# Jongmin Baek (Ph. D.)

Contact Information	Dropbox, Inc. 185 Berry St. San Francisco, CA 94107, USA	$408.642.9165~{ m (Cell)}\ { m jbaek@cs.stanford.edu}\ { m cs.stanford.edu/people/jbaek}$
INTERESTS	Computational photography, image filtering, low- and medium-level computer vision, signal processing, computational optics.	
Education	Stanford University, Stanford, CA USA	
	Ph.D. in Computer Science $(2008 - 2013)$	
	<ul> <li>Thesis title: WYSIWYG Computational Photography via Viewfinder Editing</li> <li>Adviser: Professor Marc Levoy</li> </ul>	
	M.S. in Computer Science $(2008 - 2011; \text{ GPA } 4.3/4.0)$	
	Massachusetts Institute of Technology, Cambridge, MA USA	
	<ul> <li>M.Eng. in Electrical Engineering and Computer Science (2008)</li> <li>Thesis title: <i>Multi-channel Coded-aperture Photography</i></li> <li>Adviser: Professor Frédo Durand</li> </ul>	
	<ul> <li>B.S. in Computer Science and Engineering (2004 - 2008; GPA 5.0/5.0)</li> <li>Adviser: D. Scott Cyphers</li> </ul>	
	<ul> <li>B.S. in Theoretical Mathematics (2004 – 2008; GPA 5.0/5.0)</li> <li>Adviser: Professor Tomasz Mrowka</li> </ul>	
A CCEPTED PUBLICATIONS	Baek, J., Pająk, D., Kim, K., Pulli, K. and Levoy, M. WYSIWYG Computational Photography via Viewfinder Editing. ACM SIGGRAPH Asia. 2013.	
	Baek, J., Adams, A. B. and Dolson, J. Lattice-based High-Dimensional Gaussian Fil- tering and the Permutohedral Lattice. <i>Journal of Mathematical Imaging and Vision</i> . 2013.	
	Baek, J., Jacobs, D. E. and Levoy, M. Accelerating Spatially Varying Gaussian Filters. ACM SIGGRAPH Asia. 2010.	
	<ul> <li>Adams, A. B., Talvala, E., Park, S. H., Jacobs, D. E., Ajdin, B., Gelfand, N., Dolson, J.,</li> <li>Vaquero, D., Baek, J., Tico, M., Lensch, H. P. A., Matusik, W., Pulli, K., Horowitz,</li> <li>M. and Levoy, M. The Frankencamera: an Experimental Platform for Computational</li> <li>Photography. ACM SIGGRAPH. 2010.</li> </ul>	
	Dolson, J., Baek, J., Plagemann, C. and Thrun, S. Upsampling Range Data in Dynamic Environments. <i>IEEE Computer Vision and Pattern Recognition</i> . 2010.	
	Baek, J. Transfer Efficiency and Depth Invariance in Computational Cameras. <i>IEEE International Conference in Computational Photography.</i> 2010.	
	Adams, A. B., Baek, J. and Davis, M. A. Fast High-Dimensional Filtering using the Permutohedral Lattice. <i>Eurographics</i> . 2010.	

Reports	Jacobs, D. E., Baek, J. and Levoy, M. Focal Stack Compositing for Depth of Field Control. Tech. report CSTR-2012-01, Stanford.	
	Karpenko, A., Jacobs, D. E., Baek, J. and Levoy, M. Digital Video Stabilization and Rolling Shutter Correction using Gyroscopes. Tech. report CSTR 2011-03, Stanford.	
DISSERTATIONS	Baek, J. WYSIWYG Computational Photography via Viewfinder Editing. Doctor of Philosophy thesis, Stanford, 2013.	
	Baek, J. Multi-channel Coded-aperture Photography. Master of Engineering thesis, MIT, 2008.	
INVITED TALKS	WYSIWYG Computational Photography via Viewfinder Editing. GPU Technology Conference. Santa Clara, CA USA, 2014.	
TEACHIN G Experience	Stanford University, Stanford, CA USA	
	Teaching Fellow (Lecturer) Winter 2012	
	<ul> <li>CS478: Computational Photography (Winter 2011-12)</li> <li>Responsible for preparing and delivering lectures and assignments.</li> <li>Responsible for advising students and supporting development environments.</li> </ul>	
	Teaching Assistant Fall 2009—	
	<ul> <li>CS448a: Computational Photography (Winter 2009-10)</li> <li>CS148: Introduction to Computer Graphics and Imaging (Fall 2009)</li> </ul>	
	Massachusetts Institute of Technology, Cambridge, MA USA	
	Teaching Assistant Spring 2008	
	<ul> <li>6.005 Elements of Software Construction (Spring 2008)</li> <li>Responsible for writing and grading projects, and developing course materials.</li> <li>Rated 6.8/7.0 by the departmental review conducted by students.</li> </ul>	
WORK Experience	Dropbox, Inc. (Current), San Francisco, CA USA	
	Software Engineer 2014–	
	NVIDIA Research, Santa Clara, CA USA	
	Summer intern in Mobile Visual Computing (MVC) Summer 2012, 2013	
	<ul> <li>Collaborated with the Mobile Visual Computing (MVO)</li> <li>Collaborated with the Mobile Visual Computing group and led the development of algorithms and interfaces for editing on a live viewfinder of a mobile camera. See above sections on education and publications. (C++, Assembly, Matlab)</li> </ul>	
	Google, Inc., Mountain View, CA USA	
	Summer intern in Site Reliability Engineering (SRE) Summer 2010	
	$\bullet$ Analyzed the search indexing pipeline to identify latencies in various stages, processing large datasets with map-reduce pattern. (C++)	

# Palo Alto Research Center, Palo Alto, CA USA

Summer intern in Intelligent Systems Lab (ISL)

• Developed and implemented a generic interface and framework for training binary classifiers, to be utilized in other concurrent projects in the lab; implemented several computer-vision algorithms from the current literature and conducted comparison studies. (C++)

# The Media Lab, MIT, Cambridge, MA USA

Undergraduate research in Sociable Media Group Fall 2006—Spring 2007

• Assisted in development of RadioActive, an audiobased forum for smart-phone users, with emphasis on visualization features. (Java)

### Computer Science & Artificial Intelligence Lab, MIT, Cambridge, MA USA

Undergraduate research in Software Design Group

• Developed a stand-alone visualizer module for the new release of Alloy, a firstorder-logic model finder. (Java)

# Department of Mathematics, MIT, Cambridge, MA USA

Undergraduate research in applied mathematics

• Pursued a geometric approach to Erdös-type distance problems in discrete geometry that have known functional-analytic solutions.

Fujitsu Technology Solutions, Sunnyvale, CA USA Formerly Fujitsu-Siemens Computers.

Summer engineering intern

• Wrote a configurable stub to simulate deployment of a server cluster management software, which resulted in savings of thousands of dollars and several weeks in development cycle. (C++, Perl)

# RECOGNITIONS

- Recipient of Lucent Technology Fellowship (Stanford Graduate Fellowship), 2010.
- Grand prize, CS348B Rendering Competition (joint work with David E. Jacobs and Myers A. Davis). Featured in Physically Based Rendering, 2nd ed.
- Finalist, CS248 Video Game Competition.
- National Science Foundation Graduate Research Fellowship: Honorable Mention (2009)
- William Lowell Putnam Mathematical Competition: Honorable Mention (2005)
- USA Mathematical Olympiad: Winner (2004), Honorable Mention (2002, 2003)

Summer 2007

Summer 2006

Summer 2006

Summer 2005