

Nima Khademi Kalantari

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Education

UC Santa Barbara

Ph.D. Electrical and Computer Engineering (Advisor: Pradeep Sen) 2012–2015
Thesis Title: “Utilizing Machine Learning for Filtering Monte Carlo Noise”

University of New Mexico*

Ph.D. Candidate Electrical and Computer Engineering (Advisor: Pradeep Sen) 2010–2012

*Transferred to UC Santa Barbara with advisor.

Amirkabir University of Technology

M.S. Electrical Engineering (Advisor: Seyed Mohammad Ahadi) 2007–2009
Thesis Title: “Design, Statistical Analysis, and Implementation of Robust Digital Multimedia Watermarking Systems”

Amirkabir University of Technology

B.S. Electrical Engineering (Advisor: Seyed Mohammad Ahadi) 2002–2007
Final Project Title: “Digital Audio Watermarking”

Professional Experience

Postdoctoral Scholar

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

Research Intern

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

Research Interests

Computer graphics, computational photography, image synthesis, applications of deep learning in computational photography and image synthesis

Publications

- SIGGRAPH and TOG.....
- [01] Nima Khademi Kalantari and Ravi Ramamoorthi. Deep high dynamic range imaging of dynamic scenes. *ACM TOG (SIGGRAPH 2017)*, 36(4), 2017.
 - [02] Sai Bi, Nima Khademi Kalantari, and Ravi Ramamoorthi. Patch-based optimization for image-based texture mapping. *ACM TOG (SIGGRAPH 2017)*, 36(4), 2017.
 - [03] 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 TOG (SIGGRAPH 2017)*, 36(4), 2017.
 - [04] Nima Khademi Kalantari, Ting-Chun Wang, and Ravi Ramamoorthi. Learning-based

view synthesis for light field cameras. *ACM TOG (SIGGRAPH Asia 2016)*, 35(6):193:1–193:10, November 2016.

- [05] **Nima Khademi Kalantari**, Steve Bako, and Pradeep Sen. A machine learning approach for filtering monte carlo noise. *ACM TOG (SIGGRAPH 2015)*, 34(4):122:1–122:12, July 2015.
- [06] **Nima Khademi Kalantari**, Eli Shechtman, Connelly Barnes, Soheil Darabi, Dan B. Goldman, and Pradeep Sen. Patch-based high dynamic range video. *ACM TOG (SIGGRAPH Asia 2013)*, 32(6):202:1–202:8, November 2013.
- [07] Pradeep Sen, **Nima Khademi Kalantari**, Maziar Yaesoubi, Soheil Darabi, Dan B. Goldman, and Eli Shechtman. Robust patch-based HDR reconstruction of dynamic scenes. *ACM TOG (SIGGRAPH Asia 2012)*, 31(6):203:1–203:11, November 2012.

Journals and Conferences (excluding TOG).....

- [08] Abhishek Badki, **Nima Khademi Kalantari**, and Pradeep Sen. Robust radiometric calibration for dynamic scenes in the wild. In *IEEE ICCP*, April 2015.
- [09] **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.
- [10] **Nima Khademi Kalantari** and Pradeep Sen. Removing the noise in Monte Carlo rendering with general image denoising algorithms. *CGF (Eurographics 2013)*, 32(2):93–102, 2013.
- [11] **Nima Khademi Kalantari** and Pradeep Sen. Fast generation of approximate blue noise point sets. *CGF (EGSR 2012)*, 31(4):1529–1535, June 2012.
- [12] **Nima Khademi Kalantari** and Pradeep Sen. Efficient computation of blue noise point sets through importance sampling. *CGF (EGSR 2011)*, 30(4):1215–1221, 2011.

Pre-Ph.D. Papers.....

- [13] 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.
- [14] **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.
- [15] **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.
- [16] 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.

- [17] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Rational dither modulation using logarithmic quantization with optimum parameter. In *IEEE ICASSP*, pages 1738–1741, March 2010.
- [18] **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.
- [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 Khademii Kalantari**. Variable patch shape synthesis, February 20 2014. US Patent App. 14/185,507.

Teaching Experience

Advances in 3D Reconstruction

Guest Lecturer, UC San Diego

Winter 2017

Denoising Monte Carlo Rendering

Lecturer for a ACM SIGGRAPH Course

August 2015

Image Synthesis

Teaching Assistant, UC 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 and second annual retreats with more than 50 participants.

Reviewer

SIGGRAPH (2013, 2014, 2016, 2017), SIGGRAPH Asia (2016, 2017), ICCV (2015, 2017), CVPR (2016, 2017), ECCV 2016, ACCV 2016, HPG 2014, Eurographics 2015, Eusipco 2011, IEEE PAMI, IEEE TVCG, IEEE TCI, 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

IEEE Iran Section

Jan. 2010