

EDUCATION

PhD, December 2008, Computer Science, Northwestern University, Evanston IL. Thesis title: “Light Field Modulation for Enhanced Image Capture and Projection”; advisor Prof. Jack Tumblin.

MS, July 2004, Computer Science, Northwestern University, Evanston IL. GPA 4.0.

BE, 2001, Instrumentation & Control Engineering, Netaji Subhas Institute of Technology, Delhi University, New Delhi, India. Department Rank 2.

PROFESSIONAL EXPERIENCE

July 2008 - present: **Postdoctoral Associate, Camera Culture group, Media Lab, MIT**. Working under Prof. Ramesh Raskar in the area of computational photography.

September 2002 - June 2008: **Research Assistant, Computer Graphics group, Northwestern University**. Worked under Prof. Jack Tumblin in the areas of computational photography, image based modeling and rendering, and image relighting.

June 2006 - January 2007: **Intern, Mitsubishi Electric Research Labs (MERL)**. Worked under Dr. Ramesh Raskar on several computational photography projects.

June 2001 - August 2002: **Associate Software Engineer, Volume Manager group, Veritas Software**. Worked on a platform independent kernel module API for device discovery.

December 2000 - May 2001: **Intern, Game Engine group, Escosoft Interactive**. Worked on 3D game engine design and development.

June 2000 - August 2000: **Intern, Indira Gandhi National Center for the Arts**. Designed and implemented a rendering engine for a virtual art gallery.

PUBLICATIONS

Vitor Pamplona, Ankit Mohan, Manuel Oliveira, Ramesh Raskar, *NETRA: Interactive Display for Estimating Refractive Errors and Focal Range*, in proceedings of ACM SIGGRAPH 2010 (ACM Transactions on Graphics 29, 3).

Shinsaku Hiura, Ankit Mohan, Ramesh Raskar, *Krill-eye : Superposition Compound Eye for Wide-Angle Imaging via GRIN Lenses*, in proceedings of OMNIVIS 2009.

Ankit Mohan, Grace Woo, Shinsaku Hiura, Quinn Smithwick, Ramesh Raskar, *Bokode: Imperceptible Visual Tags for Camera-Based Interaction from a Distance*, in proceedings of ACM SIGGRAPH 2009 (ACM Transactions on Graphics 28, 3).

Ankit Mohan, Douglas Lanman, Shinsaku Hiura, Ramesh Raskar, *Image Destabilization: Programmable Defocus using Lens and Sensor Motion*, in proceedings of IEEE International Conference on Computational Photography (ICCP) 2009.

Ankit Mohan, Xiang Huang, Ramesh Raskar, Jack Tumblin, *Sensing Increased Image Resolution Using Aperture Masks*, in proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2008.

Ashok Veeraraghavan, Amit Agrawal, Ramesh Raskar, Ankit Mohan and Jack Tumblin, *Non-refractive modulators for encoding and capturing scene appearance and depth*, in proceedings of IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2008.

Ankit Mohan, Ramesh Raskar, Jack Tumblin, *Agile Spectrum Imaging: Programmable Wavelength Modulation for Cameras and Projectors*, in proceedings of Eurographics 2008 (Computer Graphics Forum 27, 2).

Xiang Huang, Ankit Mohan, Jack Tumblin, *Deep Shadows in a Shallow Box*, in proceedings of Electronic Imaging 2008 (SPIE Vol. 6810).

Ashok Veeraraghavan, Amit Agrawal, Ramesh Raskar, Ankit Mohan and Jack Tumblin, *Dappled Photography: Mask Enhanced Cameras for Heterodyned Light Fields and Coded Aperture Refocusing*, in proceedings of ACM SIGGRAPH 2007 (ACM Transactions on Graphics 26, 3).

Ankit Mohan, Reynold Bailey, Jonathan Waite, Jack Tumblin, Cindy Grimm, Bobby Bodenheimer, *Tabletop Computed Lighting for Practical Digital Photography*, in IEEE Transactions on Visualization and Computer Graphics 13, 4.

Ankit Mohan, Prasun Choudhury, Jack Tumblin, *Editing Soft Shadows in a Digital Photograph*, in IEEE Computer Graphics and Applications special issue on Computational Photography, March/April 2007.

Holger Winnemöeller, Ankit Mohan, Jack Tumblin, Bruce Gooch, *Light Waving: Estimating Light Positions From Photographs Alone*, in proceedings of Eurographics 2005 (Computer Graphics Forum 24, 3).

Ankit Mohan, Jack Tumblin, Bobby Bodenheimer, Cindy Grimm, Reynold Bailey, *Table-top Computed Lighting for Practical Digital Photography*, in the proceedings of Eurographics Symposium on Rendering (EGSR) 2005.

SHORT PAPERS, POSTERS, TECH REPORTS

Grace Woo, Ankit Mohan, Ramesh Raskar, Dina Katabi, *Simple LCD Transmitter Camera Receiver Data Link*, MIT CSAIL Technical Report 2009.

Chi Yin Cheung, Ankit Mohan, Jack Tumblin, *Revealing Pentimenti Through Raking Angle Photography*, short paper at Eurographics 2008.

Ashok Veeraraghavan, Ankit Mohan, Ramesh Raskar, Amit Agrawal, Jack Tumblin, *A Low-Cost Test Bed for Light-Field Capture Experiments*, poster at ACM SIGGRAPH 2007.

Ramesh Raskar, Jack Tumblin, Ankit Mohan, Amit Agrawal, Yuanzen Li, *Computational Photography*, Eurographics STAR report 2006.

Ankit Mohan, Jack Tumblin, Bobby Bodenheimer, Cindy Grimm, Reynold Bailey, *Table-top Computed Lighting for Practical Digital Photography*, technical sketch at ACM SIGGRAPH 2005.

Holger Winnemöeller, Ankit Mohan, Jack Tumblin, Bruce Gooch, *Light Waving: Estimating Light Positions From Photographs Alone*, technical sketch at ACM SIGGRAPH 2005.

TALKS

Computational Photography for User Interaction, June 2010, invited talk at Microsoft Research, Cambridge, UK.

Recent Advances in Auto-ID Technologies, April 2010, invited talk at RFID Journal LIVE 2010, Orlando, FL.

Bokode: Imperceptible Visual Tags for Camera-Based Interaction from a Distance, August 2009, at ACM SIGGRAPH 2009, New Orleans, LA.

Bokode: Imperceptible Visual Tags for Camera-Based Interaction from a Distance, May 2009, invited talk at Northwestern University, Evanston, IL.

4-D Capture and 6-D Display, March 2009, invited talk at Photons, Neurons and Bits: Holography for the 21st Century, forum at MIT Museum, 2009, Cambridge, MA.

Image Destabilization: Programmable Defocus using Lens and Sensor Motion, April 2009, at IEEE ICCP 2009, San Francisco, CA.

Agile Spectrum Imaging: Programmable Wavelength Modulation for Cameras and Projectors, at Eurographics 2008, Crete, Greece.

Light Waving: Estimating Light Positions From Photographs Alone, at Eurographics 2005, Dublin, Ireland.

Table-top Computed Lighting for Practical Digital Photography, at EGSR 2005, Konstanz, Germany.

TEACHING

Coded Computational Imaging, Computer Vision and Pattern Recognition (CVPR) 2010 tutorial, co-taught.

MAS 532: Future of Imaging, MIT Media Lab, Spring 2010, co-taught.

Optics for computational photography, IEEE International Conference on Computational Photography (ICCP) 2010, invited tutorial.

Teaching Assistant, EECS department, Northwestern University, several graduate and undergraduate courses.

PATENTS

Methods and Apparatus for Measuring Refractive Errors and Focal Range of the Human Eye - USPTO patent pending.

Bokode: Imperceptible Visual Tags for Camera-Based Interaction from a Distance - USPTO patent pending.

Image Destabilization: Programmable Defocus using Lens and Sensor Motion - USPTO patent pending.

Agile Spectrum Imaging Apparatus and Method - USPTO patent pending.

AWARDS

Won the *IDEAS Award* sponsored by the Lemelson-MIT Program for deploying PerfectSight in Mwandama, Malawi.

Bokode chosen as a *highlight paper* at the SIGGRAPH 2009 conference.

Won several ACM/IEEE sponsored programming contests.

Awarded Excellence in Academics for excellent academic performance in high school.

Academic Prefect of the school and Full Fellowship in high school.

TECHNICAL SKILLS

Digital Imaging: Computational photography, light-field capture, modulation, and display, coded photography, novel camera optics, image based relighting, image synthesis, image relighting.

Programming Languages/Libraries: C, C++, Matlab, Python, OpenGL, OpenCV, Scheme, Lisp, AMPL.

Embedded platforms: Arduino, Parallax Propeller.

PERSONAL INFORMATION

Indian Citizen; J1 visa.

Amateur photographer and film camera collector.

Enthusiastic about outdoor sports; long distance running and mountaineering.