Soonmin Bae

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EDUCATION

Massachusetts Institute of Technology, Cambridge, MA   2003 – 2009

Ph.D., Electrical Engineering and Computer Science   August 2009

Thesis: *Analysis and Transfer of Photographic Viewpoint and Appearance*. Presents two contributions that transfer photographic viewpoint and appearance using model photographs and one contribution that magnifies existing defocus given a single photo.

M.S., Electrical Engineering and Computer Science   June 2005
Advisor: Frédo Durand

Korea Advanced Institute of Science and Technology, Daejeon, Korea   1998 – 2003

B.S., Major: Computer Science; Minors: Applied Math. and Business   February 2003

Simon Fraser University, Vancouver, BC, Canada   September 2000 – May 2001

An exchange student

RESEARCH EXPERIENCE

Boston College, Boston, MA   August 2009 – Present

Postdoctoral researcher in the Computer Science Department, advised by Prof. Hao Jiang. Developing video enhancement technologies.

Massachusetts Institute of Technology, Cambridge, MA   June 2003 – August 2009

Research assistant in the Computer Graphics Group, advised by Prof. Frédo Durand of the Computer Science and Artificial Intelligence Laboratory. Developed three projects in computational photography, including example-based photo editing, interactive camera pose estimation for rephotography, and synthetic defocus magnification.

Adobe Systems, Fremont, WA   June – August 2007

Research Intern in the Graphics Research Group led by David Salesin.

INRIA Rhône-Alpes, Grenoble, France   June –July 2006

Visiting graduate student researcher in the ARTIS, led by François Sillion.

Korea Advanced Institute of Science and Technology, Daejeon, Korea   Fall 2002

Undergraduate student researcher in the Artificial Intelligence lab led by Professor Hyun Seung Yang. Developed a robot with human-like communication and visual expression of emotion.

Korea Advanced Institute of Science and Technology, Daejeon, Korea   Summer 1999

Undergraduate student researcher in a micro-robot design project to learn more about computer vision. Developed an improved vision control system for micro-robots.

PUBLICATIONS

Journal Publications

[8] **Soonmin Bae,** Aseem Agarwala, and Frédo Durand. Computational Re-Photography. *ACM Transactions on Graphics*, conditionally accepted.

[7] **Soonmin Bae** and Frédo Durand. Defocus Magnification. *Computer Graphics Forum (Proceedings of Eurographics 2007)*

[6] **Soonmin Bae**, Sylvain Paris, and Frédo Durand. Two-scale Tone Management for Photographic Look. *ACM Transactions on Graphics (Proceedings of SIGGRAPH 2006)*

Conference and Workshop Proceedings

[5] Peter Cho, **Soonmin Bae**, and Frédo Durand. Image-based querying of urban knowledge databases. *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series,* May 2009.

[4] **Soonmin Bae** and Frédo Durand. Statistical Analysis and Transfer of Pictorial Styles. *Proceedings of MIT Student Oxygen Workshop,* September 2004.

Thesis

[3] **Soonmin Bae**. *Analysis and Transfer of Photographic Viewpoint and Appearance.* PhD's thesis, Massachusetts Institute of Technology, Cambridge, MA, August 2009.

[2] **Soonmin Bae**. *Statistical Analysis and Transfer of Coarse-Grain Pictorial Style.* Master's thesis, Massachusetts Institute of Technology, Cambridge, MA, June 2005.

Poster

[1] **Soonmin Bae**, Sylvain Paris, and Frédo Durand. A Computational Darkroom for Black-and-white Photography. Poster at *the Symposium on Computational Photography and Video*, Cambridge, MA, May 2005.

AWARDS	The Samsung Lee Kun Hee Scholarship Foundation	2003-2007
	Full National Grantee	1998-2003

TEACHING EXPERIENCE

Boston College, Boston, MA   Fall 2009

Guest lecturer in CS 074 The Digital World, taught by Prof. Robert Muller, and in CS 390 Image and Video Understanding, taught by Prof. Hao Jiang in the Computer Science Department at Boston College.

Massachusetts Institute of Technology, Cambridge, MA   Spring 2009

Teaching assistant in 6.815/6.865 Advanced Computational Photography, taught by Prof. Frédo Durand in the Dept. of Electrical Engineering and Computer Science at MIT, leading a tutorial section, assisting the professor in writing homework sets, and holding weekly office hours.

PRESENTATIONS

Computational Re-photography
Boston College, Chestnut Hill, MA, March 2009

Defocus Magnification
Eurographics 2007, Prague, Czech Republic, September 2007

Two-scale Tone Management for Photographic Look
SIGGRAPH 2006, Boston, MA, August 2006
KAIST, Daejeon, Korea, November 2006

INRIA Rhône-Alpes, Grenoble, France, July 2006

Statistical Analysis and Transfer of Coarse-Grain Pictorial Style
MIT EECS Masterworks Symposium, April 2006

Statistical Analysis and Transfer of Pictorial Styles
2004 MIT Student Oxygen Workshop, Ashland, MA, September 2004

PATENTS

Soonmin Bae, Frédo Durand and Sylvain Paris, "System and Method for Providing Two-Scale Tone Management of an Image," US20080226168, 2008.
Soonmin Bae, Frédo Durand and Sylvain Paris, "System and Method for Providing Gradient Preservation for Image Processing," US20080226190, 2008