Nima Khademi Kalantari

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Education

University of California, Santa Barbara
Ph.D. Electrical and Computer Engineering *2012–2015*
Thesis Title: "Utilizing Machine Learning for Filtering Monte Carlo Noise"

University of New Mexico*
Ph.D. Candidate Electrical and Computer Engineering *2010–2012*
*Transferred to University of California at Santa Barbara with my advisor, Dr. Pradeep Sen.

Amirkabir University of Technology
M.S. Electrical Engineering *2007–2009*
Thesis Title: "Design, Statistical Analysis, and Implementation of Robust Digital Multimedia Watermarking Systems" (won best thesis award)

Professional Experience

Postdoctoral Scholar
UC San Diego, with Ravi Ramamoorthi *Jan. 2016–present*

Research Assistant
UC Santa Barbara, with Pradeep Sen *Sept. 2012–Dec. 2015*

Research Intern
Adobe Creative Technologies Lab, with Eli Shechtman and Dan Goldman *Summer 2012, 2013*

Research Assistant
University of New Mexico, with Pradeep Sen *Jan. 2010–May 2012*

Research Assistant
Amirkabir University of Technology, with Seyed Mohammad Ahadi *Sept. 2007–Nov. 2009*

Research Interests

Computational image processing, image synthesis, computer vision, applications of deep learning to computer graphics/vision

Publications

h-index: 11 (source: Google Scholar, Apr. 2017)

Journal Papers

[1] **Nima Khademi Kalantari** and Ravi Ramamoorthi. Deep high dynamic range imaging of dynamic scenes. *ACM Trans. on Graph. (SIGGRAPH 2017)*, 36(4), 2017.

[2] Sai Bi, **Nima Khademi Kalantari**, and Ravi Ramamoorthi. Patch-based optimization for image-based texture mapping. *ACM Trans. on Graph. (SIGGRAPH 2017)*, 36(4), 2017.

[3] Ting-Chun Wang, Jun-Yan Zhu, **Nima Khademi Kalantari**, Alexei A. Efros, and Ravi Ramamoorthi. Light field video capture using a learning-based hybrid imaging system. *ACM Trans. on Graph. (SIGGRAPH 2017)*, 36(4), 2017.

[4] **Nima Khademi Kalantari**, Ting-Chun Wang, and Ravi Ramamoorthi. Learning-based view synthesis for light field cameras. *ACM Trans. Graph. (SIGGRAPH Asia 2016)*, 35(6):193:1–193:10, November 2016.

[5] **Nima Khademi Kalantari**, Steve Bako, and Pradeep Sen. A machine learning approach for filtering monte carlo noise. *ACM Trans. Graph. (SIGGRAPH 2015)*, 34(4):122:1–122:12, July 2015.

[6] **Nima Khademi Kalantari**, Eli Shechtman, Connelly Barnes, Soheil Darabi, Dan B. Goldman, and Pradeep Sen. Patch-based high dynamic range video. *ACM Trans. Graph. (SIGGRAPH Asia 2013)*, 32(6):202:1–202:8, November 2013.

[7] **Nima Khademi Kalantari** and Pradeep Sen. Removing the noise in Monte Carlo rendering with general image denoising algorithms. *Computer Graphics Forum (Proceedings of Eurographics 2013)*, 32(2):93–102, 2013.

[8] Pradeep Sen, **Nima Khademi Kalantari**, Maziar Yaesoubi, Soheil Darabi, Dan B. Goldman, and Eli Shechtman. Robust patch-based HDR reconstruction of dynamic scenes. *ACM Trans. Graph. (SIGGRAPH Asia 2012)*, 31(6):203:1–203:11, November 2012.

[9] **Nima Khademi Kalantari** and Pradeep Sen. Fast generation of approximate blue noise point sets. *Computer Graphics Forum (Proceedings of EGSR 2012)*, 31(4):1529–1535, June 2012.

[10] **Nima Khademi Kalantari** and Pradeep Sen. Efficient computation of blue noise point sets through importance sampling. *Computer Graphics Forum (Proceedings of EGSR 2011)*, 30(4):1215–1221, 2011.

[11] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. A logarithmic quantization index modulation for perceptually better data hiding. *IEEE TIP*, 19(6):1504–1517, June 2010.

[12] Mohammad Ali Akhaee, **Nima Khademi Kalantari**, and Farokh Marvasti. Robust audio and speech watermarking using gaussian and laplacian modeling. *Elsevier Signal Processing*, 90(8):2487–2497, August 2010.

[13] **Nima Khademi Kalantari**, Seyed Mohammad Ahadi, and Mansur Vafadust. A robust image watermarking in the ridgelet domain using universally optimum decoder. *IEEE TCSVT*, 20(3):396–406, March 2010.

[14] **Nima Khademi Kalantari**, Mohammad Ali Akhaee, Seyed Mohammad Ahadi, and Hamidreza Amindavar. Robust multiplicative patchwork method for audio watermarking. *IEEE TASL*, 17(6):1133–1141, Aug 2009.

Conference Papers

[15] Abhishek Badki, **Nima Khademi Kalantari**, and Pradeep Sen. Robust radiometric calibration for dynamic scenes in the wild. In *IEEE ICCP*, April 2015.

[16] **Nima Khademi Kalantari**, Eli Shechtman, Soheil Darabi, Dan B. Goldman, and Pradeep Sen. Improving patch-based synthesis by learning patch masks. In *IEEE ICCP*, pages 1–8, May 2014.

[17] Mohammad Hossein Moattar, Mohammad Mehdi Homayounpour, and **Nima Khademi Kalantari**. A new approach for robust realtime voice activity detection using spectral pattern. In *IEEE ICASSP*, pages 4478–4481, March 2010.

[18] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Rational dither modulation using logarithmic quantization with optimum parameter. In *IEEE ICASSP*, pages 1738–1741, March 2010.

[19] **Nima Khademi Kalantari**, Mohammad Ali Akhaee, Seyed Mohammad Ahadi, and Hamidreza Amindavar. Robust multiplicative patchwork method for audio watermarking. In *IEEE DSP*, pages 1–4, July 2009.

[20] Mohammad Ali Akhaee, **Nima Khademi Kalantari**, and Farokh Marvasti. Robust multiplicative audio and speech watermarking using statistical modeling. In *IEEE ICC*, pages 1–5, June 2009.

[21] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Logarithmic quantization index modulation: A perceptually better way to embed data within a cover signal. In *IEEE ICASSP*, pages 1433–1436, April 2009.

[22] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Intelligent decoding for mean quantization based audio watermarking in the wavelet transform domain. In *IEEE ISSPIT*, pages 342–345, Dec 2008.

[23] **Nima Khademi Kalantari**, Seyed Mohammad Ahadi, and Hamidreza Amindavar. A universally optimum decoder for multiplicative audio watermarking. In *IEEE ICME*, pages 225–228, June 2008.

[24] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Vector quantization index modulation watermarking using concentric hyperspherical codebooks. In *IEEE ICASSP*, pages 1741–1744, March 2008.

[25] **Nima Khademi Kalantari**, Seyed Mohammad Ahadi, and Amir Kashi. A robust audio watermarking scheme using mean quantization in the wavelet transform domain. In *IEEE ISSPIT*, pages 198–201, Dec 2007.

[26] **Nima Khademi Kalantari**, Mohammad Ali Akhaee, Seyed Mohammad Ahadi, Maziar Moradi, and Amir Kashi. Audio watermarking based on quantization index modulation in the frequency domain. In *IEEE ICSPC*, pages 1127–1130, Nov 2007.

[27] Mohammad Ali Akhaee, Shahrokh Ghaemmaghami, and **Nima Khademi Kalantari**. A novel technique for audio signals watermarking in the wavelet and walsh transform domains. In *IEEE ISPACS*, pages 171–174, Dec 2006.

Patents

[28] Pradeep Sen, **Nima Khademi Kalantari**, and Steve Bako. Using machine learning to filter monte carlo noise from images, May 2 2016. US Patent App. 15/144,613.

[29] Elya Shechtman, Daniel R Goldman, Aliakbar Darabi, and **Nima Khademi Kalantari**. Variable patch shape synthesis, February 20 2014. US Patent App. 14/185,507.

Teaching Experience

Advances in 3D Reconstruction
Guest Lecturer, University of California, San Diego — *Winter 2017*

Denoising Monte Carlo Rendering
Lecturer for a ACM SIGGRAPH Course — *August 2015*

Image Synthesis
Teaching Assistant, University of California, Santa Barbara — *Winter 2013*

Computer Vision
Teaching Assistant, University of New Mexico — *Spring 2011*

Computer Logic Design Lab
Teaching Assistant, University of New Mexico — *Spring 2011*

Intermediate Programming C++
Teaching Assistant, University of New Mexico — *Spring 2011*

Intermediate Programming C++
Teaching Assistant, University of New Mexico — *Fall 2010*

Professional Service

Coordinator for UC San Diego Center for Visual Computing
Interacted with 10 industrial sponsors and coordinated several center activities such as the first annual retreat on May 20 – 21, 2016 with more than 50 participants.

Reviewer
SIGGRAPH (2013, 2014, 2016, 2017), SIGGRAPH Asia (2016), ICCV (2015, 2017), CVPR (2016, 2017), ECCV 2016, ACCV 2016, HPG 2014, Eurographics 2015, Eusipco 2011, IEEE TVCG, IEEE TIP, IEEE TASLP, IEEE TIFS, IEEE TMM, IEEE J-STSP, Elsevier Computers and Graphics

Awards and Honors

Dissertation Fellowship
ECE Department, University of California, Santa Barbara — *Mar. 2015*

Departmental Fellowship
ECE Department, University of New Mexico — *Jan. 2011*

Best Master's Thesis Award
Amirkabir University of Technology — *Jan. 2010*

Best Master's Thesis Award
IEEE Iran Section — *Jan. 2010*

Top-Rank Student (Top 5%) in Graduate School
ECE Department, Amirkabir University of Technology — *Nov. 2009*

Best Undergraduate Project Award
Amirkabir University of Technology *Sept. 2007*

Awarded to Continue Master's Studies Without an Entrance Exam
ECE Department, Amirkabir University of Technology *Sept. 2007*

Ranked First Among All Undergraduate Students Majored in Electronics
ECE Department, Amirkabir University of Technology *Sept. 2007*