

MINH N. DO

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Research Interests

Signal processing, computational imaging, geometric vision, data science.

Educational Background

1998 - 2001 **Doctor of Science in Communication Systems**, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland.

1994 - 1997 **Bachelor of Engineering in Computer Engineering** (First Class Honors), University of Canberra, Australia.

Professional Positions

2014 - present **Professor**, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign (UIUC).

2008 - 2014 **Associate Professor**, Department of Electrical and Computer Engineering, UIUC.

2002 - 2008 **Assistant Professor**, Department of Electrical and Computer Engineering, UIUC.

2002 - present **Faculty Member**, Coordinated Science Laboratory and Beckman Institute for Advanced Science and Technology, UIUC.

2017 - present **Affiliate Faculty**, Department of Computer Science, UIUC.

2008 - present **Affiliate Faculty**, Department of Bioengineering, UIUC.

2010 - present **Affiliate Faculty**, Advanced Digital Sciences Center, University of Illinois in Singapore.

2009 - 2014 **Co-Founder & Chief Technology Officer**, Personify Inc. (formerly Nuvixa).

2015 - 2016 **Chief Scientist**, Misfit Inc.

Awards and Honors

- Associate, Center for Advanced Study, UIUC (2017).
- Fellow of the IEEE (2014).
- Young Author Best Paper Award, IEEE Signal Processing Society (2008).
- Xerox Award for Faculty Research, College of Engineering, UIUC (2007).
- Co-authored a paper (with Yue Lu) that received a IBM Student Paper Award at the IEEE International Conference on Image Processing (2007).

- Beckman Fellow, Center for Advanced Study, UIUC (2006).
- Teachers Ranked as Excellent, UIUC (Spring 2006; Fall 2014; Spring 2018).
- Co-authored a paper (with Yue Lu) that received a Most Innovative Paper Award at the IEEE International Conference on Image Processing (2006).
- Co-authored a paper (with Arthur L. da Cunha) that received a Best Student Paper Award at the IEEE International Conference on Acoustics, Speech, and Signal Processing (2005).
- Co-authored a paper (with Ha T. Nguyen) that received a Best Student Paper Award at the IEEE International Conference on Acoustics, Speech, and Signal Processing (2005).
- CAREER Award from the National Science Foundation (2003).
- Best Doctoral Thesis Award from the Swiss Federal Institute of Technology Lausanne (2001).
- University Medal from the University of Canberra, Australia (1997).
- Silver Medal in the 32nd International Mathematical Olympiad, Sweden (1991).

Professional Activities

- Co-Chair, Allerton Conference on Communication, Control, and Computing (2015 & 2016).
- Member of Program Committee, IS&T / SPIE Conference on Computational Imaging (2012 - present).
- Member of Technical Committee of IEEE International Workshop on Hot Topics in 3D (Hot3D), (2012 - present)
- Technical Program Co-Chair of the IEEE GlobalSIP Symposium on Mobile Imaging, Austin, 2013.
- Member of Organizing Committee of the IEEE IVMSIP Workshop on 3D Image/Video Technologies and Applications, 2013.
- Associate Editor of the IEEE Transactions on Image Processing (2007 - 2012).
- Member of the Signal Processing Theory and Methods Technical Committee, IEEE Signal Processing Society (elected, 2007 - 2013).
- Member of the Image, Video, and Multidimensional Signal Processing Technical Committee, IEEE Signal Processing Society (elected, 2007 - 2013).
- Guest Editor of the Special Issue on Multicamera Imaging in the Journal of Visual Communication and Image Representation, 2010.
- Program Co-Chair of the 27th Picture Coding Symposium, Chicago, 2009.
- Member of Technical Program Committee for the SPIE Wavelet Applications in Signal and Image Processing Conference (2003, 2005, & 2007).
- Member of a team of professors selected by the US National Academies and the Vietnam Education Foundation for traveling to Vietnam to select talented students for graduate studies in the US (2004 & 2005).

- Members of NSF Proposal Review Panels in Signal Processing.
- Reviewer for major journals and conferences in signal and image processing.
- Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).
- Member of Society for Industrial and Applied Mathematics (SIAM).

Teaching at the University of Illinois

- Digital Signal Processing I.
- Digital Signal Processing II.
- Embedded Digital Signal Processing Lab.
- Wavelets in Signal Processing.
- Digital Signal and Spectral Analysis.
- Vector Space Signal Processing.
- Digital Imaging.
- Topics in Image Processing.
- Making Sense of Big Data.
- Signal Processing Seminars (coordinator).

Research Supervision

- **Current postdocs and research scientists:** Daniel Lin.
- **Current graduate students:** Kirk Busche, Chen Chen, Molly Dasso, Daniel Gonzales, Teck Yian Lim, Khoi-Nguyen Mac, Ahnaf Masroor, Trong N. Nguyen, Jason Nie, Renán A. Rojas, Corey Snyder, Vaishnavi Subramanian, Raymond Yeh, Mona Zehni.
- **Former postdocs:**
 - Jiangbo Lu (2010-2016; now at Shenzhen Cloudream Technology, China)
 - Nianjuan Jiang (2012-2016; now at Shenzhen Cloudream Technology, China)
 - Dongbo Min (2010-2015; now at Chungnam National University, Korea),
 - Viet-Anh Nguyen (2011-2016; now at Blackmagic, Singapore),
 - Suma P. Bhat (2012-2015; now at UIUC),
 - Mathews Jacob (2003-2006; now at University of Iowa),
 - S. Derin Babacan (2010-2012; now at Google Inc.).
- **Former graduate students:**
 - Duncan Po (M.Sc. 2003, now at The MathWorks),
 - Jianping Zhou (Ph.D. 2005, now at Apple),
 - Arthur L. A. da Cunha (Ph.D. 2006; now at BNP Paribas),
 - Robert L. Morrison Jr. (Ph.D. 2007, now at MIT Lincoln Laboratory),
 - Yue Lu (Ph.D. 2007; now at Harvard University),
 - Ha T. Nguyen (Ph.D. 2007; now at Sony Electronics),
 - Chinh La (M.Sc. 2007; now at Intel),
 - Joseph Coombs (M.Sc. 2007; now at Texas Instruments),

- Matthieu Maitre (Ph.D. 2008; now at Microsoft),
 - Ka L. Law (Ph.D. 2008; now at Technische Universität Darmstadt),
 - Spencer Brady (M.Sc. 2009; now at Cisco Systems),
 - Quang H. Nguyen (M.Sc. 2009; now at Personify),
 - Alex Dapore (M.Sc. 2010; now at L-3 Communications),
 - Joshua Blackburn (M.Sc. 2010; now at Jacobs Technology),
 - Daniel Kubacki (M.Sc. 2011; now at Jacobs Technology),
 - Hien M. Nguyen (Ph.D. 2011; now at Stanford University),
 - Ha Q. Nguyen (Ph.D. 2014; now at EPFL),
 - Huy Q. Bui (Ph.D. 2015; now at VanGogh Imaging),
 - André L. N. Targino da Costa (Ph.D. 2015; now at ImmersiveTouch),
 - Tan H. Nguyen (Ph.D. 2016; now at Butterfly Network),
 - Siying Liu (Ph.D. 2016; now at A*-STAR),
 - Greg Meyer (Ph.D. 2016; now at Uber),
 - Benjamin Chidester (Ph.D. 2017; now at CMU),
 - Ramanpreet Singh (Ph.D. 2017; now at A*-STAR),
 - Dario Aranguiz (M.Sc. 2018; now at Petronics).
- **Undergraduate students:** Have supervised about 40 undergraduate research students at UIUC.

Research Funding

- 2003 - 2009 *CAREER: Directional Multiresolution Image Processing: Theory, Algorithms and Applications*, National Science Foundation (total amount: \$400,001).
- 2003 - 2007 *Remote Reality: 4-D Audio-Visual Reconstruction and Compression from Multiple Sensors*, National Science Foundation (co-PI with Prof. Douglas Jones; total amount: \$326,735).
- 2004 - 2008 *A Modern Autofocus Methodology with Applications to Radar Imaging*, National Science Foundation (co-PI with Prof. David Munson, University of Michigan; total amount: \$449,993).
- 2006 - 2010 *Practical Compressed Sensing*, National Science Foundation (co-PI with Prof. Yoram Bresler; total amount: \$530,926).
- 2009 - 2013 *Sparse and Geometric Representations of Images and Multidimensional Signals*, National Science Foundation (total amount: \$335,635).
- 2009 - 2014 *Advanced Digital Sciences Center (ADSC)*, A*STAR Singapore (about 20 faculty PI's from UIUC; total amount: \$50,000,000).
- 2009 - 2014 *Universal Parallel Computing Research Center (UPCRC)* later became *Illinois-Intel Parallel Center (I2PC)*, Intel and Microsoft (about 20 faculty PI's from UIUC; total amount: \$10,000,000).
- 2010 - 2013 *Novel Acquisition and Computation in Vibrational Spectroscopic Imaging*, National Science Foundation (co-PI with Prof. Rohit Bhargava; total amount: \$400,000).
- 2011 - 2012 *Real-Time Remote Reality for Telepresence*, Intel (total amount: \$25,000).

- 2011 - 2014 *Collaborative Research: Advances in the Theory and Practice of Low-Rank Matrix Recovery and Modeling*, National Science Foundation (total amount: \$368,875).
- 2011 - 2014 *A Region-Based Approach to Reconstructing Urban Scenes*, National Science Foundation (total amount: \$450,000).
- 2012 - 2015 *Develop Mobile Visual Computing Building Blocks and Applications*, Intel (total amount: \$30,000).
- 2012 - 2015 *Image and Video Processing with Depth*, National Science Foundation (total amount: \$390,510).
- 2013 - 2014 *Perceptual Signal Processing for Digital Touch*, Texas Instruments (total amount: \$30,000).
- 2014 - 2017 *Visual Modeling and Analytics of Dynamic Environments for the Masses*, Advanced Digital Science Center (ADSC), A*STAR, Singapore (total amount: \$1,287,941).
- 2015 - 2018 *Multi-modal Augmented Reality and 3D Object Recognition*, DAQRI (total amount: \$50,000).
- 2015 - 2016 *Internal Structure Mapping with X-Ray Phase Contrast Imaging*, Sandia National Labs (total amount: \$27,000).
- 2015 - 2018 *3D Imaging with Multiple RGB-D Cameras*, Personify (total amount: \$15,000).
- 2016 - 2018 *Making Sense of Big Data*, Jump Labs (total amount: \$35,000).
- 2016 - 2017 *Inferential and Feature Selection Methods for Video Imaging*, Sandia National Labs (total amount: \$65,000).
- 2016 - 2020 *IBM-UIUC Center of Cognitive Systems Research*, IBM (total amount: \$3,000,000).
- 2017 - 2018 *Towards a Science of Actionable Intelligence*, Sandia National Labs (total amount: \$170,000).
- 2018 - 2021 *Visual Representation and Sensing from Mobile Cameras*, UIUC-ZJU Research Collaboration (total amount: \$75,000).

Publications

Book Chapters

1. M. N. Do and M. Vetterli, "Contourlets," *Beyond Wavelets*, G. V. Welland ed., Academic Press, New York, 2003.

Monographs

1. M. N. Do and Y. M. Lu, "Multidimensional filter banks and multiscale geometric representations," *Foundations and Trends in Signal Processing*, vol. 5, issue. 3, pp. 157-264, 2012.

Journals

1. T. N. Nguyen, M. N. Do and M. L. Oelze, "Visualization of the intensity field of a focused ultrasound (FUS) source in situ," *IEEE Transactions on Medical Imaging*, 2018.

2. R. S. Pahwa, J. Lu, N. Jiang, T. T. Ng, and M. N. Do, "Locating 3D object proposals: A depth-based online approach," *IEEE Transactions on Circuits and Systems for Video Technology*, pp. 626-639, 28(3), Mar. 2018.
3. W.-Y. Lin, F. Wang, M.-M. Cheng, S.-K. Yeung, P. H. S. Torr, M. N. Do, and J. Lu, "CODE: Coherence based decision boundaries for feature correspondence," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, pp. 34-47, 40(1), Jan. 2018.
4. S. Liu and M. N. Do, "Inverse rendering and relighting from multiple color plus depth images," *IEEE Transactions on Image Processing*, pp. 4951-4961, 26(10), Oct. 2017.
5. S. Kim, D. Min, B. Ham, M. N. Do and K. Sohn, "DASC: Robust dense descriptor for multi-modal and multi-spectral correspondence estimation," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, pp. 1712-1729, Sep. 2017.
6. J. A. Bengua, H. N. Phien, H. D. Tuan, and M. N. Do, "Matrix product state for higher-order tensor compression and classification," *IEEE Transactions on Signal Processing*, 2017.
7. J. A. Bengua, H. N. Phien, H. D. Tuan, and M. N. Do, "Efficient tensor completion for color image and video recovery: Low-rank tensor train," *IEEE Transactions on Image Processing*, 2017.
8. T. H. Nguyen, S. Sridharan, V. Macias, A. K. Balla, J. Melamed, M. N. Do, and G. Popescu, "Automatic Gleason grading of prostate cancer using quantitative phase imaging and machine learning," *Journal of Biomedical Optics*, 2017.
9. T. H. Nguyen, M. Kandel, H. M. Shakir, C. B.-Popescu, M. N. Do, and G. Popescu, "Halo-free Phase Contrast Microscopy," *Scientific Reports*, 2017.
10. A. J. Bower, B. Chidester, J. Li, Y. Zhao, M. Marjanovic, E. J. Chaney, M. N. Do, S. A. Boppart, "A quantitative framework for the analysis of multimodal optical microscopy images," *Quant Imaging Med Surg*, 7(1):24-37, 2017.
11. Y. Zhang, L. Cheng, J. Wu, J. Cai, M. N. Do, and J. Lu, "Action recognition in still images with minimum annotation efforts," *IEEE Transactions on Image Processing*, vol. 25 (11), 5479-5490, Nov. 2016.
12. J. Lu, Y. Li, H. Yang, D. Min, W. Eng, and M. N. Do, "PatchMatch Filter: Edge-aware filtering meets randomized search for visual correspondence," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, pp. 1866-1879, Oct. 2016.
13. Y. Zhang, X. S. Wei, J. Wu, J. Cai, J. Lu, V. A. Nguyen, and M. N. Do, "Weakly supervised fine-grained categorization with part-based image representation," *IEEE Transactions on Image Processing*, vol. 25 (4), 1713-1725, Apr. 2016.
14. L. Wang, D. Tang, Y. Guo, and M. N. Do, "Common visual pattern discovery via nonlinear mean shift clustering," *IEEE Transactions on Image Processing*, vol. 24, no. 12, pp. 5442-5454, Dec. 2015.
15. V. A. Nguyen, J. Lu, S. Zhao, D. T. Vu, H. Yang, D. L. Jones, and M. N. Do, "ITEM: Immersive Telepresence for Entertainment and Meetings – a practical approach," *IEEE Journal of Selected Topics in Signal Processing*, pp. 546-561, vol. 9, Apr. 2015.
16. H. Q. Bui, C. N. H. La, and M. N. Do, "A fast tree-based algorithm for compressed sensing with sparse-tree prior," *Signal Processing*, pp. 628-641, vol. 108, Mar. 2015.

17. H. Q. Nguyen and M. N. Do, "Downsampling of signals on graphs via maximum spanning trees," *IEEE Transactions on Signal Processing*, pp. 182-191, vol. 63, Jan. 2015.
18. H. Q. Nguyen and M. N. Do, "Inverse rendering of Lambertian surfaces using subspace methods," *IEEE Transactions on Image Processing*, pp. 5545-5558, Dec. 2014.
19. D. Min, S. Choi, J. Lu, B. Ham, K. Sohn, and M. N. Do, "Fast global image smoothing based on weighted least squares," *IEEE Transactions on Image Processing*, pp. 5638-5653, Dec. 2014.
20. V. A. Nguyen, J. Lu, S. Zhao, D. L. Jones, and M. N. Do, "Teleimmersive audio-visual communication using commodity hardware," *IEEE Signal Processing Magazine*, Nov. 2014.
21. S. D. Babacan, S. Nakajima, and M. N. Do, "Bayesian group-sparse modeling and variational inference," *IEEE Transactions on Signal Processing*, vol. 62, no. 11, pp. 2906-2921, June 2014.
22. D. T. Vu, B. Chidester, H. Yang, M. N. Do, and J. Lu, "Efficient hybrid tree-based stereo matching with applications to postcapture image refocusing," *IEEE Transactions on Image Processing*, vol. 23, no. 8, pp. 3428-3442, Aug. 2014.
23. A. L. N. Targino da Costa and M. N. Do, "A retina-based perceptually lossless limit and a Gaussian foveation scheme with loss control," *IEEE Journal on Selected Topics in Signal Processing*, vol. 8, no. 3, pp. 438-453, 2014.
24. B. Ham, D. Min, C. Oh, M. N. Do, and K. Sohn, "Probability-based rendering for view synthesis," *IEEE Trans. on Image Processing*, vol. 23, no. 2, pp. 870-884, Feb. 2014.
25. D. Min, J. Lu, and M. N. Do, "Joint histogram based cost aggregation for stereo matching," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 35, no. 10, pp. 2539-2545, Oct. 2013.
26. V.-A. Nguyen, D. Min, and M. N. Do, "Efficient techniques for depth video compression using weighted mode filtering," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 23, no. 2, pp. 189-202, Feb. 2013.
27. H. M. Nguyen, X. Peng, M. N. Do, and Z.-P. Liang, "Denoising MR spectroscopic imaging data with low-rank approximations," *IEEE Trans. on Biomedical Engineering*, vol. 60, pp. 78-89, Jan. 2013.
28. M. Mir, S. D. Babacan, M. Bednarz, M. N. Do, I. Golding, and G. Popescu, "Visualizing Escherichia coli sub-cellular structure using sparse deconvolution spatial light interference tomography," *PLoS ONE*, vol. 7, June 2012.
29. D. Min, J. Lu, and M. N. Do, "Depth video enhancement based on weighted mode filtering," *IEEE Transactions on Image Processing*, vol. 21, no. 3, pp. 1176-1190, Mar. 2012.
30. M. N. Do, D. Marchand-Maillet, and M. Vetterli, "On the bandwidth of the plenoptic function," *IEEE Transactions on Image Processing*, vol. 21, no. 2, pp. 708-717, Feb. 2012.
31. Y. Liang, K. Rupnow, Y. Li, D. Min, M. N. Do, and D. Chen, "High level synthesis: Productivity, performance, and software constraints," *Journal of Electrical and Computer Engineering*, Jan. 2012
32. S. D. Babacan, Z. Wang, M. Do, and G. Popescu, "Cell imaging beyond the diffraction limit using sparse deconvolution spatial light interference microscopy," *Biomedical Optics Express*, vol. 2, no. 7, pp. 1815-1827, July 2011.

33. H. Pham, H. Ding, N. Sobh, M. Do, S. Patel, and G. Popescu, "Off-axis quantitative phase imaging processing using CUDA: toward real-time applications," *Biomedical Optics Express*, vol. 2, no. 7, pp. 1781-1793, July 2011.
34. A. J. Dapore, M. R. King, J. Harter, S. Sarwate, M. L. Oelze, J. A. Zagzebski, M. N. Do, T. J. Hall, and W. D. O'Brien, "Analysis of human fibroadenomas using three-dimensional impedance maps," *IEEE Transactions on Medical Imaging*, vol. 30, no. 6, pp. 1206-1213, June 2011.
35. M. N. Do, Q. H. Nguyen, H. T. Nguyen, D. Kubacki, and Sanjay J. Patel, "Immersive visual communication with depth cameras and parallel computing," *IEEE Signal Processing Magazine*, vol. 28, pp. 58-66, Jan. 2011.
36. K. L. Law and M. N. Do, "Multidimensional filter bank signal reconstruction from multichannel acquisition," *IEEE Transactions on Image Processing*, vol. 20, pp. 317-326, Feb. 2011.
37. M. Maitre and M. N. Do, "Depth and depth-color coding using shape-adaptive wavelets," *Journal of Visual Communication and Image Representation*, pp. 513-522, July 2010.
38. A. L. Cunha, M. N. Do, and M. Vetterli, "On the information rates of the plenoptic function," *IEEE Transactions on Information Theory*, vol. 56, pp. 1306-1321, Mar. 2010.
39. D. Lin, X. Huang, Q. Nguyen, J. Blackburn, C. Rodrigues, T. Huang, M. N. Do, S. Patel, and W.-M. Hwu, "Parallelization of video processing: from programming models to applications," *IEEE Signal Processing Magazine*, pp. 103-112, Nov. 2009.
40. K. L. Law, R. M. Fossum, and M. N. Do, "Generic invertibility of multidimensional FIR filter banks and MIMO systems," *IEEE Transactions on Signal Processing*, vol. 57, no. 11, pp. 4282-4291, Nov. 2009.
41. Y. M. Lu, M. N. Do, and R. S. Laugesen, "A computable Fourier condition generating alias-free sampling lattices," *IEEE Transactions on Signal Processing*, vol. 57, no. 5, pp. 1768-1782, May 2009.
42. R. L. Morrison, M. N. Do, and D. C. Munson, "MCA: a multichannel approach to SAR autofocus," *IEEE Transactions on Image Processing*, vol. 18, no. 4, pp. 840-853, Apr. 2009.
43. H. T. Nguyen and M. N. Do, "Error analysis for image-based rendering with depth information," *IEEE Transactions on Image Processing*, vol. 18, no. 4, pp. 703-716, Apr. 2009.
44. H. M. Nguyen, B. P. Sutton, R. L. Morrison, and M. N. Do, "Joint estimation and correction of geometric distortions for EPI functional MRI using harmonic retrieval," *IEEE Transactions on Medical Imaging*, vol. 28, no. 3, pp. 423-434, Mar. 2009.
45. H. T. Nguyen and M. N. Do, "Hybrid filter banks with fractional delays: Minimax design and application to multichannel sampling," *IEEE Transactions on Signal Processing*, vol. 56, no. 7, pp. 3180-3190, July 2008.
46. M. Maitre, Y. Shinagawa, and M. N. Do, "Wavelet-based joint estimation and encoding of depth-image-based representations for free-viewpoint rendering," *IEEE Transactions on Image Processing*, vol. 17, no. 6, pp. 946-957, June 2008.
47. Y. M. Lu and M. N. Do, "A theory for sampling signals from a union of subspaces," *IEEE Transactions on Signal Processing*, vol. 56, no. 6, pp. 2334-2345, June 2008.

48. Y. M. Lu and M. N. Do, "A mapping-based design for nonsubsamped hourglass filter banks in arbitrary dimensions," *IEEE Transactions on Signal Processing*, vol. 56, no. 4, pp. 1466-1478, Apr. 2008.
49. Y. M. Lu and M. N. Do, "Sampling signals from a union of subspaces," *IEEE Signal Processing Magazine*, vol. 25, pp. 41-47, Mar. 2008.
50. R. L. Morrison, M. N. Do, and D. Munson, "SAR image autofocus by sharpness optimization: a theoretical study," *IEEE Transactions on Image Processing*, vol. 16, no. 9, pp. 2309-2321, Sep. 2007.
51. A. L. Cunha and M. N. Do, "On two-channel filter banks with directional vanishing moments," *IEEE Transactions on Image Processing*, vol. 16, no. 5, pp. 1207-1219, May 2007.
52. Y. M. Lu and M. N. Do, "Multi-dimensional directional filter banks and surfacelets," *IEEE Transactions on Image Processing*, vol. 16, no. 4, pp. 918-931, Apr. 2007.
53. D. Xu and M. N. Do, "On the number of rectangular tilings," *IEEE Transactions on Image Processing*, vol. 15, no. 10, pp. 3225-3230, Oct. 2006.
54. J. Zhou and M. N. Do, "Multidimensional multichannel FIR deconvolution using Gröbner bases," *IEEE Transactions on Image Processing*, vol. 15, no. 10, pp. 2998-3007, Oct. 2006.
55. A. L. Cunha, J. Zhou, and M. N. Do, "The nonsubsamped contourlet transform: Theory, design, and applications," *IEEE Transactions on Image Processing*, vol. 15, no. 10, pp. 3089-3101, Oct. 2006.
56. Y. Huang, I. Pollak, M. N. Do, and C. A. Bouman, "Fast search for best representations in multitree dictionaries," *IEEE Transactions on Image Processing*, vol. 15, no. 7, pp. 1779-1793, July 2006.
57. D. D.-Y. Po and M. N. Do, "Directional multiscale modeling of images using the contourlet transform," *IEEE Transactions on Image Processing*, vol. 15, no. 6, pp. 1610-1620, June 2006.
58. Y. Huang, I. Pollak, C.A. Bouman, and M. N. Do, "Best basis search in lapped dictionaries," *IEEE Transactions on Signal Processing*, vol. 54, no. 2, pp. 651- 664, Feb. 2006.
59. J. Zhou, M. N. Do, and J. Kovacevic, "Special paraunitary matrices, Cayley transform, and multi-dimensional orthogonal filter banks," *IEEE Transactions on Image Processing*, vol. 15, no. 2, pp. 511-519, Feb. 2006.
60. M. N. Do and M. Vetterli, "The contourlet transform: an efficient directional multiresolution image representation," *IEEE Transactions on Image Processing*, vol. 14, no. 12, pp. 2091-2106, Dec. 2005.
61. J. Zhou, M. N. Do, and J. Kovacevic, "Multidimensional orthogonal filter bank characterization and design using the Cayley transform," *IEEE Transactions on Image Processing*, vol. 14, no. 6, pp. 760-769, June 2005.
62. R. Shukla, P. L. Dragotti, M. N. Do and M. Vetterli, "Rate-distortion optimized tree structured compression algorithms for piecewise smooth images," *IEEE Transactions on Image Processing*, vol. 14, pp. 343-359, Mar. 2005.
63. C. Xu, D. L. Marks, M. N. Do, and S. A. Boppart, "Separation of absorption and scattering profiles in spectroscopic optical coherence tomography using a least-squares algorithm," *Optics Express*, vol. 12, no. 20, pp. 4790-4803, Oct. 2004.

64. M. N. Do and M. Vetterli, "Framing pyramids," *IEEE Transactions on Signal Processing*, vol. 51, pp. 2329-2342, Sep. 2003.
65. M. N. Do, "Fast approximation of Kullback-Leibler distance for dependence trees and hidden Markov models," *IEEE Signal Processing Letters*, vol. 10, pp. 115-118, Apr. 2003.
66. M. N. Do and M. Vetterli, "The finite ridgelet transform for image representation," *IEEE Transactions on Image Processing*, vol. 12, pp. 16-28, Jan. 2003.
67. M. N. Do and M. Vetterli, "Rotation invariant texture characterization and retrieval using steerable wavelet-domain hidden Markov models," *IEEE Transactions on Multimedia*, vol. 4, pp. 517-527, Dec. 2002.
68. M. N. Do and M. Vetterli, "Wavelet-based texture retrieval using generalized Gaussian density and Kullback-Leibler distance," *IEEE Transactions on Image Processing*, vol. 11, pp. 146-158, Feb. 2002.

Conferences

1. R. A. Yeh, T. Y. Lim, C. Chen, A. G. Schwing, M. Hasegawa-Johnson, and M. N. Do, "Image restoration with deep generative models," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Calgary, Canada, April 2018.
2. T. Y. Lim, R. A. Yeh, Y. Xu, M. N. Do, and M. Hasegawa-Johnson, "Time-frequency networks for audio super-resolution," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Calgary, Canada, April 2018.
3. M. Zehni, M. N. Do, and Z. Zhao, "Multi-segment reconstruction using invariant features," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, Calgary, Canada, April 2018.
4. V. Subramanian, B. Chidester, J. Ma, and M. N. Do, "Correlating cellular features with gene expression using CCA," *IEEE International Symposium on Biomedical Imaging (ISBI)*, 2018.
5. B. Chidester, M. N. Do, and J. Ma, "Discriminative bag-of-cells for imaging-genomics," *Pacific Symposium on Biocomputing*, 23, pp. 319-330, 2018.
6. T. Nguyen, A. Podkova, R. J. Miller, M. L. Oelze, and M. N. Do, "In-vivo study of quantitative ultrasound parameters in fatty rabbit livers," *IEEE International Ultrasonics Symposium (IUS)*, 2017.
7. E Rodola, et al., "SHREC17: Deformable shape retrieval with missing parts," *Eurographics Workshop on 3D Object Retrieval*, 2017.
8. C. Chen, J. Lu, D. K. Kwon, D. Moore, and M. N. Do, "Accelerated stereo matching for autonomous vehicles using an upright pinhole camera model," *Electronic Imaging*, (19), 18-21, 2017.
9. R. A. Yeh, J. Xiong, W. M. Hwu, M. N. Do, and A. G. Schwing, "Interpretable and globally optimal prediction for textual grounding using image concepts," *Neural Information Processing Systems (NIPS)*, pp. 1909-1919, 2017.
10. R. A. Yeh, C. Chen, T. Y. Lim, A. G. Schwing, M. Hasegawa-Johnson, and M. N. Do, "Semantic image inpainting with deep generative models," *IEEE Int. Conf. Computer Vision and Pattern Recognition (CVPR)*, 2017.

11. Y. Li, D. Min, M. N. Do, and J. Lu, "Fast guided global interpolation for depth and motion," *European Conference on Computer Vision (ECCV)*, pp. 370-385, Amsterdam, 2016.
12. K. Lin, N. Jiang, L. F. Cheong, M. N. Do, and J. Lu, "SEAGULL: seam-guided local alignment for parallax-tolerant image stitching," *European Conference on Computer Vision (ECCV)*, pp. 370-385, Amsterdam, 2016.
13. W. Y. Lin, S. Liu, N. Jiang, M. N. Do, P. Tan, and J. Lu, "RepMatch: Robust feature matching and pose for reconstructing modern cities," *European Conference on Computer Vision (ECCV)*, pp. 562-579, Amsterdam, 2016.
14. C. Chen, M. N. Do, and J. Wang, "Robust image and video dehazing with visual artifact suppression via gradient residual minimization," *European Conference on Computer Vision (ECCV)*, pp. 576-591, Amsterdam, 2016.
15. V. A. Nguyen and M. N. Do, "Deep learning based supervised hashing for efficient image retrieval," *IEEE International Conference on Multimedia and Expo (ICME)*, Seattle, WA, 2016.
16. V. A. Nguyen, M. N. Do, "Binary code learning with semantic ranking based supervision," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, 2016.
17. H. Wang, Y. Guo, M. N. Do, C. Zhang, C. Tu, "3D panorama reconstruction based on sitemap joining," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, 2016.
18. R. Yeh, M. Hasegawa-Johnson, and M. N. Do, "Stable and symmetric filter convolutional neural network," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, 2016.
19. G. P. Meyer, S. Alfano, and M. N. Do, "Improving face detection with depth," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Shanghai, China, 2016.
20. H. Majeed, T. H. Nguyen, M. E. Kandel, V. Macias, M. N. Do, A. K. Balla, and G. Popescu, "Automatic tissue segmentation of breast biopsies imaged by QPI," *SPIE Photonics West: BiOS*, San Francisco, CA, February 13-18, 2016.
21. H. Majeed, T. H. Nguyen, M. Kandel, K. Han, Z. Luo, V. Macias, K. Tangella, A. Balla, M. Do, and G. Popescu, "Towards quantitative automated histopathology of Breast Cancer using Spatial Light Interference Microscopy (SLIM)," *USCAP*, Seattle, WA, March 12-18, 2016.
22. T. H. Nguyen, S. Sridharan, V. Marcias, A. K. Balla, M. N. Do, and G. Popescu, "Automatic diagnosis system for prostate cancer using quantitative phase images and machine learning," *SPIE Photonics West: BiOS*, San Francisco, CA, February 13-18, 2016.
23. N. Dam, V. T. Nguyen, M. N. Do, A. D. Duong, M. T. Tran, "Realtime face verification with lightweight Convolutional Neural Networks," *Advances in Visual Computing*, pp. 420-430, 2015.
24. S. Liu, T.-T. Ng, K. Sunkavalli, M. N. Do, E. Shechtman, and N. Carr, "PatchMatch-based automatic lattice detection for near-regular textures", *IEEE Int. Conf. Computer Vision (ICCV)*, Santiago, Chile, Dec. 2015.
25. Y. Li, D. Min, M. S. Brown, M. N. Do, and J. Lu, "SPM-BP: Sped-up PatchMatch belief propagation for continuous MRFs," *IEEE Int. Conf. Computer Vision (ICCV)*, Santiago, Chile, Dec. 2015.

26. G. P. Meyer and M. N. Do, "3D GrabCut: Interactive foreground extraction for reconstructed 3D scenes," *Eurographics Workshop on 3D Object Retrieval (3DOR)*, 2015.
27. N.-J. Jiang, W.-Y. Lin, M. N. Do, and J. Lu, "Direct structure estimation for 3D reconstruction," *IEEE Int. Conf. Computer Vision and Pattern Recognition (CVPR)*, Boston, MA, Jun. 2015.
28. S. Liu, and M. N. Do, "Relighting from multiple color and depth images using matrix factorization," *IEEE International Conference on Image Processing (ICIP)*, Oct. 2014.
29. R. S. Pahwa, M. N. Do, T.-T. Ng, and B.-S. Hua, "Calibration of depth cameras using denoised depth images," *IEEE International Conference on Image Processing (ICIP)*, Oct. 2014.
30. W.-Y. Lin, M. Cheng, J. Lu, H. Yang, M. N. Do, and P. H. S. Torr, "Bilateral functions for global motion modeling," *Europe Conference on Computer Vision (ECCV)*, Zurich, Switzerland, Sep. 2014.
31. D. Jun, D. L. Jones, M. N. Do, "From fixed-point processors to android: A hybrid course for real-time DSP laboratory," *IEEE Digital Signal Processing and Signal Processing Education Meeting (DSP/SPE)*, Aug. 2013.
32. D. T. Vu, B. Chidester, J. Lu, and M. N. Do, "Scribble2focus: an interactive photo refocusing system based on mobile stereo imaging," *IEEE GlobalSIP Mobile Imaging Symposium*, Austin, US, Dec. 2013.
33. V.-A. Nguyen and M. N. Do, "Model-based complexity-aware coding for multiview video plus depth", *IEEE Int. Conf. on Image Processing (ICIP)*, Melbourne, Australia, Sep. 2013.
34. G. P. Meyer and M. N. Do, "Real-time 3D face modeling with a commodity depth camera," *IEEE International Conference on Multimedia and Expo (ICME)*, July 2013.
35. W. Eng, D. Min, V. Nguyen, J. Lu, and M. N. Do, "Gaze correction for 3D tele-immersive communication system," *IEEE IVMSIP Workshop on 3D Image/Video Technologies and Applications*, Seoul, Korea, Jun. 2013.
36. J. Lu, H. Yang, D. Min, and M. N. Do, "PatchMatch filter: Efficient edge-aware filtering meets randomized search for fast correspondence field estimation," *IEEE Int. Conf. Computer Vision and Pattern Recognition (CVPR)*, Portland, Oregon, Jun. 2013 (Oral paper).
37. V. H. Doan, V.-A. Nguyen, and M. N. Do, "Efficient view synthesis based error concealment method for multiview video plus depth," *IEEE Int. Symp. Circuits and Systems (ISCAS)*, Beijing, China, May 2013.
38. H. Q. Nguyen, S. Liu, and M. N. Do, "Subspace methods for computational relighting," *IS&T/SPIE Computational Imaging XI Conference*, San Francisco, Feb. 2013.
39. S. D. Babacan, S. Nakajima, and M. N. Do, "Probabilistic low-rank subspace clustering," *Neural Information Processing Systems (NIPS 2012)*, Lake Tahoe, USA, Dec. 2012.
40. S. D. Babacan, R. Molina, M. N. Do, A.K. Katsaggelos, "Bayesian blind deconvolution with general sparse image priors," *European Conference on Computer Vision (ECCV)*, Firenze, Italy, Oct. 2012.
41. V.-A. Nguyen, J. Vu, H. Yang, J. Lu, and M. N. Do, "ITEM: Immersive telepresence for entertainment and meeting with commodity setup," *Proc. ACM Int. Conf. Multimedia (MM)*, Nara, Japan, Oct. 2012.

42. V.-A. Nguyen, D. Min, and M. N. Do, "Efficient edge-preserving interpolation and in-loop filters for depth map compression," *IEEE Int. Conf. on Image Processing (ICIP)*, Orlando, USA, Sep. 2012.
43. C. M. Truong, T. D. Tran, T. L. Nguyen, M. Luong, M. N. Do, "Enhanced SWIFT acquisition with chaotic compressed sensing by designing the measurement matrix with hyperbolic-secant signals," *IEEE International Conference of Engineering in Medicine and Biology Society (EMBC)*, Aug. 2012.
44. M. Tallon, S. D. Babacan, J. Mateos, M. N. Do, R. Molina, and A. K. Katsaggelos, "Upsampling and denoising of depth maps via joint-segmentation", *European Signal Processing Conference (EU-SIPCO)*, pp. 245-249, Aug. 2012.
45. J. Lu, K. Shi, D. Min, L. Lin, and M. N. Do, "Cross-based local multipoint filtering," *Proc. IEEE Int. Conf. Computer Vision and Pattern Recognition (CVPR)*, Providence, Rhode Island, June 2012.
46. V. Nguyen, J. Lu, and M. N. Do, "Efficient video compression methods for a lightweight tele-immersive video chat system," *Proc. IEEE Int. Sym. Circuits and Systems (ISCAS)*, Seoul, Korea, May 2012.
47. S. D. Babacan, F. Lam, X. Peng, M. N. Do, Z.-P. Liang, "Interventional MRI with sparse sampling using union-of-subspaces," *IEEE International Symposium on Biomedical Imaging (ISBI): From Nano to Macro*, Barcelona, Spain, May 2012.
48. D. Min, J. Lu, V. Nguyen, and M. N. Do, "Weighted mode filtering and its applications to depth video enhancement and coding," *Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP)*, Kyoto, Japan, Mar. 2012.
49. T. H. Nguyen, R. K. Reddy, M. J. Walsh, M. Schulmericha, G. Popescu, M. N. Do, and R. Bhargava, "Denoising and deblurring of Fourier transform infrared spectroscopic imaging data," *SPIE Computational Imaging X*, San Francisco, USA, Jan. 2012.
50. D. B. Kubacki, H. Q. Bui, S. D. Babacan, and M. N. Do, "Registration and integration of multiple depth images using signed distance function," *SPIE Computational Imaging X*, San Francisco, USA, Jan. 2012.
51. K. Rupnow, Y. Liang, Y. Li, D. Min, M. Do, and Deming Chen, "High level synthesis of stereo matching: Productivity, performance, and software constraints," *International Conference on Field-Programmable Technology*, New Delhi, India, Dec. 2011.
52. J. Lu, V. Nguyen, Z. Niu, B. Singh, Z. Luo, and M. N. Do, "CuteChat: A lightweight tele-immersive video chat system," *ACM International Conference Multimedia (MM)*, Scottsdale, Arizona, Nov. 2011.
53. D. Min, J. Lu, and M. N. Do, "A revisit to cost aggregation in stereo matching: How far can we reduce its computational redundancy?" *IEEE International Conference Computer Vision (ICCV)*, Barcelona, Spain, Nov. 2011 (Oral paper).
54. S. D. Babacan, X. Peng, X.-P. Wang, M. Do, and Z.-P. Liang, "Reference-guided sparsifying transform design for compressive sensing MRI," *IEEE Engineering in Medicine and Biology Society Conference (EMBC)*, Boston, USA, Aug. 2011.
55. J. Lu, D. Min, R. S. Pahwa, and M. N. Do, "A revisit to MRF-based depth map super-resolution and enhancement," *IEEE International Conference Acoustics, Speech and Signal Processing (ICASSP)*, Prague, Czech Republic, May 2011, pp. 985-988.

56. P. V. Dinh, L.-T. Nguyen, T. D. Tran, H. V. Le, M. N. Do, "Fast image acquisition in magnetic resonance imaging by chaotic compressed sensing," *IEEE International Symposium on Biomedical Imaging*, Mar. 2011.
57. H. M. Nguyen, X. Peng, M. N. Do, and Z.-P. Liang, "Spatiotemporal denoising of MR spectroscopic imaging data by low-rank approximations," *IEEE International Symposium on Biomedical Imaging*, Mar. 2011.
58. H. M. Nguyen, J. P. Haldar, M. N. Do, and Z.-P. Liang, "Denoising of MR spectroscopic imaging data with spatial-spectral regularization," *IEEE International Symposium on Biomedical Imaging*, Apr. 2010.
59. A. Dapore, M. R. King, J. Harter, S. Sarwate, M. L. Oelze, J. A. Zagzebski, M. N. Do, T. J. Hall and W. D. O'Brien, Jr., "Analysis of human fibroadenomas using three-dimensional impedance maps," *IEEE International Ultrasonics Symposium*, Roma, 2009.
60. Y. M. Lu, M. N. Do and R. S. Laugesen, "Computable Fourier conditions for alias-free sampling and critical sampling," *International Conference on Sampling Theory and Applications (SAMPTA)*, Marseille, 2009.
61. S. Brady, M. N. Do, and R. Bhargava, "Reconstructing FT-IR spectroscopic imaging data with a sparse prior," *IEEE International Conference on Image Processing*, Cairo, Egypt, 2009.
62. Q. H. Nguyen, M. N. Do, and S. J. Patel, "Depth image-based rendering using low resolution depth," *IEEE International Conference on Image Processing*, Cairo, Egypt, 2009.
63. J. Blackburn and M. N. Do, "Two dimensional geometric lifting," *IEEE International Conference on Image Processing*, Cairo, Egypt, 2009.
64. H. M. Nguyen, Z. J. Gahvari, J. P. Haldar, M. N. Do, and Z.-P. Liang, "Cramer-Rao bound analysis of echo time selection for 1H-MR spectroscopy," *IEEE Engineering in Medicine and Biology Society Conference (EMBC)*, Minneapolis, 2009.
65. Q. H. Nguyen, M. N. Do, and S. J. Patel, "Depth image-based rendering from multiple cameras with 3D propagation algorithm," *Int. Conf. on Immersive Telecommunications*, Berkeley, CA, May 2009.
66. M. Maitre and M. N. Do, "Shape-adaptive wavelet encoding of depth maps," *Picture Coding Symposium*, Chicago, 2009.
67. K. L. Law, R. Fossum, and M. N. Do, Multidimensional signal acquisition from multichannel acquisition, *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Taipei, Taiwan, 2009.
68. K. L. Law, R. Fossum, and M. N. Do, Generic invertibility of multidimensional FIR multirate systems and filter banks, *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Taipei, Taiwan, 2009.
69. M. Maitre and M. N. Do, Joint encoding of the depth image based representation using shape-adaptive wavelets, *IEEE International Conference on Image Processing*, San Diego, 2008.
70. H. T. Nguyen and M. N. Do, Robust multichannel sampling, *IEEE International Conference on Image Processing*, San Diego, 2008.

71. M. Maitre, Y. Shinagawa, and M. N. Do, Symmetric multi-view stereo reconstruction from planar camera arrays, *IEEE Conference on Computer Vision and Pattern Recognition*, Anchorage, Alaska, 2008.
72. M. N. Do and C. N. H. La, "Tree-based majorize-minimize algorithm for compressed sensing with sparse-tree prior," *Computational Advances in Multi-Sensor Adaptive Processing*, U.S. Virgin Islands, 2007.
73. C. Nguyen, R. L. Morrison, and M. N. Do, "Reduction of spatial sampling requirement in sound-based synthesis," *Computational Advances in Multi-Sensor Adaptive Processing*, U.S. Virgin Islands, 2007.
74. Y. Lu and M. N. Do, "A computational procedure for finding minimum sampling lattices of a given frequency support in multidimensions," *IEEE International Conference on Image Processing*, Sep. 2007.
75. M. Maitre, Y. Shinagawa, and M. N. Do, "Rate-distortion optimal depth maps in the wavelet domain for free-viewpoint rendering," *IEEE International Conference on Image Processing*, Sep. 2007.
76. R.L. Morrison, Jr., M. Jacob, and M. N. Do, "Multichannel estimation of coil sensitivities in parallel MRI," *IEEE International Symposium on Biomedical Imaging*, Apr. 2007.
77. A. L. da Cunha, M. N. Do, and M. Vetterli, "A stochastic model for video and its information rates," *IEEE Data Compression Conference, Snowbird*, Mar. 2007.
78. N. Mueller, Y. Lu, and M. N. Do, "Image interpolation using multiscale geometric representations," *SPIE Conference on Electronic Imaging*, San Jose, Jan. 2007.
79. H. T. Nguyen and M. N. Do, "Signal reconstruction from a periodic nonuniform set of samples using H_∞ optimization," *SPIE Conference on Electronic Imaging*, San Jose, Jan. 2007.
80. Y. Lu and M. N. Do, "Video processing using the 3-dimensional surfacelet transform," *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, Nov. 2006 (invited).
81. Y. Lu and M. N. Do, "Multidimensional nonsubsampling hourglass filter banks: geometry of passband support and filter design," *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, Nov. 2006 (invited).
82. Y. Lu and M. N. Do, "A new contourlet transform with sharp frequency localization," *IEEE International Conference on Image Processing*, Atlanta, Oct. 2006 (Most Innovative Paper Award).
83. A. L. da Cunha, M. N. Do, and M. Vetterli, "On the information rate of the plenoptic function," *IEEE International Conference on Image Processing*, Atlanta, Oct. 2006.
84. R. L. Morrison, Jr. and M. N. Do, "Multichannel autofocus algorithm for synthetic aperture radar," *IEEE International Conference on Image Processing*, Atlanta, Oct. 2006.
85. H. T. Nguyen and M. N. Do, "Error analysis for image-based rendering with depth information," *IEEE International Conference on Image Processing*, Atlanta, Oct. 2006.
86. C. La and M. N. Do, "Tree-based orthogonal matching pursuit algorithm for signal reconstruction," *IEEE International Conference on Image Processing*, Atlanta, Oct. 2006 (invited).

87. H. M. Nguyen, R. L. Morrison, Jr., B. P. Sutton, and M. N. Do, "Joint estimation in MRI using harmonic retrieval methods," *IEEE International Symposium on Biomedical Imaging*, Arlington, USA, Apr. 2006.
88. M. N. Do, D. Marchand-Maillet, and M. Vetterli, "On the bandlimitedness of the plenoptic function," *IEEE International Conference on Image Processing*, Genoa, Sep. 2005.
89. R. L. Morrison, and M. N. Do, "A multichannel approach to metric-based SAR autofocus," *IEEE International Conference on Image Processing*, Genoa, Sep. 2005.
90. J. Zhou, A. L. Cunha, and M. N. Do, "Nonsubsampled contourlet transform: construction and application in enhancement," *IEEE International Conference on Image Processing*, Genoa, Sep. 2005.
91. A. L. Cunha, J. Zhou, and M. N. Do, "Nonsubsampled contourlet transform: filter design and application in image denoising," *IEEE International Conference on Image Processing*, Genoa, Sep. 2005.
92. Y. Huang, I. Pollak, M. N. Do, and C. A. Bouman, "Optimal representations in multitree dictionaries with application to compression," *IEEE International Conference on Image Processing*, Genoa, Sep. 2005.
93. Y. Lu and M. N. Do, "3-D directional filter banks and surfacelets," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2005.
94. A. L. Cunha and M. N. Do, "Linear-phase filter design for directional multiresolution decompositions," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2005.
95. C. La and M. N. Do, "Signal reconstruction using sparse tree representations," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2005.
96. J. Zhou and M. N. Do, "Two-dimensional orthogonal filter banks with directional vanishing moments," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2005.
97. J. Zhou and M. N. Do, "Multidimensional oversampled filter banks," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2005.
98. A. L. Cunha and M. N. Do, "Bi-orthogonal filter banks with directional vanishing moments," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Philadelphia, Mar. 2005 (Best Student Paper Award).
99. H. T. Nguyen and M. N. Do, "Image-based rendering with depth information using the propagation algorithm," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Philadelphia, Mar. 2005 (Best Student Paper Award).
100. J. Zhou and M. N. Do, "Multichannel FIR exact deconvolution in multiple variables," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Philadelphia, Mar. 2005.
101. Y. Lu and M. N. Do, "The finer directional wavelet transform," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Philadelphia, Mar. 2005.
102. M. N. Do, "Toward sound-based synthesis: the far-field case," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Montreal, Canada, May 2004.

103. Y. Lu and M. N. Do, "A geometrical approach to sampling signals with finite rate of innovation," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Montreal, Canada, May 2004.
104. Y. Huang, I. Pollak, C. A. Bouman, and M. N. Do, "New algorithms for best local cosine basis search," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Montreal, Canada, May 2004.
105. Y. Huang, I. Pollak, M. N. Do, and C. A. Bouman, "Optimal tilings and best basis search in large dictionaries," *Asilomar Conference on Signals, Systems, and Computers*, Nov. 2003.
106. R. L. Morrison, Jr., D. C. Munson, Jr., and M. N. Do, "Avoiding local minima in entropy-based SAR autofocus," *IEEE Workshop on Statistical Signal Processing*, St. Louis, Sep. 2003.
107. D. D.-Y. Po and M. N. Do, "Directional modeling of images using the contourlet transform," *IEEE Workshop Statistical Signal Processing*, St. Louis, Sep. 2003.
108. M. N. Do, "Contourlets and sparse image representations," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2003. (invited)
109. Y. Lu and M. N. Do, "CRISP contourlets: a critically sampled directional multiresolution image representation," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2003.
110. J. Zhou, M. N. Do, and J. Kovacevic, "New design of orthogonal FIR filter bank using the Cayley transform," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2003.
111. D. Xu and M. N. Do, "Anisotropic 2-D wavelet packets and rectangular tiling: theory and fast algorithms," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2003.
112. D. Po and M. N. Do, "Directional multiscale statistical modeling of images," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, CA, Aug. 2003. (invited)
113. I. Atkinson, F. Kamalabadi, D. Jones, and M. N. Do, "Adaptive wavelet thresholding for multichannel estimation," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2003.
114. M. N. Do and M. Vetterli, "Contourlets: a new directional multiresolution image representation," *Asilomar Conference on Signals, Systems, and Computers*, Nov. 2002. (invited)
115. M. N. Do and M. Vetterli, "Contourlets: a directional multiresolution image representation," *IEEE International Conference on Image Processing*, Rochester, Sep. 2002.
116. M. N. Do, P. L. Dragotti, R. Shukla and M. Vetterli, "On compression of two-dimensional piecewise smooth functions," *IEEE International Conference on Image Processing, Special Session on Image Processing and Non-Linear Approximation*, Thessaloniki, Greece, Oct. 2001. (invited)
117. M. N. Do and M. Vetterli, "Pyramidal directional filter banks and curvelets," *IEEE International Conference on Image Processing*, Thessaloniki, Greece, Oct. 2001.
118. M. N. Do and M. Vetterli, "Frame reconstruction of the Laplacian pyramid," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Salt Lake City, May 2001.

119. M. N. Do and M. Vetterli, "New non-separable transform with application to image compression," *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Salt Lake City, May 2001.
120. M. N. Do and M. Vetterli, "Texture characterization and retrieval using steerable hidden Markov models," *MSRI Workshop on Nonlinear Estimation and Classification*, Berkeley, Mar. 2001.
121. R. Shukla, M. N. Do and M. Vetterli, "Best adaptive tiling in a rate-distortion sense," *MSRI Workshop on Nonlinear Estimation and Classification*, Berkeley, Mar. 2001.
122. Z. Pecenovic, M. N. Do, M. Vetterli and P. Pu, "Integrated browsing and searching of large image collections," *International Conference on Visual Information Systems*, pp. 279-289, Lyon, France, Nov. 2000.
123. M. N. Do and M. Vetterli, "Orthonormal finite ridgelet transform for image compression," *IEEE International Conference on Image Processing*, vol. II, pp. 367-370, Vancouver, Canada, Sep. 2000.
124. M. N. Do and M. Vetterli, "Texture similarity measurement using Kullback-Leibler distance on wavelet subbands," *IEEE International Conference on Image Processing*, vol. III, pp. 730-733, Vancouver, Canada, Sep. 2000.
125. M. N. Do and M. Vetterli, "Image denoising using orthonormal finite ridgelet transform," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2000.
126. M. N. Do, A. C. Lozano and M. Vetterli, "Rotation invariant texture retrieval using steerable wavelet-domain hidden Markov models," *SPIE Conference on Wavelet Applications in Signal and Image Processing*, San Diego, Aug. 2000.
127. M. N. Do and M. Vetterli, "Orthonormal finite ridgelet transform for image denoising and compression," *NSF-CBMS Conference on Interactions of Harmonic Analysis, Statistical Estimation and Data Compression*, University of Missouri - St. Louis, May 2000.
128. M. N. Do and M. Vetterli, "Wavelet-based texture characterization with application to content-based image retrieval," *Wavelets, Harmonic Analysis and Image Processing Workshop*, Technische Universität München, Germany, Dec. 1999.
129. M. Do, S. Ayer and M. Vetterli, "Invariant image retrieval using wavelet maxima moment," *International Conference on Visual Information and Information Systems*, pp. 451-458, Amsterdam, The Netherlands, June 1999.
130. Z. Pecenovic, M. Do, S. Ayer and M. Vetterli, "New methods for image retrieval," *ICPS'98 Congress on Exploring New Tracks in Imaging*, pp. 242-246, Antwerp, Belgium, Sep. 1998.
131. M. Do, S. Ayer and M. Vetterli, "Invariant image retrieval using wavelet maxima moment," *Wavelet and Applications Workshop - Swiss Science Foundation*, Ascona, Switzerland, Oct. 1998.
132. D. Tran, M. Do, M. Wagner and T.V. Le, "A proposed decision rule for speaker identification based on a posteriori probability," *Workshop on Speaker Recognition and Its Commercial and Forensic Applications*, pp. 85-88, Avignon, France, Apr. 1998.
133. M. Do and M. Wagner, "Speaker recognition with small training requirements using a combination of VQ and DHMM," *Workshop on Speaker Recognition and Its Commercial and Forensic Applications*, pp. 169-172, Avignon, France, Apr. 1998.

Invited Talks

1. “Visual Correspondences: Modern Techniques and Applications,” University of Nevada at Reno, Oct. 2015.
2. “Visual Correspondences: Taxonomy, Modern Approaches and Ubiquitous Applications,” Half-day tutorial in IEEE Int. Conf. Multimedia and Expo (ICME), Torino, Italy, Jun. 2015.
3. “Image Filtering 2.0: Efficient Edge-Aware Filtering and Their Applications,” Half-day tutorial in IEEE Int. Conf. Image Processing (ICIP), Melbourne, Australia, Sep. 2013.
4. “Immersive Visual Communication,” Department of Electrical Engineering, Pennsylvania State University, Apr. 2013.
5. “Immersive Visual Communication,” UIUC Beckman Institute Director’s Seminar, Nov. 2012.
6. “Immersive Visual Communication with Depth,” Microsoft Research Faculty Summit, July 2012.
7. “Immersive Visual Communication with Depth”, Global 3D Technology Forum, Seoul, Korea, Oct. 2011.
8. “Immersive Visual Communication with Depth”, Microsoft Research, Redmond, June 2011.
9. “Immersive Visual Communication with Depth Cameras and Parallel Computing,” National University of Singapore, Mar. 2010.
10. “Using Computational Power to Overcome Physical Limitations in Imaging,” Universal Parallel Computing Research Center, UIUC, May 2009.
11. “Imaging for remote reality and computational photography,” Agency for Science, Technology and Research (A*STAR), Singapore, Feb. 2009.
12. “Tree-based majorize-minimize algorithm for signal reconstruction with sparse-tree prior,” Information Theory and Applications Workshop, University of California at San-Diego, Jan. 2008.
13. “Sampling signals from a union of subspaces,” Department of Mathematics, Vanderbilt University, Nov. 2007.
14. “Sampling signals from a union of subspaces,” SIAM Conference on Imaging Science, Minneapolis, May 2006.
15. “Signal reconstruction from limited number of measurements: theory and algorithms,” Bernoulli Center, Swiss Federal Institute of Technology, Lausanne, Switzerland, Mar. 2006.
16. “Surfacelets and directional filter banks in N-D,” Applied and Computational Mathematics Department, California Institute of Technology, Feb. 2006.
17. “Beyond wavelets: multiscale geometric analysis,” Department of Electrical and Computer Engineering, Carnegie Mellon University, Apr. 2005.
18. “Discrete geometrical image processing using contourlets,” Multiscale Geometry and Analysis in High Dimensions, Institute for Pure and Applied Mathematics (IPAM), University of California at Los Angeles, Sep. 2004.

19. "Discrete geometrical image processing: constructions and algorithms," Summer School, Institute for Mathematical Research, Swiss Federal Institute of Technology Zürich, Sep. 2004.
20. "Contourlets: construction, approximation, and compression," SIAM Conference on Imaging Science, Salt Lake City, May 2004.
21. "Beyond wavelets: directional multiresolution image representation," Department of Electrical and Computer Science, University of California at Berkeley, Nov. 2003.
22. "Beyond wavelets: directional multiresolution image representation," School of Electrical and Computer Engineering, Purdue University, Apr. 2003.
23. "A filter bank approach for directional multiresolution image representation," Institute for Pure and Applied Mathematics (IPAM), University of California at Los Angeles, Jan. 2003.
24. "Contourlets: a new directional multiresolution image representation," Center for Imaging Science Seminar Series, The Johns Hopkins University, Apr. 2002.
25. "Directional bases and frames for image representation," SIAM Conference on Imaging Science, Boston, Mar. 2002.