Yue M. Lu

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Research Interests

Mathematics of high-dimensional information processing and learning; random matrix theory; universality

Career History

Gordon McKay Professor of Electrical Engineering and of Applied Mathematics (01/2019 – present) John A. Paulson School of Engineering and Applied Sciences Harvard University

Associate Professor of Electrical Engineering (01/2016 - 12/2018)

John A. Paulson School of Engineering and Applied Sciences Harvard University

Assistant Professor of Electrical Engineering (11/2010 – 12/2015) John A. Paulson School of Engineering and Applied Sciences Harvard University

Postdoctoral Researcher (09/2007 – 10/2010) School of Computer and Communication Sciences École Polytechnique Fédérale de Lausanne (EPFL), Switzerland Advisor: Martin Vetterli

Education

University of Illinois at Urbana-Champaign, ${\rm Urbana},\,{\rm IL}$

Ph.D. in Electrical and Computer Engineering, 2007 Thesis title: Multidimensional Geometrical Signal Representation: Constructions and Applications Advisor: Minh N. Do

M.S. in Mathematics, 2007 Thesis title: A Sampling Theory for Signals from a Union of Subspaces Advisor: Richard S. Laugesen

Shanghai Jiao Tong University, Shanghai, China B.E./M.E., 2002, both in Electrical Engineering

Selected Awards and Honors

IEEE Signal Processing Society Distinguished Lecturer, 2022 - 2023

Best Student Paper Award, First Prize (senior author) The 7th IEEE CAMSAP Workshop, 2017

ECE Illinois Young Alumni Achievement Award Department of ECE, University of Illinois at Urbana-Champaign, 2015

Best Student Paper Award (senior author) IEEE Global Conference on Signal and Information Processing (GlobalSIP), Atlanta, 2014

Best Student Paper Award (senior coauthor) IEEE International Conference on Acoustics, Speech and Signal Processing, Prague, 2011

Best Student Paper Award IEEE International Conference on Image Processing, San Antonio, 2007

Most Innovative Paper Award IEEE International Conference on Image Processing, Atlanta, 2006

Best Student Presentation Award SIAM Southeastern-Atlantic Section Conference, Memphis, 2007

Sundaram Seshu International Student Fellowship Department of ECE, University of Illinois at Urbana-Champaign, 2007

Frederic T. and Edith F. Mavis College of Engineering Fellowship University of Illinois at Urbana-Champaign, 2006

Intel Graduate Research Mentor Award for Supervising Underrepresented Students in Engineering College of Engineering, University of Illinois at Urbana-Champaign, 2006

Patents

- US Patent 9,001,231, "Image acquisition using oversampled one-bit Poisson statistics", Y. M. Lu, F. Yang and M. Vetterli, 04/07/2015.
- [2] US Patent 8,787,501, "Distributed sensing of signals linked by sparse filtering", M. Vetterli, A. Hormati, O. Roy and Y. M. Lu, 07/22/2014.
- [3] US Patent 8,462,238, "Camera design for the simultaneous capture of near-infrared and visible images", C. Fredembach, Y. M. Lu and S. E. Süsstrunk, 06/11/2013.
- [4] US Patent 8,451,921, "Method and an apparatus for adaptively learning a sparse impulse response of a continuous channel", M. Vetterli, Y. M. Lu and M. McCormick, 05/28/2013.
- US Patent 8,319,855, "Method, apparatus and system for image acquisition and conversion", F. Yang, Y. M. Lu and M. Vetterli, 11/27/2012.
- [6] US Patent 8,170,642, "Method and system for lymph node detection using multiple MR sequences", M. Yan, Y. Lu and M. Requardt, 05/01/2012.

Professional Activities and Services

Member of the Sensor Array and Multichannel (SAM) Technical Committee IEEE Signal Processing Society (01/2022 - 12/2024)

Member of the Signal Processing Theory and Methods (SPTM) Technical Committee IEEE Signal Processing Society (01/2016 - 12/2018, 01/2019 - 12/2021)

Member of the IEEE SP Society Big Data Special Interest Group (SIG) IEEE Signal Processing Society (01/2019 – 12/2019)

Member of the IEEE Machine Learning for Signal Processing (MLSP) Technical Committee IEEE Signal Processing Society (01/2019 – 12/2021)

Member of the Image, Video, and Multidimensional Signal Processing (IVMSP) Technical Committee IEEE Signal Processing Society (01/2015 - 12/2017)

Associate Editor, IEEE Transactions on Signal Processing (09/2018 - 08/2024)

Associate Editor, IEEE Transactions on Image Processing (12/2014 - 05/2018)

Chair of the Management Committee of the IEEE Transactions on Artificial Intelligence (01/2022 - 12/2023)

Member of the Management Committee of the IEEE Transactions on Artificial Intelligence (01/2020 - 12/2021)

TPC Co-Chair: IEEE Statistical Signal Processing Workshop (2022)

Area Chair: NeurIPS (2021, 2022)

Conference Co-Chair: SPIE Conference on Wavelets and Sparsity (2017, 2019)

Area Chair: IEEE International Conference on Image Processing (2013, 2015, 2016)

Local Arrangement Chair: IEEE International Conference on Computational Photography (2013)

IEEE SPS Liaison: 13th International Conference on Sampling Theory and Applications (2019)

Tutorial Instructor: IEEE International Conference on Acoustics, Speech and Signal Processing (2018)

Program Committee: IEEE International Symposium on Information Theory (2021)

Program Committee: IEEE Data Science Workshop (2019)

Program Committee: IEEE Global Conference on Signal and Information Processing (2018, 2019)

Program Committee: European Signal Processing Conference (2018)

Program Committee: IEEE Statistical Signal Processing Workshop (2016, 2018, 2020)

Program Committee: IEEE Image, Video and Multidimensional Signal Processing Workshop (2016, 2018)

Program Committee: IEEE International Conference on Acoustics, Speech and Signal Processing (2012 – 2020)

Program Committee: IEEE International Conference on Image Processing (2012 – 2019)

Program Committee: SPIE Wavelets and Sparsity (2013, 2015, 2017)

Professional Activities and Services (continued)

Program Committee: IEEE Global Conference on Signal and Information Processing (2013, 2014, 2015)

NSF Panel Members: CISE CCF review panels

Journal and Conference Reviews: IEEE Transactions on Information Theory, IEEE Transactions on Signal Processing, IEEE Transactions on Image Processing, IEEE Signal Processing Letters, IEEE Signal Processing Magazine, Applied and Computational Harmonic Analysis, Optics Express, COLT, ICML, Annals of Statistics

Member of Ph.D. viva jury at École Normale Supérieure, Paris: Marylou Gabrié (09/2019)

Member of Ph.D. thesis jury at EPFL: Zafer Dogan (03/2015, as an external expert) Zahra Sadeghipoor Kermani (08/2015, as a thesis co-director)

Senior Member, IEEE

Selected Harvard Activities

Committee on Higher Degrees (CHD) for Engineering Sciences (08/2017 - 06/2019)

Director of Graduate Studies for Applied Mathematics (01/2017 - 06/2017)

Committee on Higher Degrees (CHD) for Applied Mathematics (01/2017 - 06/2017)

Co-Director of Undergraduate Studies for Engineering Sciences (with Evelyn Hu, 09/2011 – 07/2012)

Freshman Advisor for Harvard College (09/2011 - 07/2012). Advised 4 students.

SEAS committees: Engineering science committee on undergraduate education (2011–2012), Committee on the new EE concentration (2011–2012), Undergraduate curriculum and education (2011–2012), EE committee on undergraduate studies (2012–2013), SEAS admissions and scholarships committee (2011–2015, chair of EE sub-committee, 2015, 2019–2020, 2020–2021), Faculty search committee: CS systems (2011 – 2012, 2016 – 2017), Faculty search committee: EE systems (2012 – 2015), Allston Working Group – Classrooms (2015 – 2016), AM Faculty Search Committee (2020 – 2021)

FAS committee: Allston course scheduling committee task force (2014 - 2015), standing committee on the S.M. degree in data science (2019-2020, 2020-2021, 2021-2022)

Faculty Organizer of Harvard EE seminar series (2010 – 2014, spring 2017)

Ph.D. thesis committee:

Jake Marcinek (Mathematics, Ph.D., 2020) Miriam Cha (Computer Science, Ph.D., 2019) Benjamin Landon (Mathematics, Ph.D., 2018) Ian Weiner (Engineering Sciences, Ph.D., 2016) Jacob Sanders (Chemical Physics, Ph.D., 2016) Ioannis Gkioulekas (Engineering Sciences, Ph.D., 2016) Ving Xiong (Engineering Sciences, Ph.D., 2015) Youngjune Gwon (Computer Science, Ph.D., 2015) Steve Tarsa (Computer Science, Ph.D., 2015) Kevin Dale (Computer Science, Ph.D., 2012) Seunghoon Nam (Engineering Sciences, Ph.D., 2012) Yongjun Kwak (Engineering Sciences, Ph.D., 2012) Jung Ook Hong (Engineering Sciences, Ph.D., 2012)

Selected Harvard Activities (continued)

Ayan Chakrabarti (Engineering Sciences, Ph.D., 2011)

Committee Member on Ph.D. qualifying exams:

Jiaze Qiu (Statistics), 2022 Andrew Sabot (Computer Science), 2022 Tianpeng Zhang (Applied Mathematics), 2021 Madeleine Barowsky (Computer Science), 2021 Zhaolin Ren (Applied Mathematics), 2021 Blake Bordelon (Applied Mathematics), 2020 William Qian (Computer Science), 2019 Xin Chen (Engineering Sciences), 2019 Preetum Nakkiran (Computer Science), 2018 Yipei Guo (Biophysics), 2018 Jialiang Wang (Computer Science), 2017 Svilen Kanev (Computer Science), 2015 Emma Alexander (Computer Science), 2015 Jie Ding (Engineering Sciences), 2014 Kevin Thompson (Applied Mathematics), 2014 Ian Weiner (Engineering Sciences), 2014 Yohsuke Miyamoto (Engineering Sciences), 2013 Kevin Chen (Computer Science), 2012 Ying Xiong (Engineering Sciences), 2012 Thiago Costa (Computer Science), 2011 Ioannis Gkioulekas (Engineering Sciences), 2011 Xudong Chen (Engineering Sciences), 2011 Youngjune Gwon (Computer Science), 2011 Yuanchen Zhu (Computer Science), 2011 John Lai (Computer Science), 2011

Teaching, Education, and Advising

ES 150: Introduction to Probability with Engineering Applications (Harvard SEAS, undergraduate)

This undergraduate course introduces students to probability theory and statistics, and their applications in network analysis, communications, signal processing, and other engineering problems.

- Spring 2011 (Enrollment: 11, course rating: 4.2/5.0, instructor rating: 4.1/5.0)
 Spring 2012 (Enrollment: 21, course rating: 4.5/5.0, instructor rating: 4.7/5.0)
 Spring 2013 (Enrollment: 22, course rating: 3.8/5.0, instructor rating: 4.4/5.0)
 Spring 2014 (Enrollment: 24, course rating: 4.1/5.0, instructor rating: 4.8/5.0)
 Spring 2015 (Enrollment: 38, course rating: 4.5/5.0, instructor rating: 4.8/5.0)
 Spring 2017 (Enrollment: 54, course rating: 4.2/5.0, instructor rating: 4.5/5.0)
 Spring 2018 (Enrollment: 28, course rating: 3.8/5.0, instructor rating: 4.7/5.0)
- Spring 2019 (Enrollment: 18, course rating: 4.7/5.0, instructor rating: 4.9/5.0)
- Spring 2020 (Enrollment: 22, no numerical course ratings were given for this semester per Harvard policy)

Spring 2021 (Enrollment: 12, course rating: 4.4/5.0, instructor rating: 4.9/5.0)

Spring 2022 (Enrollment: 26, course rating: 4.3/5.0, instructor rating: 4.9/5.0)

ES 155: Systems and Control (Harvard SEAS, undergraduate)

This course provides an introduction to feedback systems and control. The focus is on the basic principles of feedback and its use as a tool for altering or inferring the dynamics of systems under uncertainty.

Fall 2020 (Enrollment: 23, co-taught with Na Li, course rating: 4.1/5.0, instructor rating: 4.8/5.0)

Fall 2021 (Enrollment: 27, course rating: 4.3/5.0, instructor rating: 4.5/5.0)

Teaching, Education, and Advising (continued)

ES 255: Statistical Inference with Engineering Applications (Harvard SEAS, graduate)

This is a graduate course on statistical detection and estimation theory. It covers topics such as hypothesis testing, optimal linear and non-linear estimation, maximum likelihood and Bayes approaches, asymptotic methods in statistics, Wiener and Kalman filtering, and Markov chain Monte-Carlo methods.

- Fall 2011 (Enrollment: 6, course rating: 4.7/5.0, instructor rating: 4.8/5.0)
- Fall 2012 (Enrollment: 8, course rating: 4.9/5.0, instructor rating: 5.0/5.0)
- Fall 2013 (Enrollment: 4, course rating: 4.8/5.0, instructor rating: 4.8/5.0)

Fall 2017 (Enrollment: 12, course rating: 4.8/5.0, instructor rating: 5.0/5.0)

ES 254/AM 254: Information Processing and Statistical Physics (Harvard SEAS, graduate)

I developed this new graduate-level course on analyzing asymptotics of large random systems and algorithms using tools developed in statistical mechanics. Topics covered include large deviations techniques, high-dimensional graphical models, Bethe free energy, mean-field analysis, the replica method, TAP and cavity equations, and propagation of chaos.

Fall 2015 (Enrollment: 16, course rating: 4.4/5.0, instructor rating: 4.7/5.0) Fall 2016 (Enrollment: 9, course rating: 4.7/5.0, instructor rating: 5.0/5.0) Fall 2018 (Enrollment: 15, course rating: 4.5/5.0, instructor rating: 4.8/5.0)

Advanced Signal Processing: Wavelets and Applications (EPFL, graduate)

I taught this graduate-level signal processing course at EPFL in Spring 2009 and Spring 2010. It covers topics such as sampling and reconstruction on shift-invariant subspaces, perfect-reconstruction filter banks, multirate systems, and multiresolution analysis.

Supervising undergraduate research (16 in total): Harvard College (2), UIUC (5, supported by the Intel Undergraduate Scholar Program), Zhejiang University (1), Tsinghua University (3), Peking University (1), UESTC (1), ENSTA-ParisTech (1), UTEC (1), EPFL (1)

Current group members:

Postdoctoral fellows: Dr. Rishabh Dudeja and Dr. Jorio Cocola Graduate students: Weiyu Li (G3), and Xiaomin Li (G2)

Alumni of my research group:

Dr. Hong Hu (Ph.D., May 2022) Now: Postdoctoral Fellow, Wharton Department of Statistics and Data Science, University of Pennsylvania

Dr. Oussama Dhifallah (Ph.D., May 2022) Now: Data Scientist, Microsoft

Dr. Kyle Luh (Postdoctoral Fellow, 07/2019 – 08/2020) Now: Assistant Professor, Department of Mathematics, University of Colorado Boulder

Dr. Junjie Ma (Postdoctoral Fellow, 08/2019 – 07/2020) Now: Assistant Professor, Institute of Computational Mathematics, Chinese Academy of Sciences

Dr. Chuang Wang (Postdoctoral Fellow, 02/2015 – 08/2019) Now: Associate Professor, Institute of Automation, Chinese Academy of Sciences

Dr. Wangyu Luo (Ph.D., May 2019) Now: Developer at Five Rings Capital, NYC

Dr. Zafer Dogan (Postdoctoral Fellow, 09/2016 – 02/2018) Now: Assistant Professor at Koç University, Turkey.

Dr. Ariana Minot (Ph.D., May 2017, co-supervised with Prof. Na Li) Now: Member of Technical Staff at MIT Lincoln Laboratory

Dr. Chenhui Hu (Ph.D., May 2016, co-supervised with Prof. Quanzheng Li at Harvard MGH) Now: Data Scientist at Microsoft New England

Dr. Ameya Agaskar (Ph.D., May 2015) Now: Member of Technical Staff at MIT Lincoln Laboratory

Teaching, Education, and Advising (continued)

Dr. Stanley Chan (Postdoctoral Fellow, 01/2012-06/2014) Now: Associate Professor of EE and Statistics at Purdue University

Andrés Ruiz (Masters degree in EE, 08/2011 - 01/2013) Now: Hardware Design Engineer at Apple Inc.

Publications

Preprints	
[J49-preprint]	R. Dudeja, S. Sen, and Y. M. Lu, "Spectral universality of regularized linear regression with nearly deterministic sensing matrices," submitted, 2022. (arXiv:2208.02753 [cs.IT])
[J48-preprint]	R. Dudeja, Y. M. Lu and S. Sen, "Universality of approximate message passing with semi-random matrices," submitted, 2022. (arXiv:2204.04281 [math.PR])
[J47-preprint]	H. Hu and Y. M. Lu, "Sharp asymptotics of kernel ridge regression beyond the linear regime," submitted, 2022 (arXiv:2205.06798 [cs.LG])
[J46-preprint]	Y. M. Lu and H. T. Yau, "An equivalent principle for the spectrum of random inner-product kernel matrices," submitted, 2022. (arXiv:2205.06308 [math.PR])
Journal and Hi	ighly Selective Conference
[J45]	H. Hong and Y. M. Lu, "Universality Laws for High-Dimensional Learning with Random Features," <i>IEEE Transactions on Information Theory</i> , in press, 2022. (arXiv:2009.07669 [cs.IT])
[J44]	H. Hu and Y. M. Lu, "Asymptotics and optimal designs of SLOPE for sparse linear regression," <i>IEEE Transactions on Information Theory</i> , in press, 2022. (arXiv:1903.11582 [cs.IT])
[J43]	B. Cakmak, Y. M. Lu. and M. Opper, "Analysis of random sequential message passing algorithms for approximate inference," <i>Journal of Statistical Mechanics: Theory and Experiments</i> , 073401, 2022. (arXiv:2202.08198 [cs.LG])
[J42]	Y. M. Lu, "Householder Dice: A Matrix-Free Algorithm for Simulating Dynamics on Gaussian and Random Orthogonal Ensembles," <i>IEEE Transactions on Information Theory</i> , vol. 67, no. 12, 2021. (arXiv:2101.07464 [cs.IT])
[J41]	O. Dhifallah and Y. M. Lu, "On the Inherent Regularization Effects of Noise Injection Dur- ing Training," International Conference on Machine Learning (ICML), 2021. (arXiv:2102.07379 [cs.LG]) (Spotlight presentation)
[J40]	A. Maillard, F. Krzakala, Y. M. Lu and L. Zdeborova, "Construction of optimal spectral meth- ods in phase retrieval," <i>Conference on Mathematical and Scientific Machine Learning</i> , 2021. (arXiv:2012.04524 [cs.IT])
[J39]	O. Dhifallah and Y. M. Lu, "Phase Transitions in Transfer Learning for High-Dimensional Perceptrons," <i>Entropy, Special Issue "The Role of Signal Processing and Information Theory on Modern Machine Learning</i> ", vol. 23, no. 4, 2021. (arXiv:2101.01918 [cs.LG])

[J38] H. Hu and Y. M. Lu, "The limiting Poisson law of massive MIMO detection with box relaxation," *IEEE Journal on Selected Areas in Information Theory, Special Issue on Estimation and Inference*, vol. 1, no. 1, Nov. 2020. (arXiv:2006.08416 [cs.IT])

[J37]	B. Aubin, Y. M. Lu, F. Krzakala, and L. Zdeborová, "Generalization error in high-dimensional perceptrons: Approaching Bayes error with convex optimization," <i>Conference on Neural Information Processing Systems (NeurIPS)</i> , 2020. (arXiv:2006.06560 [stat.ML])
[J36]	F. Mignacco, F. Krzakala, Y. M. Lu and L. Zdeborová, "The role of regularization in classifica- tion of high-dimensional noisy Gaussian mixture,", <i>Proc. International Conference on Machine Learning (ICML)</i> , July 2020.
[J35]	C. Wang, H. Hu and Y. M. Lu, "A solvable high-dimensional model of GAN," <i>Conference on Neural Information Processing Systems (NeurIPS)</i> , December 2019.
[J34]	L. Saglietti, Y. M. Lu and C. Lucibello, "Generalized approximate survey propagation for high- dimensional estimation," <i>Proc. International Conference on Machine Learning (ICML)</i> , Long Island, June 2019. (Oral presentation)
[J33]	C. Wang and Y. M. Lu, "The scaling limit of high-dimensional online independent component analysis," <i>Journal of Statistical Mechanics</i> , Special Issue on Machine Learning, Dec. 2019. (This is an updated and republished version of [J25].)
[J32]	Y. Chi, Y. M. Lu and Y. Chen, "Nonconvex optimization meets low-rank matrix factorization: An overview," <i>IEEE Transactions on Signal Processing</i> , accepted, 2019. (arXiv:1809.09573 [cs.LG])
[J31]	G. Baechler, M. Kreković, J. Ranieri, A. Chebira, Y. M. Lu and M. Vetterli, "Super resolution phase retrieval for sparse signals," <i>IEEE Transactions on Signal Processing</i> , vol. 67, no. 18, Sep. 2019.
[J30]	D. Simon, J. Sulam, Y. Romano, Y. M. Lu and M. Elad, "MMSE approximation for sparse coding algorithms using stochastic resonance," <i>IEEE Transactions on Signal Processing</i> , vol. 67, no. 17, Sep. 2019. (arXiv:1806.10171 [eess.SP])
[J29]	W. Luo, W. Alghamdi and Y. M. Lu, "Optimal spectral initialization for signal recovery with applications to phase retrieval," <i>IEEE Transactions on Signal Processing</i> , vol. 67, no. 9, May 2019. (arXiv:1811.04420 [cs.IT])
[J28]	Y. M. Lu and G. Li, "Phase transitions of spectral initialization for high-dimensional nonconvex estimation," <i>Information and Inference: A Journal of the IMA</i> , Nov. 2019. (arXiv:1702.06435 [cs.IT])
[J27]	C. Wang, Y. C. Eldar and Y. M. Lu, "Subspace estimation from incomplete observations: A high-dimensional analysis," <i>IEEE Journal of Selected Topics in Signal Processing</i> , vol. 12, no. 6, Dec. 2018. (arXiv:1805.06834 [cs.LG])
[J26]	L. Balzano, Y. Chi and Y. M. Lu, "A modern perspective on streaming PCA and subspace tracking: The missing data case," <i>Proceedings of the IEEE</i> , vol. 106, no. 8, Aug. 2018. (arXiv:1806.04609 [stat.ML])
[J25]	C. Wang and Y. M. Lu, "The scaling limit of high-dimensional online independent component analysis," <i>Conference on Neural Information Processing Systems (NIPS)</i> , December 2017. (Spot-light paper)
[J24]	Y. M. Lu, J. Oñativia and P. L. Dragotti, "Sparse representation in Fourier and local bases using ProSparse: A probabilistic analysis," <i>IEEE Transactions on Information Theory</i> , vol. 64, no 4, Apr. 2018. (arXiv:1611.07971 [cs.IT])

[J23]	R. Yin, R. Gao, Y. M. Lu and I. Daubechies, "A tale of two bases: Local-Nonlocal regularization on image patches with convolution framelets," <i>SIAM Journal on Imaging Sciences</i> , vol. 10, no. 2, May 2017. (arXiv:1606.01377 [cs.CV])
[J22]	S. H. Chan, T. Zickler and Y. M. Lu, "Understanding symmetric smoothing filters: A Gaussian mixture model perspective," <i>IEEE Transactions on Image Processing</i> , vol. 26, no. 11, pp. 5107–5121, 2017. (arXiv:1601.00088 [cs.CV])
[J21]	Y. Chi and Y. M. Lu, "Kaczmarz method for solving quadratic equations," <i>IEEE Signal Processing Letters</i> , vol. 23, no. 9, September 2016.
[J20]	A. Minot, Y. M. Lu and N. Li, "A distributed Gauss-Newton method for power system state estimation," <i>IEEE Transactions on Power Systems</i> , vol. 31, no. 5, 2016.
[J19]	I. Dokmanić and Y. M. Lu, "Sampling sparse signals on the sphere: Algorithms and applications," <i>IEEE Transactions on Signal Processing</i> , vol. 64, no. 1, 2016
[J18]	F. Sroubek, J. Kamenicky and Y. M. Lu, "Decomposition of space-variant blur in image deconvolution," <i>IEEE Signal Processing Letters</i> , vol. 23, no. 3, March 2016.
[J17]	D. M. Merfeld, T. K. Clark, Y. M. Lu and F. Karmali, "Dynamics of individual perceptual decisions," <i>Journal of Neurophysiology</i> , vol. 115, no. 1, 2016.
[J16]	C. Hu, J. Sepulcre, K. A. Johnson, G. E. Fakhri, Y. M. Lu and Q. Li, "Matched signal detection on graphs: Theory and application to brain imaging data classification," <i>NeuroImage</i> , vol. 125, pp. 587–600, 2016.
[J15]	C. Hu, L. Cheng, J. Sepulcre, K. A. Johnson, G. E. Fakhri, Y. M. Lu and Q. Li, "A spectral graph regression model for learning brain connectivity of Alzheimer's disease," <i>PLOS ONE</i> , vol. 10, no. 5, 2015.
[J14]	P. L. Dragotti and Y. M. Lu, "On sparse representation in Fourier and local bases," <i>IEEE Transactions on Information Theory</i> , vol. 60, no. 12, December 2014.
[J13]	S. H. Chan, T. Zickler and Y. M. Lu, "Monte Carlo non-local means: Random sampling for large-scale image filtering," <i>IEEE Transactions on Image Processing</i> , vol. 23, no. 8, August 2014.
[J12]	S. Maranò, D. Fäh and Y. M. Lu, "Sensor placement for the analysis of seismic surface waves: Sources of error, design criterion, and array design algorithms," <i>Geophys. J. Int.</i> , vol. 197, no. 3, 2014.
[J11]	I. Dokmanić, R. Parhizkar, A. Walther, Y. M. Lu and M. Vetterli, "Acoustic echoes reveal room shape," <i>Proceedings of the National Academy of Sciences (PNAS)</i> , vol. 110, no. 30, 2013.
[J10]	A. Agaskar and Y. M. Lu, "A spectral graph uncertainty principle," <i>IEEE Transactions on Infor-</i> <i>mation Theory</i> , vol. 59, no. 7, pp. 4338–4356, July 2013.
[J9]	M. N. Do and Y. M. Lu, "Multidimensional filter banks and multiscale geometric representations," <i>Foundation and Trends in Signal Processing</i> , vol. 5, no. 3, 2012.
[J8]	F. Yang, Y. M. Lu, L. Sbaiz and M. Vetterli, "Bits from photons: Oversampled Image acquisition using binary Poisson statistics," <i>IEEE Transactions on Image Processing</i> , vol. 21, no. 4, April 2012.

[J7]	Y. M. Lu, M. Karzand, and M. Vetterli, Demosaicking by alternating projections: Theory and fast one-step implementation," <i>IEEE Transactions on Image Processing</i> , vol. 19, no. 8, August 2010.
[J6]	A. Hormati, O. Roy, Y. M. Lu and M. Vetterli, "Distributed sampling of correlated signals linked by sparse filtering: Theory and applications," <i>IEEE Transactions on Signal Processing</i> , vol. 58, no. 3, March 2010.
[J5]	Y. M. Lu, M. N. Do, and R. S. Laugesen, "A computable Fourier condition generating alias-free sampling lattices," <i>IEEE Transactions on Signal Processing</i> , vol. 57, no. 5, May 2009.
[J4]	Y. M. Lu and M. N. Do, "A theory for sampling signals from a union of subspaces," <i>IEEE Transactions on Signal Processing</i> , vol. 56, no. 6, June 2008.
[J3]	Y. M. Lu and M. N. Do, "A mapping-based design for nonsubsampled hourglass filter banks in arbitrary dimensions," <i>IEEE Transactions on Signal Processing</i> , vol. 56, no. 4, April 2008.
[J2]	Y. M. Lu and M. N. Do, "Sampling signals from a union of subspaces," <i>IEEE Signal Processing Magazine, Special Issue on Compressive Sampling</i> , March 2008.
[J1]	Y. M. Lu and M. N. Do, "Multidimensional directional filter banks and surfacelets," <i>IEEE Transactions on Image Processing</i> , vol. 16, no. 4, April 2007.
Conference	
[C58]	H. Hu and Y. M. Lu, "Asymptotics and optimal designs of SLOPE for sparse linear regression," <i>Proc. IEEE International Symposium on Information Theory (ISIT)</i> , Paris, July 2019.
[C57]	W. Luo and Y. M. Lu, "A spectral method for estimating low-rank subspaces from nonlinear measurements," <i>Proc. SPARS Workshop</i> , Toulouse, France, July 2019. (Oral presentation)
[C56]	O. Dhifallah and Y. M. Lu, "Fundamental limits of PhaseMax for phase retrieval: A replica analysis," <i>IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAM-SAP)</i> , December 2017. (<i>Best Student Paper Award, First Prize</i>)
[C55]	O. Dhifallah, C. Thrampoulidis and Y. M. Lu, "Phase retrieval via linear programming: Funda- mental limits and algorithmic improvements," Proc. 55th Annual Allerton Conference on Com- munication, Control, and Computing, September 2017.
[C54]	Y. M. Lu and G. Li, "Spectral initialization for nonconvex estimation: High-dimensional limit and phase transitions," <i>Proc. IEEE International Symposium on Information Theory (ISIT)</i> , Aachen, Germany, June 2017.
[C53]	Y. Ma, Y. M. Lu and D. Baron, "Multiprocessor approximate message passing with column-wise partitioning," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , New Orleans, 2017.
[C52]	C. Wang and Y. M. Lu, "Online learning for sparse PCA in high dimensions: Exact dynamics and phase transitions," <i>Proc. IEEE Information Theory Workshop (ITW)</i> , Cambridge, UK, September 2016. (arXiv:1609.02191 [cs.IT])
[C51]	J. Onativia, Y. M. Lu and P. L. Dragotti, "ProSparse denoise: Prony's based sparsity pattern recovery in the presence of noise," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Shanghai, March 2016.

[C50]	G. Li, Y. Gu and Y. M. Lu, "Phase retrieval using iterative projections: Dynamics in the large systems limit," <i>Proc. Allerton Conference on Communications, Control, and Computing</i> , Monticello, October 2015.
[C49]	S. H. Chan, T. Zicker and Y. M. Lu, "Understanding symmetric smoothing filters via Gaussian mixtures," <i>Proc. IEEE International Conference on Image Processing</i> , Montreal, September 2015.
[C48]	J. Oñativia, P. L. Dragotti and Y. M. Lu, "Sparsity according to Prony, Average Performance Analysis", <i>Proc. SPARS Workshop</i> , Cambridge, UK, July 2015. (<i>oral presentation</i>)
[C47]	C. Wang, A. Agaskar and Y. M. Lu, "Randomized Kaczmarz Algorithm for Inconsistent Linear Systems: An Exact MSE Analysis", <i>Proc. International Conference on Sampling Theory and Applications (SampTA)</i> , Washington DC, May 2015.
[C46]	A. Agaskar, C. Wang and Y. M. Lu, "Randomized Kaczmarz algorithms: Exact MSE analysis and optimal sampling probabilities," <i>Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)</i> , Atlanta, December 2014. (<i>Best Student Paper Award</i>)
[C45]	S. H. Chan and Y. M. Lu, "Efficient image reconstruction for gigapixel quantum image sensors," <i>Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)</i> , Atlanta, December 2014.
[C44]	A. Agaskar and Y. M. Lu, "Optimal hypothesis testing with combinatorial structure: Detecting random walks on graphs," <i>Proc. Asilomar Conference on Signals, Systems and Computers</i> , Pacific Grove, November 2014.
[C43]	J. Oñativia, Y. M. Lu, and P. L. Dragotti, "Finite dimensional FRI," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Florence, May 2014.
[C42]	Y. M. Lu, "A framework for adaptive parameter estimation with finite memory," <i>Proc. IEEE Global Conference on Signal and Information Processing (GlobalSIP)</i> , Austin, December, 2013.
[C41]	Y. M. Lu, "Adaptive sensing and inference for single-photon imaging," Proc. 47th Annual Con- ference on Information Sciences and Systems (CISS), Baltimore, March 2013.
[C40]	A. Agaskar and Y. M. Lu, "Detecting random walks hidden in noise: Phase transition on large graphs," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Vancouver, May 2013.
[C39]	S. H. Chan, T. Zickler and Y. M. Lu, "Fast non-local filtering by random sampling: It works, especially for large images," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Vancouver, May 2013.
[C38]	Z. Sadeghipoor, Y. M. Lu and S. Süsstrunk, "A novel compressive sensing approach to simul- taneously acquire color and near-infrared images on a single sensor," <i>Proc. IEEE International</i> <i>Conference on Acoustics, Speech and Signal Processing</i> , Vancouver, May 2013.
[C37]	C. Hu, L. Cheng, J. Sepulcre, G. E. Fakhri, Y. M. Lu and Q. Li, "Matched signal detection on graphs: Theory and application to brain network classification," to appear in <i>Proc. 23rd</i> <i>International Conference on Information Processing in Medical Imaging (IPMI 2013)</i> , Asilomar, CA, June 2013.
[C36]	C. Hu, L. Cheng, J. Sepulcre, G. E. Fakhri, Y. M. Lu and Q. Li, "A graph theoretical regression model for brain connectivity learning of Alzheimer's disease," <i>Proc. International Symposium on Biomedical Imaging (ISBI)</i> , San Francisco, April 2013.

[C35]	C. Hu, L. Cheng and Y. M. Lu, "Graph-Based regularization for color image demosaicking," <i>Proc. IEEE International Conference on Image Processing</i> , Orlando, September 2012.
[C34]	C. Hu and Y. M. Lu, "Adaptive time-sequential binary sensing for high dynamic range imaging," Proc. SPIE Conference on Advanced Photon Counting Techniques VI, Baltimore, April 2012.
[C33]	A. Agaskar and Y. M. Lu, "Uncertainty principles for signals defined on graphs: Bounds and char- acterizations," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Kyoto, March 2012.
[C32]	Y. Xiong and Y. M. Lu, "Blind estimation and low-rate sampling of sparse MIMO systems with common support," <i>Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing</i> , Kyoto, March 2012.
[C31]	Z. Sadeghipoor and Y. M. Lu and S. Süsstrunk, "Optimal spectral sensitivity functions for single sensor color imaging," <i>Proc. SPIE Conference on Digital Photography VIII</i> , Burlingame, January 2012.
[C30]	Z. Sadeghipoor and Y. M. Lu and S. Süsstrunk, "Correlation-Based joint acquisition and de- mosaicing of visible and near-infrared images," <i>Proc. IEEE International Conference on Image</i> <i>Processing</i> , Brussels, September 2011.
[C29]	A. Agaskar and Y. M. Lu, "An uncertainty principle for functions defined on graphs," <i>Proc. SPIE Conference on Wavelets and Sparsity</i> , San Diego, 2011.
[C28]	Y. M. Lu and M. Vetterli, "Sparse spectral factorization: Unicity and reconstruction algorithms," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Prague, May 2011.
[C27]	I. Dokmanić, Y. M. Lu and M. Vetterli, "Can one hear the shape of a room: The 2-D polygonal case," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Prague, May 2011. (<i>Best Student Paper Award</i>)
[C26]	J. Ranieri, A. Chebira, Y. M. Lu and M. Vetterli, "Sampling and reconstructing diffusion fields with localized sources," <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Prague, May 2011.
[C25]	Y. M. Lu, P. L. Dragotti and M. Vetterli, "Localizing point sources in diffusion fields from spa- tiotemporal samples," <i>Proc. 9th International Conference on Sampling Theory and Applications</i> (SAMPTA), Singapore, May 2011.
[C24]	Y. M. Lu and M. Vetterli, "Multichannel sampling with unknown gains and offsets: A fast re- construction algorithm," <i>Proc. Allerton Conference on Communication, Control and Computing</i> , Monticello, September 2010.
[C23]	M. McCormick, Y. M. Lu, and M. Vetterli, "Learning sparse systems at sub-Nyquist rates: A frequency-domain approach," <i>Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Dallas, March 2010.
[C22]	F. Yang, Y. M. Lu, L. Sbaiz, and M. Vetterli, "An optimal algorithm for reconstructing images from binary measurements," <i>Proc. SPIE Conference on Computational Imaging VIII</i> , San Jose, January 2010.

[C21]	Y. M. Lu and M. Vetterli, "Distributed spatio-temporal sampling of diffusion fields from sparse instantaneous sources," <i>Proc. 3rd International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)</i> , Aruba, 2009.
[C20]	Y. M. Lu, C. Fredembach, M. Vetterli, and S. Süsstrunk, "Designing color filter arrays for the joint capture of visible and near-infrared images," <i>Proc. IEEE International Conference on Image Processing</i> , Cairo, 2009.
[C19]	Y. M. Lu, M. N. Do and R. S. Laugesen, "Computable Fourier conditions for alias-free sampling and critical sampling," <i>Proc. 8th International Conference on Sampling Theory and Applications</i> (SAMPTA), Marseille, 2009.
[C18]	A. Hormati, O. Roy, Y. M. Lu and M. Vetterli, "Distributed sensing of signals under a sparse filter- ing model," <i>Proc. 8th International Conference on Sampling Theory and Applications (SAMPTA)</i> , Marseille, 2009.
[C17]	C. Carneiro, M. Karzand, F. Golay, Y. M. Lu and M. Vetterli, "Assessing digital surface models by verifying shadows: A sensor network approach," <i>Proc. 6th International Symposium on Spatial</i> <i>Data Quality</i> , Newfoundland, 2009.
[C16]	Y. M. Lu and M. Vetterli, "Spatial super-resolution of a diffusion field by temporal oversampling in sensor networks," <i>Proc. IEEE International Conference on Acoustics, Speech, and Signal Processing</i> , Taiwan, April 2009.
[C15]	O. Roy, A. Hormati, Y. M. Lu and M. Vetterli, "Distributed sensing of correlated signals linked by sparse filtering," <i>Proc. IEEE International Conference on Acoustics, Speech, and Signal Pro-</i> <i>cessing</i> , Taiwan, April 2009.
[C14]	Y. M. Lu and M. Vetterli, "Optimal color filter array design: quantitative conditions and an efficient search procedure," <i>Proc. SPIE Conference on Digital Photography V</i> , San Jose, January 2009.
[C13]	Y. M. Lu, M. Karzand, and M. Vetterli, "Iterative demosaicking accelerated: theory and fast noniterative implementations," <i>Proc. SPIE Conference on Computational Imaging VII</i> , San Jose, January 2009.
[C12]	G. Barrenetxea, F. Ingelrest, Y. M. Lu and M. Vetterli, "Assessing the challenges of environmental signal processing through the SensorScope project", <i>Proc. IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Las Vegas, 2008.
[C11]	Y. M. Lu and M. N. Do, "Finding optimal integral sampling lattices for a given frequency support in multidimensions," <i>Proc. IEEE International Conference on Image Processing</i> , San Antonio, 2007. (Best Student Paper Award)
[C10]	Y. M. Lu and M. N. Do, "Sampling signals from a union of shift-invariant subspaces," <i>Proc. of</i> SPIE Conference on Wavelet Applications in Signal and Image Processing XII, San Diego, USA, August 2007.
[C9]	M. Yan, Y. Lu, M. Requardt, J. Barentsz, T. Moeller, and S. Takahashi, "Automatic detection of pelvic lymph nodes using multiple MR sequences," <i>Proc. of SPIE Conference on Medical Imaging</i> , San Diego, February 2007.
[C8]	N. Mueller, Y. Lu, and M. N. Do, "Image interpolation using multiscale geometric representa- tions," <i>Proc. of SPIE Conference on Electronic Imaging</i> , San Jose, January 2007.

[C7]	Y. Lu and M. N. Do, "A new contourlet transform with sharp frequency localization," <i>Proc. IEEE International Conference on Image Processing</i> , Atlanta, 2006. (<i>Most Innovative Paper Award</i>)
[C6]	Y. Lu and M. N. Do, "Multidimensional nonsubsampled hourglass filter banks: geometry of passband support and filter design," <i>Proc. Fortieth Annual Asilomar Conference on Signals, Systems, and Computers</i> , Pacific Grove, 2006.
[C5]	Y. Lu and M. N. Do, "Video processing using the 3-dimensional surfacelet transform," Proc. Fortieth Annual Asilomar Conference on Signals, Systems and Computers, Pacific Grove, 2006.
[C4]	Y. Lu and M. N. Do, "3-D directional filter banks and surfacelets," <i>Proc. of SPIE Conference on Wavelet Applications in Signal and Image Processing XI</i> , San Diego, USA, August 2005.
[C3]	Y. Lu and M. N. Do, "The finer directional wavelet transform," <i>Proc. IEEE International Con-</i> <i>ference on Acoustics, Speech and Signal Processing</i> , Philadelphia, 2005.
[C2]	Y. Lu and M. N. Do, "A geometrical approach to sampling signals with finite rate of innovation," <i>Proc. of IEEE International Conference on Acoustics, Speech and Signal Processing</i> , Montreal, Canada, 2004.
[C1]	Y. Lu and M. N. Do, "CRISP-Contourlets: a critically sampled directional multiresolution im- age representation," <i>Proc. of SPIE Conference on Wavelet Applications in Signal and Image</i> <i>Processing X</i> , San Diego, 2003.

Invited Seminars and Talks

2022

Harvard Machine Learning Foundations Seminar, Harvard SEAS, Oct. 2022

EECS Colloquium, Oregon State University, Oct. 2022

Signal Processing Distinguished Lecturer Seminar, IEEE SPS North Jersey Chapter, Sep. 2022

Applied Mathematics Colloquium, Chinese University of Hong Kong, Sep. 2022

Workshop on High-Dimensional Probability and Statistics in Machine Learning, Chalmers University, Aug. 2022

CMSA Interdisciplinary Science Seminar, Aug. 2022

Keynote Speaker at the 4th TBSI Workshop on Learning Theory, Aug. 2022

IEEE SP Society Student Branch Seminar, Indian Institute of Technology, Kharagpur, Jun. 2022

Stochastic and Statistics Seminar, MIT, Feb. 2022

2021

Mathematical Picture Language Project Seminar, Harvard University, Nov. 2021

Applied Mathematics and Computational Science Colloquium, University of Pennsylvania, Nov. 2021

EE Department Seminar, Princeton University, Nov. 2021

CMSA Random Matrix and Probability Theory Seminar, Harvard University, Apr. 2021

Keynote Speaker at the 12th Greek Electrical and Computer Engineering Student Conference (ECESCON 12), Apr. 2021

Invited Seminars and Talks (continued)

2020

ECE Colloquium, University of California Riverside, Nov. 2020 Algorithmic Foundation of Data Science Seminar, Fudan University, Nov. 2020 Statistics Department Colloquium, Harvard University, Mar. 2020 Signal Processing Seminar, MIT, Feb. 2020 Department Seminar, Computer Science and Engineering, University of Louisville, Feb. 2020

2019

Workshop on Numerical Algebra in High-Dimensional Data Analysis, Tianyuan Mathematical Center, Xiamen, Dec. 2019
Machine Learning and Data Science Seminar, CFM-ENS Chair in Data Science, Dec. 2019
LCAV Seminar, School of Computer and Communication Sciences, EPFL, Dec. 2019
Foundations of Data Science Seminar, ETH Zurich, Dec. 2019
ENS Data Science Colloquium, Ecole Normale Superieure (Paris), Nov. 2019
IPAM Workshop on Using Physical Insights for Machine Learning, UCLA, Nov. 2019
Moka Seminar, INRIA-CNRS-Université Paris-Dauphine, Oct. 2019
Workshop on the Science of Data Science, International Center for Theoretical Physics (ICTP), Trieste, Sep. 2019
Workshop on Rough Landscapes: from Physics to Algorithms, Kavli Institute for Theoretical Physics, Jan. 2019

2018

Workshop on Statistical Physics and Machine Learning, Chinese Academy of Sciences, October, 2018
ECE Seminar, Purdue University, Sep. 2018
STIR Seminar, Department of ECE, Boston University, Sep. 2018
Workshop on Signal Processing Theory and Methods, Imperial College London, Sep. 2018
EE Seminar, University of Michigan, Mar. 2018
CMSA Workshop on Geometry, Imaging and Computing, Harvard University, Mar. 2018

2017

Joint Math and CMSA Random Matrix and Probability Theory Seminar, Harvard University, Nov. 2017 ECE Seminar, Boston University, Nov. 2017 ECE Seminar, University of California, Davis, Oct. 2017 ECE Seminar, Northwestern University, Oct. 2017 ECE Seminar, Virginia Commonwealth University, Sep. 2017 Biomedical Imaging Seminar, Northeastern University, Aug. 2017 DIMACS Workshop, Rutger University, Aug. 2017 PULSA Workshop, University of Lisbon, Portugal, Jun. 2017 ECE Seminar, Rensselaer Polytechnic Institute, Apr. 2017

Invited Seminars and Talks (continued)

Machine Learning Seminar, School of Industrial and Systems Engineering, Georgia Tech, Mar. 2017

2016

Mitsubishi Electric Research Laboratory (MERL), Cambridge, MA, Dec. 2016
Department of ECE, Carnegie Mellon University, Pittsburg, PA, Dec. 2016
BLISS Seminar, Department of EECS, University of California at Berkeley, Berkeley, CA, Nov. 2016
EE Systems Seminar, California Institute of Technology, Pasadena, CA, Nov. 2016
DTC Seminar, Department of ECE, University of Minnesota, Minneapolis, MN, Oct. 2016
Network Science Seminar, Department of ECE, University of Arizona, Tucson, AZ, Oct. 2016
Department of Applied Mathematics and Statistics, Johns Hopkins University, Baltimore, MD, Sep. 2016
London Workshop on Sparse Signal Processing, Imperial College London, London, UK, Sep. 2016
ECE Seminar, Department of ECE, Tufts University, Medford, MA, Sep. 2016
International Conference on Applied Mathematics, Hong Kong, China, Jun. 2016
Mathematics of Signal Processing, Hausdorff Research Institute for Mathematics, Bonn, Germany, Mar. 2016
Nexus of Information and Computation Theories Program, Institut Henri Poincaré, Paris, France, Mar. 2016
ECE Seminar, Department of ECE, North Carolina State University, Feb. 2016

2015

Research Laboratory of Electronics (RLE), MIT, Cambridge, MA, Dec. 2015
ISS Seminar, Department of ECE, Texas A&M University, College Station, TX, Nov. 2015
ECE Seminar, Department of ECE, Ryerson University, Toronto, Canada, Oct. 2015
EE Seminar, School of Engineering and Applied Sciences, Harvard University, Cambridge, Sep. 2015
Signal Processing Seminar, Department of ECE, University of Illinois at Urbana-Champaign, Urbana, Sep. 2015
ECE Seminar, Department of ECE, Colorado State University, Fort Collins, CO, Mar. 2015
Center for Nonlinear Sciences Colloquium, Los Alamos National Laboratory, Los Alamos, NM, Mar. 2015

2014

Department of Electronic Engineering, Tsinghua University, Beijing, China, Oct. 2014 Workshop on Collective Dynamics, Kavli Institute for Theoretical Physics China, Beijing, China, Oct. 2014 WAM Seminar, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, Oct. 2014 Workshop on spin glasses: An old tool for new problems, Institut d'Études Scientifiques de Cargèse, Aug. 2014 Shanks Conference and Lecture, Department of Mathematics, Vanderbilt University, Nashville, TN, May 2014 ECE Seminar, Tufts University, Apr. 2014

Imaging Seminar, Department of Mathematics, University of Houston, Houston, TX, Feb. 2014

Invited Seminars and Talks (continued)

2013 and earlier

EE Seminar, School of Engineering and Applied Sciences, Yale University, New Haven, CT, Nov. 2013 Qualcomm, San Diego, CA, Aug. 2013. EE Seminar, Thaver School of Engineering, Dartmouth College, Hanover, NH, Apr. 2013 ECE Seminar, Department of ECE, Boston University, Boston, MA, Apr. 2013 Department of ECE, Dartmouth College, Apr. 2013 Department of ECE, Carnegie Mellon University, Dec. 2012 Department of Mathematics, George Mason University, Apr. 2012 MIT Media Lab, Jun. 2011 Mitsubishi Electric Research Lab, Jun. 2011 Shanks Conference and Lecture, Department of Mathematics, Vanderbilt University, May 2011 Imaging and Computing Seminar, MIT, Apr. 2011 Department of Mathematics, Vanderbilt University, Dec. 2010 Department of ECE, Tufts University, Nov. 2010 Department of EEE, Imperial College London, Aug. 2009 Research Laboratory of Electronics (RLE), May 2009 Biomedical Imaging Seminar, EPFL, Jan. 2009 Department of Mathematics, Washington University in St. Louis, Apr. 2007 DSP Seminar, University of Illinois at Urbana-Champaign, 03/2007