattern Analysis and Machine Intelligence, Journal of Machine Learning Research, Information Systems, IEEE Trans. on Image Processing, IEEE Trans. on Multimedia, Int. Journal of Advanced Media and Communication, Machine Vision and Applications, IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Medical Imaging, Image and Vision Computing, IEEE Signal Processing Letters, Int. Journal of Advanced Media and Communication.