Marco F. Duarte

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RESEARCH INTERESTS

Signal processing and machine learning from geometric models (sparsity, manifolds)
Affine Subspace Models and Clustering for Patch-Based Image Denoising Signal compression, acquisition, and recovery in cyber-physical systems; dimensionality reduction
Approximation theory and computational harmonic analysis; sparse approximation algorithms

EDUCATION

2009	Ph.D., Electrical and Computer Engineering Thesis: "Compressive Sensing for Signal Ensembles" Advisor: Dr. Richard G. Baraniuk	Rice University
2004	M.Sc., Electrical Engineering Thesis: "Vehicle Classification in Distributed Wireless Sensor Networks" Advisor: Dr. Yu-Hen Hu	University of Wisconsin – Madison
2002	B.Sc., Computer Engineering (With Distinction)	University of Wisconsin – Madison

POSITIONS

2017–Present	Department of Electrical and Computer Engineering University of Massachusetts – Amherst	Associate Professor
2019	Department of Electrical and Computer Engineering Georgia Institute of Technology	Visiting Lecturer
2011–2017	Department of Electrical and Computer Engineering University of Massachusetts – Amherst	Assistant Professor
2010–2011	Department of Computer Science, Duke University	IPAM Postdoctoral Fellow
2009–2010	Program in Applied and Computational Mathematics Princeton University	IPAM Postdoctoral Fellow
2005–2009	Department of Electrical and Computer Engineering Rice University	Research Assistant
2006	Ricoh Innovations, Inc.	Summer Intern
2003–2004	Department of Electrical and Computer Engineering University of Wisconsin – Madison	Teaching Assistant
2001–2003	Department of Electrical and Computer Engineering University of Wisconsin – Madison	Project Assistant

HONORS and AWARDS

2024	Signal Processing Society Outstanding Editorial Board Member Award	IEEE
2020	Signal Processing Magazine Best Paper Award (with M. A. Davenport, D. Takhar,	IEEE

	J. N. Laska, T. Sun, K. F. Kelly and R. G. Baraniuk)	
2019	Top Reviewer Award	NeurIPS
2018	Senior Fellow (Science at Extreme Scales)	IPAM
2017	Best Reviewer Award	NeurIPS
2017	Signal Processing Society Overview Paper Award (with Y. C. Eldar)	IEEE
2009-2011	Mathematical Sciences Research Institutes Postdoctoral Fellowship	NSF/IPAM
2009	Best Student Paper Award (with C. Hegde and V. Cevher)	SPARS Workshop
2007	Hershel M. Rich Invention Award	Rice University
2004–2009	Distinguished Graduate Fellowship	Texas Instruments
2004–2009	Presidential Fellowship	Rice University
2003	ECE Undergraduate Scholarship	University of Wisconsin – Madison
2002	Outstanding Initiate of the Year	Tau Beta Pi, Chapter WI–A

RESEARCH SUPPORT

2017–2022	NSF	CPS: Synergy: Image-Based Indoor Navigation for Visually Impaired Users	(PI)
2016–2020	NSF	High Dynamic Range Wideband Reconfigurable Receivers	(Co-PI)
2013–2017	NSF	Wavelet-Based Representations for Hyperspectral Data Processing and Interpretation	(PI)
2012–2016	NSF	Robust Compressive Sensing: Circuits and Algorithms	(Co-PI)
2012–2015	NSF	CPS: Synergy: SensEye: An Architecture for Ubiquitous, Real-Time Visual Context Sensing and Inference	(Co-PI)

PROFESSIONAL ACTIVITIES

Member: Institute of Electrical and Electronics Engineers (IEEE), Senior Member
Tau Beta Pi

Associate Editor: *IEEE Transactions on Signal Processing, 2020-2024*
IEEE Signal Processing Letters, 2016-2019

Board Member: *Asilomar Conf. Signals, Systems, and Computers, Board of Directors, 2024-2027*

Technical Committees: *IEEE Signal Processing Society Technical Committee on Signal Processing Theory and Methods, 2014-2016*

Program Committees: *Asilomar Conf. Signals, Systems, and Computers, General Chair, 2023*
Asilomar Conf. Signals, Systems, and Computers, Technical Chair, 2020
Asilomar Conf. Signals, Systems, and Computers, Technical Area Chair, 2013, 2017
ACM/IEEE Info. Processing in Sensor Networks (IPSN), 2013, 2014, 2017
Sensor Signal Processing for Defence Workshop (SSPD), 2014
IEEE GlobalSIP Symposium on Low-Dimensional Models and Optimization in Signal Processing, 2013

Reviewer: *IEEE Transactions on Signal Processing*
IEEE Signal Processing Magazine
IEEE Journal on Special Topics in Signal Processing

IEEE Signal Processing Letters
IEEE Transactions on Information Theory
IEEE Transactions on Image Processing
IEEE Transactions on Computational Imaging
IEEE Transactions on Pattern Analysis and Machine Intelligence
IEEE Transactions on Communications
ACM Transactions on Sensor Networks
SIAM Journal on Imaging Science
SIAM Journal on Scientific Computing
Proc. National Academy of Sciences
Applied and Computational Harmonic Analysis
Conf. Neural Info. Processing Systems (NeurIPS), 2017–2024
Int. Conf. Machine Learning (ICML), 2016–2025
Int. Conf. Learning Representations (ICLR), 2019–2025

Participant:

IPAM Long Program *Science at Extreme Scales: Where Big Data Meets Large-Scale Computing*, 2018
IPAM Workshop *Computational Photography and Intelligent Cameras*, 2015
ICERM Workshop *Approximation, Integration, and Optimization*, 2014
IPAM Workshop *Translating Cancer Data and Models to Clinical Practice*, 2014
SAMSI Workshop *Massive Datasets*, 2012
IMA Workshop *High Dimensional Phenomena*, 2011
IPAM Workshop *Machine Reasoning I-II*, 2010
IAS/PCMI Research Program in Mathematics *Image Processing*, 2010
AIM Workshop *Careers in Academia*, 2009
IMA Workshop *Multi-Manifold Data Modeling and Applications*, 2008
IPAM Short Course *Sparse Representations and High Dimensional Geometry*, 2007
IPAM Workshop *Mathematical Challenges and Opportunities in Sensor Networking*, 2007
IMA Workshop *Natural Images*, 2006
IMA Workshop *Integrated Sensing and Processing*, 2005

TEACHING

Lecturer (UMass):

ECE 564/645	Digital Communications	(S'16, S'17, S'24–26)
ECE 601	Machine Learning for Engineers	(S'26)
ECE 202	Computational Methods for ECE	(F'23–25)
ECE 565	Digital Signal Processing	(S'20, F'20–23)
ECE 213	Continuous-Time Signals and Systems	(S'21, S'23)
ECE 315	Signal Processing Methods	(F'19–22)
ECE 213	Cont.-Time Signals and Systems (Discussions)	(S'20)
ECE 697 SL	Statistical Models for Learning	(S'18)
ECE 313	Signals and Systems (Discussions)	(F'12, F'16, F'17)
ECE 313	Signals and Systems (Lectures)	(F'13–15)
ECE 564/645	Digital Communications	(S'16, S'17)

	ECE 697 CS	Introduction to Compressive Sensing	(F'11,S'15)
	ECE 746	Statistical Signal Processing	(S'14)
	ECE 608	Signal Theory	(S'12, S'13)
Lecturer (GA Tech):	ECE 2026	Intro. to Signal Processing (Recitations)	(S'19)

STUDENTS

Ph.D. Students:	Hamid Dadkhahi (2016, now at Google)
	Dian Mo (2018, now at Microsoft Research)
	Siwei Feng (2019, now Assistant Professor at Soochow University.)
	Yuanzhe Gu (2024-present)
M.Sc. Students:	Dian Mo (2013)
	Siwei Feng (2014)
	Shermin Hamzehei (2019, now at Bose)
	Byoungdoo Kong (2020, now at Korea Electric Power Co.)
	Yuanzhe Gu (2022)
	Sushma Suresh Babu (2022)
	Ritik Shah (2025)
	Shengbo Zhang (2026)
Undergrauate Students:	Kevin Eykholt (Summer 2013)
	Mark Wagner (2013-2014)
	Ping Fung (Summer 2014)
	Lubin Jian (Summer 2015)
	Derek Foster (2015-2016)
	Michael Shliselberg (Summer 2017)
	Maxwell Rapier (2020-2021)
	Sarah Jowett (2023-2024)
	Nicholas Sydorenko (2025-2026)
	Kanav Nagpal (2026)
Visiting Students:	Karsten Fyhn, Ph.D. Student, Aalborg University, Denmark (Fall 2012)

UNIVERSITY SERVICE

2022–2026	Instructional Development Committee, ECE Department, University of Massachusetts
2024–2025	Department Seminar Committee, ECE Department, University of Massachusetts
2023–2024	Interim Faculty Senator, University of Massachusetts
2021–2023	Graduate Program Committee, ECE Department, University of Massachusetts
2021–2022	Diversity, Equity, and Inclusion Committee, ECE Department, University of Massachusetts
2020–2021	Department Personnel Committee, ECE Department, University of Massachusetts
2020–2021	ADVANCE Faculty Fellow, ECE Department, University of Massachusetts
2018, 2020	PhD Poster Session Organizer, ECE Department, University of Massachusetts
2017–2018	Department Personnel Committee, ECE Department, University of Massachusetts
2016–2017	Interim Director of the 5-Year B.S./M.S. Program, ECE Department, University of Massachusetts
2014–2016	Department Seminar Committee, ECE Department, University of Massachusetts

2012–2013 Department Personnel Committee, ECE Department, University of Massachusetts

INVITED PRESENTATIONS

"Explainable Machine Learning (Short Course),"
IRDTA 8th International School on Deep Learning (DeepLearn '23 Winter), Bournemouth, United Kingdom, January 2023.

"The Single Pixel Camera: Compressed Sensing in Action,"
Washington State University Department of Mathematics iSciMath Seminar, Pullman, WA, May 2021.

"Graph and Autoencoder-Based Unsupervised Feature Selection,"
Georgia Institute of Technology Center for Signal and Information Processing Seminar, Atlanta, GA, January 2019.
University of California Riverside Electrical and Computer Engineering Department Seminar, Riverside, CA, December 2018.
IPAM Long Program on Science at Extreme Scales: Where Big Data Meets Large-Scale Computing, Los Angeles, CA, October 2018.

"Structured Sparsity and Compressive Sensing," *Philips Lighting Research North America*, Cambdrige, MA, April 2017.

"Eye Gaze Tracking with Manifold Models," *Worcester Polytechnic Institute Electrical and Computer Engineering Department Seminar*, Worcester, MA, September 2016.

"Parameter Estimation in Compressive Sensing,"
University of Massachusetts Dartmouth Electrical and Computer Engineering Department Seminar, Dartmouth, MA, October 2015.
WPI Workshop on Systems of Lines: Applications of Algebraic Combinatorics, Worcester, MA, August 2015.

"Beyond Randomness: Sparse Signal Processing in Practice," *Tutorial for the IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, Melbourne, Australia, April 2015 (co-organized with Waheed Bajwa).

"Parameter Estimation in Compressive Sensing: The Delay/Doppler Case,"
Tufts University Electrical and Computer Engineering Department Colloquium, Medford, MA, September 2014.
CSIRO Queensland Center for Advanced Technologies Seminar, Pullenvale, Australia, July 2014.
Keynote Presentation *at the Compressive Sensing Radar Workshop*, Bonn, Germany, September 2013.

"Compressive Parameter Estimation via Approximate Message Passing," *SIAM Conf. Computational Science and Engineering*, Salt Lake City, UT, March 2015.

"Measurement Bounds for Sparse Signal Ensembles via Graphical Models," *PITTCON Conf. & Expo Session on Orthogonal and Risk-Based Sensing Systems for Homeland Security Applications*, Chicago, IL, March 2014.

"Non-Homogeneous Hidden Markov Chain Models for Wavelet-Based Hyperspectral Image Processing," *Asilomar Conf. Signals, Systems, and Computation*, Pacific Grove, CA, November 2013

"Compressive Parameter Estimation with Manifolds in Cyber-Physical Systems," **Plenary Talk** *at the Int. Workshop on Compressive Sensing in Cyber-Physical Systems, IEEE Int. Conf. Mobile Ad-Hoc and Sensor Systems (MASS)*, Hangzhou, China, October 2013.

"Compressive Parameter Estimation," *Shanghai Jiaotong University Institute for Sensing and Navigation Seminar*, Shanghai, China, October 2013.

"Manifold Models, Compressive Sensing, and Subsampling," *Dropcam Tech Talk Series*, San Francisco, CA, August 2013.

"Spectral Compressive Sensing," *MIT CSAIL Workshop on Sparse Fourier Transforms Etc.*, Cambridge, MA, February 2013.

"Line Spectral Estimation from Compressive Measurements," *Worcester Polytechnic Institute Electrical and Computer Engineering Department Seminar*, Worcester, MA, January 2013.

"Adquisición Compresiva para Señales de Dispersidad Estructurada,"
Universidad Industrial de Santander, Escuela de Ingeniería Eléctrica, Electrónica y de Telecomunicaciones, Bucaramanga, Colombia, August 2012.
Universidad de los Andes, Seminario de Optimización del Departamento de Matemáticas, Bogotá, Colombia, August 2012.
Pontificia Universidad Javeriana, Departamento de Ingeniería Electrónica, Bogotá, Colombia, August 2012.

"Structured Compressive Sensing," *JASON Advisory Panel Summer Study on Compressed Sensing*, La Jolla, CA, June 2012.

"Recovery of Frequency-Sparse Signals from Compressive Measurements,"
Massachusetts Institute of Technology Imaging and Computing Seminar, Cambridge, MA, November 2011.
University of Massachusetts Electrical and Computer Engineering Department Seminar, Amherst, MA, November 2011.

"Compressive Sensing for Signal Ensembles," *Ohio State University Electrical and Computer Engineering Colloquium*, Columbus, OH, May 2011.

"Signal Recovery from Randomized Measurements Using Structured Sparsity Models,"
University of Massachusetts Electrical and Computer Engineering Department Seminar, Amherst, MA, April 2011.
Northwestern University Electrical Engineering and Computer Science Department Seminar, Chicago, IL, March 2011.
University of Iowa Electrical and Computer Engineering Department Seminar, Iowa City, IA, March 2011.
Columbia University Electrical Engineering Department Seminar, New York, NY, March 2011.
University of Southern California Electrical and Computer Engineering Department Seminar, Los Angeles, CA, February 2011.
Center for Imaging Sciences Seminar, Johns Hopkins University, Baltimore, MD, October 2010.
University of Minnesota Electrical and Computer Engineering Department Seminar, Minneapolis, MN, March 2010.
University of Florida Electrical and Computer Engineering Department Seminar, Gainesville, FL, February 2010.
Washington University at Saint Louis Electrical and Systems Engineering Department Seminar, Saint

Louis, MO, April 2009.
Princeton University IDeAS Seminar (Program in Applied and Computational Mathematics), Princeton, NJ, April 2009.
Massachusetts Institute of Technology Stochastic Systems Group Seminar, Cambridge, MA, February 2009.

"Imaging Architectures for Compressive Sensing,"
DISP Group Computational Imaging Seminar, Duke University, Durham, NC, February 2011.
Park City Mathematics Institute Summer Research Program in Mathematics, Park City, UT, July 2010.

"Model-Based Compressive Imaging," *SIAM Conf. Imaging Science*, Chicago, IL, April 2010.

"Kronecker Compressive Sensing," *SIAM Conf. Imaging Science*, Chicago, IL, April 2010.

"Compressive Sensing for Signal Ensembles," *University of Delaware, Department of Electrical and Computer Engineering, Signal Processing and Communications Seminar*, Newark, DE, March 2010.

"Applications of Sparse Signal Representations to Signal Acquisition and Processing," *Schlumberger Data Compression and Transmission Workshop*, Houston, TX, November 2008.

"Sparse Signal Recovery via Graphical Models," *SIAM Conf. Imaging Science*, San Diego, CA, July 2008.

"Compressive Hyperspectral Imaging and Signal Processing," *DARPA MONTAGE Program Review Meeting*, San Diego, CA, January 2008.

"Distributed Compressed Sensing," *Sparse Approximation Workshop*, Princeton, NJ, November 2006.

"Compressive Sensing for Imaging Applications," *Lockheed Martin Workshop on Computational/Compressed Imaging*, Orlando, FL, September 2006.

"Compressed Sensing: A New Framework for Computational Signal Processing," *Ricoh Innovations Summer Speaker Series*, Menlo Park, CA, July 2006.

"Collaborative and Compressive Processing for Sensor Networks," *Los Alamos National Laboratory Data Driven Modelling and Analysis Speaker Series*, Los Alamos, NM, June 2006.

"Fast Reconstruction of Piecewise Smooth Signals from Incoherent Projections," *Texas Instruments DSP Leadership Meeting*, Dallas, TX, September 2005.

BOOKS AND BOOK CHAPTERS

1. M. F. Duarte, "Signal Theory," Connexions e-textbook, 2013.
2. M. A. Davenport, M. F. Duarte, Y. C. Eldar, and G. Kutyniok, "An Introduction to Compressed Sensing," in *Compressed Sensing: Theory and Applications*, Y. C. Eldar and G. Kutyniok, eds., Cambridge University Press, 2012.
3. D. G. Stork, J. Collins, M. F. Duarte, Y. Furuichi, D. Kale, A. Kulkarni, M. D. Robinson, C. W. Tyler, S. Schechener, and N. Williams, "Did Early Renaissance Painters Trace Optically Projected Images? The Conclusion of Independent Scientists, Art Historians and Artists," in *Digital Imaging for Cultural Heritage Preservation: Analysis, Restoration, and Reconstruction of Ancient Artworks*, F. Stanco, S. Battiato, and G. Gallo, eds., CRC Press, 2011.
4. R. G. Baraniuk, M. A. Davenport, M. F. Duarte, and C. Hegde, "An Introduction to Compressive Sensing," Connexions e-textbook, 2011.

JOURNAL and MAGAZINE PUBLICATIONS

5. H. Dong, S. Suresh Babu, M. F. Duarte, and A. Ganz, "PERCEPT-V: Vision-Based Indoor Localization and Navigation via 3D Spatial Map Generation," submitted to *IEEE Access*, 2022.
6. D. Mo and M. F. Duarte, "Design of Spectrally Shaped Binary Sequences via Randomized Convex Relaxations," submitted to *Elsevier Signal Processing*, 2018.
7. H. Bai, M. F. Duarte, and R. Janaswamy, "Cramér-Rao Bounds for DoA Estimation of Sparse Bayesian Learning with Laplace Prior," *MDPI Sensors*, Vol. 23, No. 1, 2022.
8. D. Mo and M. F. Duarte, "Binary Sequence Set Design for Interferer Rejection in Multi-Branch Modulation," *IEEE Transactions on Signal Processing*, Vol. 68, pp. 3769–3778, 2020.
9. S. Feng, H. Yu, and M. F. Duarte, "Autoencoder Based Sample Selection for Self-Taught Learning," *Knowledge-Based Systems*, Vol. 192, 2020.
10. R. Roscher, B. Bohn, M. F. Duarte, and J. Garcke, "Explainable Machine Learning for Scientific Insights and Discoveries," *IEEE Access*, Vol. 8, No. 1, pp. 42200–42216, 2020.
11. S. Feng and M. F. Duarte, "Few-Shot Learning-Based Human Activity Recognition," *Expert Systems with Applications*, Vol. 138, Dec. 2019.
12. H. Bai, M. F. Duarte, and R. Janaswamy, "Direction of Arrival Estimation for Complex Sources through ℓ_1-Norm Sparse Bayesian Learning," *IEEE Signal Processing Letters*, Vol. 26, No. 5, pp. 765–769, 2019.
13. S. Feng and M. F. Duarte, "Graph Autoencoder-Based Unsupervised Feature Selection with Broad and Local Data Structure Preservation," *Elsevier Neurocomputing*, Vol. 312, pp. 310–323, 2018.
14. A. C. Polak, M. Wagner, M. F. Duarte, D. L. Goeckel, and R. W. Jackson, "Mitigation of Spectral Leakage for Single Carrier, Block-Processing Cognitive Radio Receivers," *Digital Communications and Networks*, Vol. 4, No. 2, pp. 106–110, 2018.
15. H. Dadkhahi, M. F. Duarte, and B. Marlin, "Out-of-Sample Extension for Dimensionality Reduction of Noisy Time Series," *IEEE Transactions on Image Processing*, Vol. 26, No. 11, pp. 5435–5446, 2017.
16. D. Mo and M. F. Duarte, "Compressive Parameter Estimation with Earth Mover's Distance via K-Median Clustering," *Elsevier Signal Processing*, Vol. 142, pp. 36–52, 2017.
17. P. Misra, W. Hu, M. Yang, M. F. Duarte, and S. Jha, "Sparsity-Based Efficient Cross-Correlation Techniques in Sensor Networks," *IEEE Transactions on Mobile Computing*, Vol. 16, No. 7, pp. 2037–2050, 2017.
18. Y. Itoh, S. Feng, M. F. Duarte, and M. Parente, "Semisupervised Endmember Identification in Nonlinear Spectral Mixtures via Semantic Representation," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 55 No. 6, pp. 3272–3286, 2017.
19. S. Feng, Y. Itoh, M. Parente, and M. F. Duarte, "Hyperspectral Band Selection from Statistical Wavelet Models," *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 55 No. 4, pp. 2111–2123, 2017.
20. Y. Itoh, M. F. Duarte, and M. Parente, "Perfect Recovery Conditions for Non-Negative Sparse Modeling," *IEEE Transactions on Signal Processing*, Vol. 65 No. 1, pp. 69–80, 2017.
21. H. Dadkhahi and M. F. Duarte, "Masking Strategies for Image Manifolds," *IEEE Transactions on Image Processing*; Vol. 25 No. 9, pp. 4060–4079, 2016.
22. W. U. Bajwa, M. F. Duarte, and R. Calderbank, "Conditioning of Random Block Subdictionaries with Applications to Block-Sparse Recovery and Regression," *IEEE Transactions on Information Theory*, Vol. 61 No. 7, pp. 4060–4079, 2015.

23. A. C. Polak, M. F. Duarte, and D. L. Goeckel, "Performance Bounds for Grouped Incoherent Measurements in Compressive Sensing," *IEEE Transactions on Signal Processing*, Vol. 63 No. 11, pp. 2877–2887, 2015.

24. J. Zhu, D. Baron, and M. F. Duarte, "Complexity-Matching Universal Signal Estimation in Compressed Sensing," *IEEE Transactions on Signal Processing*, Vol. 63 No. 6, pp. 1512–1527, 2015.

25. K. Fyhn, M. F. Duarte, and S. H. Jensen, "Compressive Parameter Estimation for Sparse Translation-Invariant Signals Using Polar Interpolation," *IEEE Transactions on Signal Processing*, Vol. 63 No. 4, pp. 870–881, 2015.

26. R. Willett, M. F. Duarte, M. A. Davenport, and R. G. Baraniuk, "Sparsity and Structure in Hyperspectral Imaging: Sensing, Reconstruction, and Target Detection," in *IEEE Signal Processing Magazine*, Vol. 31 No. 1, pp. 116–126, 2014.

27. M. F. Duarte, M. B. Wakin, D. Baron, S. Sarvotham, and R. G. Baraniuk, "Measurement Bounds for Sparse Signal Ensembles via Graphical Models," *IEEE Transactions on Information Theory*, Vol. 59 No. 7, pp. 4280–4289, 2013.

28. M. F. Duarte and R. G. Baraniuk, "Spectral Compressive Sensing," *Applied and Computational Harmonic Analysis*, Vol. 35 No. 1, pp. 111–129, 2013.

29. M. F. Duarte, S. Jafarpour, and R. Calderbank, "Performance of the Delsarte-Goethals Frame on Clustered Sparse Vectors," *IEEE Transactions on Signal Processing*, Vol. 61 No. 8, pp. 1998–2008, 2013.

30. A. Anitha, A. Brasoveanu, M. F. Duarte, S. M. Hughes, I. Daubechies, J. Dik, K. Janssens, and M. Alfeld, "Restoration of X-ray Fluorescence Images of Underpaintings," *Elsevier Signal Processing*, Vol. 93 No. 3, pp. 592–604, 2013.

31. L. Applebaum, W. U. Bajwa, M. F. Duarte, and R. Calderbank, "Asynchronous Code-Division Random Access Using Convex Optimization," *Elsevier Physical Communication*, Vol. 5 No. 2, pp. 129–147, 2012.

32. M. F. Duarte and R. G. Baraniuk, "Kronecker Compressive Sensing," *IEEE Transactions on Image Processing*, Vol. 21 No. 2, pp. 494–504, 2012.

33. M. F. Duarte, G. Shen, A. Ortega, and R. G. Baraniuk, "Signal Compression in Wireless Sensor Networks," *Philosophical Transactions of the Royal Society A*, Vol. 370 No. 1958, pp. 118–135, 2012.

34. M. F. Duarte and Y. C. Eldar, "Structured Compressed Sensing: From Theory to Applications," *IEEE Transactions on Signal Processing*, Vol. 59 No. 9, pp. 4053–4085, 2011.

35. M. A. Davenport, C. Hegde, M. F. Duarte, and R. G. Baraniuk, "A Theoretical Analysis of Joint Manifolds," *IEEE Transactions on Image Processing*, Vol. 19 No. 10, pp. 2580–2594, 2010.

36. R. G. Baraniuk, V. Cevher, M. F. Duarte, and C. Hegde, "Model-based Compressive Sensing," *IEEE Transactions on Information Theory*, Vol. 56 No. 4, pp. 1982–2001, 2010.

37. M. F. Duarte and D. G. Stork, "Image Contour Fidelity Analysis of Mechanically Aided Enlargements of Jan van Eyck's Albergati Portrait," *Leonardo*, Vol. 43 No. 1, pp. 20, 43–50, 2010.

38. J. A. Tropp, J. N. Laska, M. F. Duarte, J. K. Romberg, and R. G. Baraniuk, "Beyond Nyquist: Efficient Sampling of Sparse Bandlimited Signals," *IEEE Transactions on Information Theory*, Vol. 56 No. 1, pp. 520–544, 2010.

39. M. F. Duarte, M. A. Davenport, D. Takhar, J. N. Laska, T. Sun, K. F. Kelly and R. G. Baraniuk, "Single-Pixel Imaging via Compressive Sampling," *IEEE Signal Processing Magazine,* Vol. 25 No. 2, pp. 83–91, 2008.

40. D. G. Stork and M. F. Duarte, "Revisiting Computer Image Analysis and Art," *IEEE Multimedia Magazine,* Vol. 14 No. 3, pp. 108–109, 2007.

41. D. G. Stork and M. F. Duarte, "Computer Vision, Image Analysis and Art, Part III," *IEEE Multimedia Magazine,* Vol. 14 No. 1, pp. 14–18, 2007.

42. M. F. Duarte and Y.-H. Hu, "Vehicle Classification in Distributed Sensor Networks," *Journal of Parallel and Distributed Computing,* Vol. 64 No. 7, pp. 826-838, 2004.

43. M. F. Duarte and Y.-H. Hu, "Distance Based Decision Fusion in Distributed Wireless Sensor Networks," *Telecommunication Systems,* Vol. 26 No. 2-4, pp. 339-350, 2004.

CONFERENCE PUBLICATIONS

44. R. Shah and M. F. Duarte, "SpectraMorph: Structured Latent Learning for Self-Supervised Hyperspectral Super-Resolution," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Barcelona, Spain, May 2026.

45. R. Shah and M. F. Duarte, "SpectraLift: Physics-Guided Spectral-Inversion Network for Self-Supervised Hyperspectral Image Super-Resolution," in *IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS),* Barcelona, Spain, November 2025.

46. T. Wickremasinghe and M. F. Duarte, "Affine Subspace Models and Clustering for Patch-Based Image Denoising," in *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 2025.

47. R. Roscher, B. Bohn, M. F. Duarte, and J. Garcke, "Explain It To Me - Facing Remote Sensing Challenges in the Bio- and Geosciences with Explainable Machine Learning," in *Int. Society for Photogrammetry and Remote Sensing Congress (SPRS)*, Nice, France, June 2020.

48. S. Feng, and M. F. Duarte, "Graph Autoencoder-Based Unsupervised Feature Selection," in *Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, October 2018.

49. D. Mo and M. F. Duarte, "Multi-Branch Binary Modulation Sequences for Interferer Rejection," in *IEEE Statistical Signal Processing Workshop (SSP)*, Freiburg, Germany, June 2018, pp. 288–292.

50. Z. Yang, M. F. Duarte, and A. Ganz, "A Novel Crowd-Resilient Visual Localization Algorithm via Robust PCA Background Extraction," in *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Calgary, AB, April 2018, pp. 1922–1926.

51. S. Hamzehei and M. F. Duarte, "Compressive Direction-of-Arrival Estimation Off The Grid," in *Asilomar Conf. Signals, Systems, and Computers*, Pacific Grove, CA, November 2016, pp. 1081–1085.

52. S. Feng, Y, Itoh, M. F. Duarte, and M. Parente, "Band Selection from Statistical Wavelet Models," in *IEEE Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS),* Los Angeles, CA, August 2016.

53. D. Mo and M. F. Duarte, "Compressive Line Spectrum Estimation with Clustering and Interpolation," in *Conf. Information Sciences and Systems (CISS),* Princeton, NJ, March 2016, pp. 572–577.

54. D. Mo and M. F. Duarte, "Design of Spectrally Shaped Binary Sequences via Randomized Convex Relaxations," in *Asilomar Conf. Signals, Systems, and Computers*, Pacific Grove, CA, November 2015, pp. 164–168.

55. H. Dadkhahi, M. F. Duarte, and B. Marlin, "Isomap Out-of-Sample Extension for Noisy Time Series Data," in *IEEE Int. Workshop on Machine Learning for Signal Processing (MLSP),* Boston, MA, September 2015.

56. S. Feng, M. F. Duarte, and M. Parente, "Performance Guarantees for Sparse Regression-Based Unmixing," in *IEEE/ISPRS Workshop "Looking from Above: When Earth Observation Meets Vision" (EARTHVISION) at the Computer Vision and Pattern Recognition Conf. (CVPR),* Boston, MA, June 2015.

57. Y. Itoh, M. F. Duarte, and M. Parente, "Performance Guarantees for Sparse Regression-Based Unmixing," to appear in *Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS),* Tokyo, Japan, June 2015.

58. H. Dadkhahi and M. F. Duarte, "Image Masking Schemes for Local Manifold Learning Methods," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Brisbane, Australia, April 2015, pp. 5768–5772.

59. S. Hamzehei and M. F. Duarte, "Compressive Parameter Estimation via Approximate Message Passing," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Brisbane, Australia, April 2015, pp. 3327–3331.

60. S. Feng, Y. Itoh, M. Parente, and M. F. Duarte, "Tailoring Non-Homogeneous Markov Chain Models for Hyperspectral Signature Classification," in *IEEE Int. Conf. Image Processing (ICIP),* Paris, France, October 2014, pp. 5073–5077.

61. Y. Itoh, S. Feng, M. F. Duarte, and M. Parente, "Hyperspectral Unmixing via Semantic Spectral Representations," in *IEEE Int. Midwest Symposium on Circuits and Systems (MWSCAS),* College Station, TX, August 2014, pp. 149–152.

62. H. Dadkhahi and M. F. Duarte, "Masking Schemes for Image Manifolds," in *IEEE Statistical Signal Processing Workshop (SSP),* Gold Coast, Australia, July 2014, pp. 256–259.

63. J. Zhu, D. Baron, and M. F. Duarte, "Complexity-Adaptive Universal Signal Estimation for Compressed Sensing," in *IEEE Statistical Signal Processing Workshop (SSP),* Gold Coast, Australia, July 2014, pp. 396–399.

64. W. U. Bajwa, M. F. Duarte, and R. Calderbank, "Average Case Analysis of High-Dimensional Block-Sparse Recovery and Regression for Arbitrary Designs," in *Int. Conf. Artificial Intelligence and Statistics (AISTATS),* Reykjavik, Iceland, April 2014, pp. 57–67.

65. K. Eykholt and M. F. Duarte, "A Matlab Toolbox for Visualization of Image Manifolds," invited to *IEEE Global Conf. Signal and Information Processing (GlobalSIP)*, Austin, TX, December 2013, p. 633.

66. K. Fyhn, M. F. Duarte, and S. H. Jensen, "Compressive Time Delay Estimation Using Interpolation," invited to *IEEE Global Conf. Signal and Information Processing (GlobalSIP)*, Austin, TX, December 2013, p. 624.

67. M. F. Duarte and M. Parente, "Non-Homogeneous Hidden Markov Chain Models for Wavelet-Based Hyperspectral Image Processing," in *Allerton Conf. Communication, Control, and Computing,* Monticello, IL, October 2013, pp. 154–159.

68. D. Mo and M. F. Duarte, "Compressive Parameter Estimation with Earth Mover's Distance via K-Median Clustering," invited to *Wavelets and Sparsity XV at SPIE Optical Engineering + Applications*, San Diego, CA, August 2013.

69. M. Parente and M. F. Duarte, "A New Semantic Wavelet-Based Spectral Representation," in *Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Gainesville, FL, June 2013.

70. K. Fyhn, H. Dadkhahi, and M. F. Duarte, "Spectral Compressive Sensing with Polar Interpolation," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 2013, pp. 6225-6229.

71. A. C. Polak, M. F. Duarte, R. W. Jackson, and D. L. Goeckel, "Recovery of Sparse Signals from Amplitude-Limited Sample Sets," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 2013, pp. 4663–4667.

72. A. C. Polak, M. F. Duarte, and D. L. Goeckel, "Grouped Incoherent Measurements for Compressive Sensing," in *IEEE Statistical Signal Processing Workshop (SSP)*, Ann Arbor, MI, August 2012, pp. 732–735.

73. M. F. Duarte, "Localization and Bearing Estimation via Structured Sparsity Models," in *IEEE Statistical Signal Processing Workshop (SSP)*, Ann Arbor, MI, August 2012, pp. 333–336.

74. S. Jafarpour, M. F. Duarte, and R. Calderbank, "Beyond Worst-Case Reconstruction in Deterministic Compressed Sensing," in *IEEE Int. Symposium on Information Theory (ISIT)*, Cambridge, MA, July 2012, pp. 1852–1856.

75. M. F. Duarte, T. E. Matthews, W. S. Warren, and R. Calderbank. "Melanoma Classification from Hidden Markov Tree Features," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Kyoto, Japan, March 2012. pp. 685–688.

76. M. J. Simpson, J. W. Wilson, T. E. Matthews, M. F. Duarte, R. Calderbank, and W. S. Warren, "Imaging the Distribution of Melanin in Human Skin Lesions with Pump-probe Microscopy," *Laser Science,* San Jose, CA, October 2011.

77. D. Baron and M. F. Duarte, "Universal MAP Estimation in Compressed Sensing," in *Allerton Conf. Communication, Control, and Computing,* Monticello, IL, September 2011. pp. 768–775.

78. A. Anitha, A. Brasoveanu, M. F. Duarte, S. Hughes, I. Daubechies, J. Dik, and K. Janssens, "Virtual Underpainting Reconstruction from X-ray Fluorescence Imaging Data," in *European Signal Processing Conf. (EUSIPCO)*, Barcelona, Spain, August 2011. pp. 1239–1243.

79. M. F. Duarte and R. G. Baraniuk, "Compressive Sensing with Biorthogonal Wavelets via Structured Sparsity," in *Workshop on Signal Processing with Adaptive Sparse Representations (SPARS),* Edinburgh, Scotland, June 2011.

80. V. Kostina, M. F. Duarte, S. Jafarpour, and R. Calderbank, "The Value of Redundant Measurement in Compressed Sensing," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Prague, Czech Republic, May 2011. pp. 3656–3659.

81. M. F. Duarte, S. Jafarpour, and R. Calderbank, "New Wavelet Coefficient Raster Scannings for Compressive Imaging," in *Int. Conf. Sampling Theory and Applications (SAMPTA)*, Singapore, May 2011.

82. M. F. Duarte, W. Bajwa, and R. Calderbank, "Regression Performance of Group Lasso for Arbitrary Design Matrices," in *Int. Conf. Sampling Theory and Applications (SAMPTA)*, Singapore, May 2011.

83. M. A. Davenport, C. Hegde, M. F. Duarte, and R. G. Baraniuk, "High-Dimensional Data Fusion via Joint Manifold Learning," in *AAAI Fall 2010 Symposium on Manifold Learning*, Arlington, VA, November 2010. pp. 20–27.

84. M. F. Duarte and R. G. Baraniuk, "Recovery of Frequency-Sparse Signals from Compressive Measurements," in *Allerton Conf. Communication, Control, and Computing,* Monticello, IL, September 2010. pp. 599–606.

85. L. Applebaum, W. U. Bajwa, M. F. Duarte, and R. Calderbank, "Multiuser Detection in Asynchronous On-Off Random Access Channels Using Lasso," in *Allerton Conf. Communication, Control, and Computing,* Monticello, IL, September 2010. pp. 130–137.

86. E. Dyer, M. F. Duarte, D. H. Johnson and R. G. Baraniuk, "Recovering Spikes from Noisy Neuronal Calcium Signals via Structured Sparse Approximation," in *Int. Conf. Latent Variable Analysis and Signal Separation (LVA/ICA),* Saint-Malo, France, September 2010. pp. 604–611.

87. S. Schnelle, J. N. Laska, C. Hegde, M. F. Duarte, M. A. Davenport and R. G. Baraniuk, "Texas Hold 'Em Algorithms for Distributed Compressive Sensing," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Dallas, TX, March 2010. pp. 2886–2889.

88. M. F. Duarte and R. G. Baraniuk, "Kronecker Product Matrices for Compressive Sensing," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Dallas, TX, March 2010. pp. 3650–3653.

89. T. Sun, G. Woods, M. F. Duarte, K. F. Kelly, C. Li, and Y. Zhang, "OBIC Measurements without Lasers or Raster-Scanning Based On Compressive Sensing," in *Int. Symposium for Testing and Failure Analysis (ISTFA),* San Jose, CA, November 2009. pp. 272–277.

90. M. F. Duarte, V. Cevher, and R. G. Baraniuk, "Model-Based Compressive Sensing for Signal Ensembles," in *Allerton Conf. Communication, Control, and Computing,* Monticello, Illinois, September 2009. pp. 244–250.

91. C. Hegde, M. F. Duarte, and V. Cevher, "Compressive Sensing Recovery of Spike Trains Using a Structured Sparsity Model," in *Workshop on Signal Processing with Adaptive Sparse Representations (SPARS),* Saint Malo, France, April 2009.

92. M. F. Duarte, C. Hegde, V. Cevher, and R. G. Baraniuk, "Recovery of Compressible Signals in Unions of Subspaces," in *Conf. Information Sciences and Systems (CISS),* Baltimore, MD, March 2009. pp. 175–180.

93. V. Cevher, M. F. Duarte, C. Hegde, and R. G. Baraniuk, "Sparse Signal Recovery Using Markov Random Fields," in *Neural Information Processing Systems (NeurIPS),* Vancouver, Canada, December 2008. pp. 257–264.

94. V. Cevher, A. Sankaranarayanan, M. F. Duarte, D. Reddy, R. G. Baraniuk, and R. Chellappa, "Compressive Sensing for Background Subtraction," in *European Conf. Computer Vision (ECCV),* Marseille, France, October 2008. pp. 155–168.

95. V. Cevher, M. F. Duarte, and R. G. Baraniuk, "Distributed Localization via Spatial Sparsity," invited to *European Signal Processing Conf. (EUSIPCO),* Lausanne, Switzerland, August 2008.

96. M. F. Duarte, S. Sarvotham, D. Baron, M. B. Wakin, and R. G. Baraniuk, "Performance Limits for Jointly Sparse Signals via Graphical Models," invited to *Sensor, Signal and Information Processing Workshop (SenSIP),* Sedona, AZ, May 2008.

97. M. F. Duarte, M. B. Wakin, and R. G. Baraniuk, "Wavelet-domain Compressive Signal Reconstruction Using a Hidden Markov Tree Model," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Las Vegas, NV, March 2008. pp. 5137–5140.

98. M. F. Duarte, M. A. Davenport, M. B. Wakin, J. N. Laska, D. Takhar, K. F. Kelly, and R. G. Baraniuk, "Multiscale Random Projections for Compressive Classification," in *IEEE Int. Conf. Image Processing (ICIP),* San Antonio, TX, September 2007. pp. VI-161–164.

99. P. Boufounos, M. F. Duarte, and R. G. Baraniuk, "Sparse Signal Reconstruction from Noisy Compressive Measurements Using Cross Validation," invited to *IEEE Workshop on Statistical Signal Processing (SSP),* Madison, WI, August 2007. pp. 299–303.

100. J. N. Laska, S. Kirolos, M. F. Duarte, T. S. Ragheb, R. G. Baraniuk, and Y. Massoud, "Theory and Implementation of an Analog to Information Conversion using Random Demodulation," in *IEEE Int. Symposium on Circuits and Systems (ISCAS),* New Orleans, LA, May 2007. pp. 1959–1962.

101. M. A. Davenport, M. F. Duarte, M. B. Wakin, J. N. Laska, D. Takhar, K. F. Kelly, and R. G. Baraniuk, "The Smashed Filter for Compressive Classification and Target Recognition," invited to *Computational Imaging V at IS&T/SPIE Electronic Imaging,* San Jose, CA, January 2007.

102. D. G. Stork and M. F. Duarte, "Fidelity Analysis of Mechanically Aided Copying/Enlarging of Jan van Eyck's Portrait of Niccolò Albergati," invited to *Vision Geometry XV at IS&T/SPIE Electronic Imaging,* San Jose, CA, January 2007.

103. S. Kirolos, T. S. Ragheb, J. N. Laska, M. F. Duarte, Y. Massoud, and R. G. Baraniuk, "Practical Issues in Implementing Analog-to-Information Converters," in *Int. Workshop on System-on-Chip for Real-Time Applications (IWSoC),* Cairo, Egypt, December 2006. pp. 141–146.

104. M. B. Wakin, J. N. Laska, M. F. Duarte, D. Baron, S. Sarvotham, D. Takhar, K. F. Kelly, and R. G. Baraniuk, "An Architecture for Compressive Imaging," invited to *IEEE Int. Conf. Image Processing (ICIP),* Atlanta, GA, October 2006. pp. 1273–1276.

105. S. Kirolos, J. N. Laska, M. B. Wakin, M. F. Duarte, D. Baron, T. S. Ragheb, Y. Massoud, and R. G. Baraniuk, "Analog-to-Information Conversion via Random Demodulation," in *IEEE Dallas Circuits and Systems Workshop (DCAS),* Dallas, TX, October 2006. pp. 71–74.

106. J. A. Tropp, M. B. Wakin, M. F. Duarte, D. Baron, and R. G. Baraniuk, "Random Filters for Compressive Sampling and Reconstruction," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Toulouse, France, May 2006. pp. III-872–875.

107. M. F. Duarte, M. A. Davenport, M. B. Wakin, and R. G. Baraniuk, "Sparse Signal Detection from Incoherent Projections," in *IEEE Int. Conf. Acoustics, Speech, and Signal Processing (ICASSP),* Toulouse, France, May 2006. pp. III-305–308.

108. M. F. Duarte, M. B. Wakin, D. Baron, and R. G. Baraniuk, "Universal Distributed Sensing via Random Projections," in *Int. Conf. Information Processing in Sensor Networks (IPSN),* Nashville, TN, April 2006. pp. 177–185.

109. M. B. Wakin, J. N. Laska, M. F. Duarte, D. Baron, S. Sarvotham, D. Takhar, K. F. Kelly, and R. G. Baraniuk, "Compressive Imaging for Video Representation and Coding," invited to *Picture Coding Symposium (PCS),* Beijing, China, April 2006.

110. D. Takhar, J. N. Laska, M. B. Wakin, M. F. Duarte, D. Baron, S. Sarvotham, K. F. Kelly, and R. G. Baraniuk, "A New Compressive Imaging Camera Architecture using Optical-Domain Compression," invited to *Computational Imaging IV at IS&T/SPIE Electronic Imaging,* San Jose, CA, January 2006. pp. 43–52.

111. M. B. Wakin, M. F. Duarte, S. Sarvotham, D. Baron, and R. G. Baraniuk, "Recovery of Jointly Sparse Signals from Few Random Projections," in *Neural Information Processing Systems (NeurIPS),* Vancouver, Canada, December 2005. pp. 1435–1442.

112. M. F. Duarte, S. Sarvotham, D. Baron, M. B. Wakin, and R. G. Baraniuk, "Distributed Compressed Sensing of Jointly Sparse Signals," invited to *Asilomar Conf. Signals, Systems, and Computers,* Pacific Grove, CA, November 2005. pp. 1537–1541.

113. M. F. Duarte, M. B. Wakin, and R. G. Baraniuk, "Fast Reconstruction of Piecewise Smooth Signals from Random Projections," in *Workshop on Signal Processing with Adaptative Sparse Structured Representations (SPARS),* Rennes, France, 2005.

114. M. F. Duarte, S. Sarvotham, M. B. Wakin, D. Baron, and R. G. Baraniuk, "Joint Sparsity Models for Distributed Compressed Sensing," in *Workshop on Signal Processing with Adaptative Sparse Structured Representations (SPARS),* Rennes, France, 2005.

115. D. Baron, M. F. Duarte, S. Sarvotham, M. B. Wakin, and R. G. Baraniuk, "An Information-Theoretic Approach to Distributed Compressed Sensing," invited to *Allerton Conf. Communication, Control, and Computing,* Monticello, IL, September 2005. pp. 814–825.

116. M. F. Duarte, and Y.-H. Hu, "Optimal Decision Fusion With Applications to Target Detection in Wireless Ad Hoc Sensor Networks," in *IEEE Int. Workshop on Multimedia Signal Processing (MMSP),* Siena, Italy, 2004. pp. 319–322.

117. M. F. Duarte, and Y.-H. Hu, "Optimal Decision Fusion With Applications to Target Detection in Wireless Ad Hoc Sensor Networks," in *IEEE Int. Conf. Multimedia and Expo (ICME),* Taipei, Taiwan, 2004. pp. 1803–1806.

118. M. F. Duarte, and Y.-H. Hu, "Distance Based Decision Fusion in a Distributed Wireless Sensor Network," in *Int. Workshop on Information Processing in Sensor Networks (IPSN),* Palo Alto, CA, 2003. pp. 392–404.

SELECTED TECHNICAL REPORTS

119. C. Anderson, S. Araki, P. Bjørstad, H.-J. Bungartz, K. Dow, C. Draxl, M. Duarte, I.-G. Farcas, L. Gao, J. Garcke, P. Grandinetti, P. Haehnel, M. Haghighatlari, J. Hittinger, R. Jäkel, F. Jenko, D. Kim, R. Martin, E. Molloy, S. Park, M. Scheffler, J. Schürg, E. Sousa, J. Sunu, and C. W. Tan, "White Paper: Science at Extreme Scales: Where Big Data Meets Large-Scale Computing — IPAM Long Program, Fall 2018", available at `http://www.ipam.ucla.edu/wp-content/uploads/2019/01/BDC2018-white-paper.pdf`, December 2018.

120. S. Feng, Y. Itoh, M. Parente, and M. F. Duarte, "Wavelet-Based Semantic Features for Hyperspectral Signature Discrimination," available at `http://arxiv.org/pdf/1602.03903`, February 2016.

121. M. F. Duarte, W. U. Bajwa and R. Calderbank, "The performance of group lasso for linear regression of grouped variables," Technical Report TR-2010-10, Department of Computer Science, Duke University, February 2011.

122. W. U. Bajwa, M. F. Duarte, and R. Calderbank, "On the Conditioning of Random Block Subdictionaries," Technical Report TR-2010-06, Department of Computer Science, Duke University, September 2010.

123. R. S. Wagner, J. R. Stinnett, M. F. Duarte, R. G. Baraniuk, D. B. Johnson and T. S. E. Ng, "A Network Application Programming Interface for Data Processing in Sensor Networks," Technical Report TREE-0705, Department of Electrical and Computer Engineering, Rice University, April 2007.

124. D. Z. Baron, M. B. Wakin, M. F. Duarte, S. Sarvotham, and R. G. Baraniuk, "Distributed Compressed Sensing," Technical Report TREE-0612, Department of Electrical and Computer Engineering, Rice University, November 2006.

PATENTS

125. R. G. Baraniuk, D. Z. Baron, M. F. Duarte, M. El-Nozahi, M. B. Wakin, M. A. Davenport, J. N. Laska, J. A. Tropp, Y. Massoud, S. Kirolos, and T. Ragheb, "Method and Apparatus for On-Line Compressed Sensing," U.S. Patent 8,687,689, issued April 1, 2014.

126. R. G. Baraniuk, M. F. Duarte, M. A. Davenport, and M. B. Wakin, "Method and Apparatus for Signal Detection, Classification, and Estimation from Compressive Measurements," U.S. Patent 8,483,492, issued July 9, 2013.

127. R. G. Baraniuk, D. Z. Baron, M. F. Duarte, K. F. Kelly, C. C. Lane, J. N. Laska, D. Takhar, and M. B. Wakin, "Method and Apparatus for Compressive Imaging Device," U.S. Patent 8,199,244, issued June 12, 2012.

128. R. G. Baraniuk, D. Z. Baron, M. F. Duarte, S. Sarvotham, M. B. Wakin, and M. A. Davenport, "Method and Apparatus for Distributed Compressed Sensing," U.S. Patents 7,511,643, issued March 31, 2009, and 7,271,747, issued September 18, 2007.