

Nima Kalantari

Education

- 2012 – 2015 **Ph.D.**, *UC Santa Barbara*, ECE.
2010 – 2012 **Ph.D. Candidate**, *University of New Mexico**, ECE.
*Transferred to UC Santa Barbara with advisor.
2007 – 2009 **M.S.**, *Amirkabir University of Technology*, EE.
2002 – 2007 **B.S.**, *Amirkabir University of Technology*, EE.

Employments

- Since 2018 **Assistant Professor**, *Texas A&M University*, CSE.
2016 – 2018 **Postdoctoral Scholar**, *UC San Diego*, CSE.
Summer'13 **Research Intern**, *Adobe Creative Technologies Lab*.
Summer'12 **Research Intern**, *Adobe Creative Technologies Lab*.

Publications

SIGGRAPH and TOG

- [01] Avinash Paliwal, Brandon Nguyen, Andrii Tsarov, and **Nima Khademi Kalantari**. Reshader: View-dependent highlights for single image view-synthesis. *ACM TOG (SIGGRAPH Asia 2023)*, 42(6), nov 2023.
- [02] Libing Zeng, Lele Chen, Yi Xu, , and **Nima Khademi Kalantari**. Mystyle++: A controllable personalized generative prior. In *SIGGRAPH Asia 2023*, New York, NY, USA, 2023. Association for Computing Machinery.
- [03] Xilong Zhou, Milos Hasan, Valentin Deschaintre, Paul Guerrero, Yannick Hold-Geoffroy, Kalyan Sunkavalli, and **Nima Khademi Kalantari**. Photomat: A material generator learned from single flash photos. In *SIGGRAPH 2023*, New York, NY, USA, 2023. Association for Computing Machinery.
- [04] Xilong Zhou and **Nima Khademi Kalantari**. Look-ahead training with learned reflectance loss for single-image SVBRDF estimation. *ACM TOG (SIGGRAPH Asia 2022)*, 41(6), nov 2022.
- [05] Xilong Zhou, Milos Hasan, Valentin Deschaintre, Paul Guerrero, Kalyan Sunkavalli, and **Nima Khademi Kalantari**. Tilegen: Tileable, controllable material generation and capture. In *SIGGRAPH Asia 2022*, New York, NY, USA, 2022. Association for Computing Machinery.
- [06] Ying Wang, Jasper Verheul, Sang-Hoon Yeo, **Nima Khademi Kalantari**, and Shinjiro Sueda. Differentiable simulation of inertial musculotendons. *ACM TOG (SIGGRAPH Asia 2022)*, 41(6), nov 2022.
- [07] Qinbo Li and **Nima Khademi Kalantari**. Synthesizing light field from a single image with variable mpi and two network fusion. *ACM TOG (SIGGRAPH Asia 2020)*, 39(6), 12 2020.
- [08] Marcel Santana Santos, Ren Tsang, and **Nima Khademi Kalantari**. Single image hdr reconstruction using a cnn with masked features and perceptual loss. *ACM ToG (SIGGRAPH 2020)*, 39(4), 7 2020.

- [09] Alexandr Kuznetsov, Miloš Hašan, Zexiang Xu, Ling-Qi Yan, Bruce Walter, **Nima Khademi Kalantari**, Steve Marschner, and Ravi Ramamoorthi. Learning generative models for rendering specular microgeometry. *ACM ToG (SIGGRAPH Asia 2019)*, 38(6), November 2019.
- [10] Ben Mildenhall, Pratul P. Srinivasan, Rodrigo Ortiz-Cayon, **Nima Khademi Kalantari**, Ravi Ramamoorthi, Ren Ng, and Abhishek Kar. Local light field fusion: Practical view synthesis with prescriptive sampling guidelines. *ACM ToG (SIGGRAPH 2019)*, 38(4), July 2019.
- [11] **Nima Khademi Kalantari** and Ravi Ramamoorthi. Deep high dynamic range imaging of dynamic scenes. *ACM TOG (SIGGRAPH 2017)*, 36(4), 2017.
- [12] Sai Bi, **Nima Khademi Kalantari**, and Ravi Ramamoorthi. Patch-based optimization for image-based texture mapping. *ACM TOG (SIGGRAPH 2017)*, 36(4), 2017.
- [13] 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.
- [14] **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.
- [15] **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.
- [16] **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.
- [17] 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 SIGGRAPH and TOG)

- [18] Salah A. Faroughi, Nikhil M. Pawar, Célio Fernandes, Maziar Raissi, Subasish Das, **Nima Khademi Kalantari**, and Seyed Kouros Mahjour. Physics-Guided, Physics-Informed, and Physics-Encoded Neural Networks and Operators in Scientific Computing: Fluid and Solid Mechanics. *Journal of Computing and Information Science in Engineering*, 24(4):040802, 01 2024.
- [19] Avinash Paliwal, Andrii Tsarov, and **Nima Khademi Kalantari**. Implicit view-time interpolation of stereo videos using multi-plane disparities and non-uniform coordinates. In *CVPR 2023*, pages 888–898, June 2023.
- [20] Libing Zeng, Lele Chen, Wentao Bao, Zhong Li, Yi Xu, Junsong Yuan, and **Nima Khademi Kalantari**. 3D-aware facial landmark detection via multi-view consistent training on synthetic data. In *CVPR 2023*, pages 12747–12758, June 2023.
- [21] Xilong Zhou, Miloš Hašan, Valentin Deschaintre, Paul Guerrero, Kalyan Sunkavalli, and Nima Khademi Kalantari. A semi-procedural convolutional material prior. *CGF*, 42(6):e14781, 2023.
- [22] Libing Zeng and **Nima Khademi Kalantari**. Test-time optimization for video depth estimation using pseudo reference depth. *CGF*, 42(1):195–205, 2023.
- [23] Nicholas Milef, Shinjiro Sueda, and **Nima Khademi Kalantari**. Variational pose prediction with dynamic sample selection from sparse tracking signals. *CGF (Eurographics 2023)*, 42(2):359–369, 2023.

- [24] Pedro Figueiredo, Avinash Paliwal, and **Nima Khademi Kalantari**. Frame interpolation for dynamic scenes with implicit flow encoding. In *WACV 2023*, pages 218–228, Los Alamitos, CA, USA, jan 2023. IEEE Computer Society.
- [25] Deepankar Chanda and **Nima Khademi Kalantari**. Semantic-Aware Generative Approach for Image Inpainting. In *EGSR 2021*. The Eurographics Association, 2021.
- [26] A. Paliwal, L. Zeng, and N. Kalantari. Multi-stage raw video denoising with adversarial loss and gradient mask. In *IEEE ICCP 2021*, pages 1–10, Los Alamitos, CA, USA, may 2021. IEEE Computer Society.
- [27] Xilong Zhou and **Nima Khademi Kalantari**. Adversarial single-image svbrdf estimation with hybrid training. *CGF (Eurographics 2021)*, 40(2):315–325, 2021.
- [28] Avinash Paliwal and **Nima Khademi Kalantari**. Deep slow motion video reconstruction with hybrid imaging system. *IEEE TPAMI (ICCP 2020)*, 42(07):1557–1569, jul 2020.
- [29] **Nima Khademi Kalantari** and Ravi Ramamoorthi. Deep HDR video from sequences with alternating exposures. *CGF (Eurographics 2019)*, 38(2):193–205, 2019.
- [30] Alexandr Kuznetsov, **Nima Khademi Kalantari**, and Ravi Ramamoorthi. Deep adaptive sampling for low sample count rendering. *CGF (EGSR 2018)*, 37(4):35–44, 2018.
- [31] Sai Bi, **Nima Khademi Kalantari**, and Ravi Ramamoorthi. Deep hybrid real and synthetic training for intrinsic decomposition. *EGSR 2018*, pages 53–63, June 2018.
- [32] Abhishek Badki, **Nima Khademi Kalantari**, and Pradeep Sen. Robust radiometric calibration for dynamic scenes in the wild. In *IEEE ICCP 2015*, pages 1–10, April 2015.
- [33] **Nima Khademi Kalantari**, Eli Shechtman, Soheil Darabi, Dan B. Goldman, and Pradeep Sen. Improving patch-based synthesis by learning patch masks. In *IEEE ICCP 2014*, pages 1–8, May 2014.
- [34] **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.
- [35] **Nima Khademi Kalantari** and Pradeep Sen. Fast generation of approximate blue noise point sets. *CGF (EGSR 2012)*, 31(4):1529–1535, June 2012.
- [36] **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

- [37] 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.
- [38] **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.
- [39] **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.
- [40] 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.
- [41] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Rational dither modulation using logarithmic quantization with optimum parameter. In *IEEE ICASSP*, pages 1738–1741, March 2010.

- [42] **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.
- [43] **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.
- [44] 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.
- [45] **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.
- [46] **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.
- [47] **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.
- [48] **Nima Khademi Kalantari** and Seyed Mohammad Ahadi. Vector quantization index modulation watermarking using concentric hyperspherical codebooks. In *IEEE ICASSP*, pages 1741–1744, March 2008.
- [49] **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.
- [50] **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.
- [51] 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

- [52] Nima Khademi Kalantari and Ravi Ramamoorthi. Generation of high dynamic range visual media, March 28 2019. US Patent App. 16/141,843.
- [53] 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.
- [54] Elya Shechtman, Daniel R Goldman, Aliakbar Darabi, and **Nima Khademii Kalantari**. Variable patch shape synthesis, February 20 2014. US Patent App. 14/185,507.

Students

- PhD** **Xilong Zhou**, *Texas A&M University*, 2018 – .
- Avinash Paliwal**, *Texas A&M University*, 2019 – .
- Libing Zeng**, *Texas A&M University*, 2019 – .
- Pedro Figueiredo**, *Texas A&M University*, 2020 – .
- MS** **Brandon Nguyen**, *Texas A&M University*, 2023 – .
- Qihao He**, *Texas A&M University*, 2023 – .

Aakash Garg, *Texas A&M University*, 2023 – .

Jay Nehete, *Texas A&M University*, 2023 – .

Alumni Deepankar Chanda, *Texas A&M University*, M.S., 2018–2020.
now Software Engineer at Thermo Fisher Scientific

Marcel Santos, *Universidade Federal de Pernambuco*, M.S., 2018–2020.
now Research Scientist at Apple

Stuti Sakhi, *Texas A&M University*, M.S., 2018–2020.
now Software Engineer at Cash App

Brandon Nguyen, *Texas A&M University*, B.S., 2022–2023.

Shuyu Wang, *Texas A&M University*, B.S., 2021–2022.

Jonah Taylor, *Texas A&M University*, B.S., 2021–2022.

Aksel Taylan, *Texas A&M University*, B.S., 2019–2020.

Teaching

- 2023 **Instructor**, *CSCE 441 Computer Graphics*, Texas A&M University, Fall.
Instructor, *CSCE 448/748 Computational Photography*, Texas A&M University, Spring.
- 2022 **Instructor**, *CSCE 441 Computer Graphics*, Texas A&M University, Fall.
Instructor, *CSCE 489/689 Computational Photography*, Texas A&M University, Spring.
- 2021 **Instructor**, *CSCE 441 Computer Graphics*, Texas A&M University, Fall.
Instructor, *CSCE 489/689 Computational Photography*, Texas A&M University, Spring.
- 2020 **Instructor**, *CSCE 441 Computer Graphics*, Texas A&M University, Fall.
Instructor, *CSCE 489/689 Computational Photography*, Texas A&M University, Spring.
- 2019 **Instructor**, *CSCE 441 Computer Graphics*, Texas A&M University, Fall.
Instructor, *CSCE 689 Computational Photography*, Texas A&M University, Spring.
- 2018 **Instructor**, *CSCE 689 Deep Learning for Computer Graphics*, Texas A&M University, Fall.
- 2017 **Guest Lecturer**, *Advances in 3D Reconstruction*, UC San Diego, Winter.
- 2013 **Teaching Assistant**, *Image Synthesis*, UC Santa Barbara, Winter.
- 2011 **Teaching Assistant**, *Computer Logic Design Lab*, University of New Mexico, Fall.
Teaching Assistant, *Intermediate Programming C++*, University of New Mexico, Spring.
Teaching Assistant, *Computer Vision*, University of New Mexico, Spring.
- 2010 **Teaching Assistant**, *Intermediate Programming C++*, University of New Mexico, Fall.

Talks

- 2023 **Invited Talk**, *Synthesis and Acquisition of Visual Appearance from Sparse Images*, Meta.
- 2022 **SIGGRAPH Asia**, Presented papers [05] and [04].
- 2020 **CVPR Course**, *Novel View Synthesis: From Depth-Based Warping to Multi-Plane Images and Beyond*.
- 2018 **Invited Talk**, *Deep HDR Image and Video Reconstruction From Sequences With Varying Exposures*, ICCP.
- 2018 **Invited Talk**, *Utilizing Physics in Deep Learning for Graphics*, UIUC, Dartmouth College, TAMU, Purdue, UIC, GMU, FSU, Clemson University.
- 2015 **ACM SIGGRAPH Course**, *Denoising Monte Carlo Rendering*.
- 2014 **Invited Talk**, *Capturing the World in High Dynamic Range*, Stanford University.

Media Coverage

- 2023 Paper [03], [Two Minute Papers](#).
 2021 Paper [07], [TAMU Engineering News](#), [TechXplore](#), [ACM Tech News](#).
 2019 Paper [10], [SIGGRAPH Technical Papers Trailer](#), [VentureBeat](#), [Forbes](#), [VFXSCIENCE](#).
 2017 Paper [13], [SIGGRAPH Technical Papers Trailer](#), [Two Minute Papers](#).

External Service

Associate Editor ACM Transactions on Graphics (ToG), *Since 2020*.

Program Committee ACM SIGGRAPH, *Technical Papers*, 2024.
 ACM SIGGRAPH Asia, *Technical Papers*, 2020 , 2021, 2023.
 International Conference on Computational Photography (ICCP), *2019 – 2023*.
 Eurographics, *2023 – 2024*.
 Eurographics Symposium on Rendering (EGSR), *2020 – 2023*.

COI Coordinator ACM SIGGRAPH Asia, *Technical Papers*, 2019, 2022.
 ACM SIGGRAPH, *Technical Papers*, 2020.

Grant Reviewer National Science Foundation (NSF), *2023*.
 Austrian Science Fund, *2020 – 2021*.

Reviewer SIGGRAPH, SIGGRAPH Asia, ICCV, CVPR, ECCV, ACCV, HPG, Eurographics, ACM ToG, IEEE PAMI, IEEE TVCG, IEEE TCI, IEEE TIP, IEEE TASLP, IEEE TIFS, IEEE TMM, IEEE J-STSP, Elsevier Computers and Graphics.

Coordinator UC San Diego Center for Visual Computing, *2016 – 2018*, Interacted with 10 industrial sponsors and coordinated several center activities such as the first, second, and third annual retreats, each with more than 50 participants..

Internal Service

- 2023 – 2024 **Graduate Awards Committee**, *Computer Science and Engineering Department*.
Visualization Joint Committee, *Computer Science and Engineering Department*.
 2022 – 2023 **Graduate Awards Committee**, *Computer Science and Engineering Department*.
 2021 – 2022 **Graduate Awards Committee**, *Computer Science and Engineering Department*.
 2020 – 2021 **Graduate Awards Committee**, *Computer Science and Engineering Department*.
Visualization Joint Committee, *Computer Science and Engineering Department*.
Faculty Search Committee, *Visualization Department*.
 2019 – 2020 **Graduate Awards Committee**, *Computer Science and Engineering Department*.
Faculty Search Committee, *Visualization Department*.
 2018 – 2019 **Ph.D. Admission Committee**, *Computer Science and Engineering Department*.
Mentoring all-women autonomous underwater vehicle team, *College of Engineering*.

Awards and Honors

- 2024 **Frontiers of Science Award**.
 2024 **TEES Young Faculty Fellow Award**.
 2023 **NSF CAREER Award**.
 2015 **Dissertation Fellowship**, *ECE Department, University of California, Santa Barbara*.
 2011 **Departmental Fellowship**, *ECE Department, University of New Mexico*.
 2010 **IEEE Iran Section, Best Master's Thesis Award**.