

Rachel A. Albert

CONTACT INFORMATION	PhD Student Vision Science Program University of California, Berkeley 523 Soda Hall Berkeley, CA 94720-1776 USA	<i>Mobile:</i> +1-323-334-7467 <i>E-mail:</i> rachelalbert@berkeley.edu <i>WWW:</i> www.rachelalbert.com
RESEARCH INTERESTS	Computer graphics and human perception: computational photography and image processing, human perception of textures and scenes, realism in computer generated scenes, augmented and virtual reality, novel stereoscopic displays	
EDUCATION	University of California, Berkeley , Berkeley, CA PhD. in Vision Science , expected completion May 2017 Specialization in binocular vision (emphasis on stereopsis and 3D displays) M.S. in Computer Science , expected completion May 2016 Specialization in computer graphics (emphasis on image processing and computer vision) The College of William & Mary , Williamsburg, VA B.S. in Psychology , May 2011 B.S. in Biology , May 2011	
SELECT CONFERENCE POSTERS & PRESENTATIONS	[1] Rahul Narain, Rachel A. Albert, Abdullah Bulbul, Gregory J. Ward, Martin S. Banks, and James F. O'Brien. "Optimal Presentation of Imagery with Focus Cues on Multi-Plane Displays". <i>ACM Transactions on Graphics</i> , 34(4):59:1-12, August 2015. To be presented at SIGGRAPH 2015, Los Angeles, CA. [2] Rachel A. Albert, Abdullah Bulbul, Rahul Narain, James F. O'Brien, Martin S. Banks. Can 3D Shape be Estimated from Focus Cues Alone?. Poster session presented at: <i>Annual Meeting of the Vision Sciences Society</i> , May 19, 2014; St. Pete Beach, FL. [3] Marina Zannoli, Rachel A. Albert, Abdullah Bulbul, Rahul Narain, James F. O'Brien, Martin S. Banks. Correct blur and accommodation information is a reliable cue to depth ordering. Poster session presented at: <i>Annual Meeting of the Vision Sciences Society</i> , May 17, 2014; St. Pete Beach, FL. [4] Martin S. Banks, Abdullah Bulbul, Rachel A. Albert, Rahul Narain, James F. O'Brien, Gregory Ward. The Perception of Surface Material from Disparity and Focus Cues. Talk presented at: <i>Annual Meeting of the Vision Sciences Society</i> , May 21, 2014; St. Pete Beach, FL.	
RESEARCH EXPERIENCE	<i>Mobile texture and reflectance capture</i> Exploring methods for easy capture and synthesis of real-world textures for artistic applications, including adding realism to computer generated scenes. <i>Triangulation cues and the perception of glossy surfaces</i> Design and implementation of psychophysical experiments to determine the role of triangulation depth cues (stereopsis, motion parallax, and focus) in the perception of glossy surfaces, with an emphasis on the influence of incorrect and conflicting triangulation cues. <i>Optimized blending of light layers in multi-plane displays</i> Design and implementation psychophysical experiments to test the efficacy of a new type of layer blending in volumetric multi-plane displays. Our new method allows accurate presentation of occlusions and specular reflections.	Current Project Fall 2013 to Summer 2014 Summer 2013 to Summer 2014

	<i>Stereopsis recovery in amblyopia</i>	Spring/Summer 2012
	Management of a large-scale study on the effects of video game play in patients with amblyopia (lazy eye). Duties included subject recruitment and payment, supervision of a team of undergraduate research assistants, and collaboration with researchers at Rochester University.	
TEACHING EXPERIENCE	University of California, Berkeley , Berkeley, CA	
	Computational Photography and Image Processing <i>Graduate Student Instructor (GSI)</i>	Fall 2015
	Biophysics Module: Introduction to Python <i>Co-Instructor</i>	September 2014
	Vision Science 84: Introduction to Vision Science <i>Guest Lecturer</i>	October 2014 & 2013
	Vision Science 217: Oculomotor Functions and Neurology Vision Science 219: Binocular Vision and Space Perception <i>Graduate Student Instructor (GSI)</i>	Spring 2014 & 2013
WORK EXPERIENCE	NVIDIA - New Experiences Group <i>Summer Intern</i>	May 2016 to September 2016
	Created and tested novel methods for foveated rendering in close collaboration with a team of researchers.	
	Adobe - Creative Technologies Lab <i>Summer Intern</i>	May 2015 to July 2015
	Worked closely with a research mentor to develop cutting-edge technologies for publication and application in Adobe products.	
	Government Accountability Office - Learning Center <i>Government contractor</i>	August 2007 to July 2008
	Developed and maintained training curriculum for hundreds of courses offered to government auditors. Managed a database of these courses and their materials, designed and distributed advertisements, scheduled and prepared classrooms, and trained new staff members.	
SOFTWARE EXPERTISE	Programming Languages	
	<ul style="list-style-type: none"> • Proficient: Python, MATLAB, Git • Familiar: C++, HTML/CSS 	
	Python skill set	
	<ul style="list-style-type: none"> • Image processing and manipulation • Stimulus presentation, data processing, statistics, visualization of data • Libraries: numpy, scipy, pandas, matplotlib, scikit-image, ipython, ipython notebook 	
	MATLAB skill set	
	<ul style="list-style-type: none"> • Stimulus presentation, linear algebra, Fourier transforms, statistics, visualization, image processing • Toolboxes: psychtoolbox, computer vision, statistics 	
	Desktop Software	
	<ul style="list-style-type: none"> • Microsoft Office, LibreOffice, Google Docs, L^AT_EX • Adobe Photoshop, Adobe Illustrator, Adobe InDesign, GIMP 	