

# Gonzalo R. Arce

University of Delaware  
Dept. of Electrical and Computer Engineering  
Evans Hall Room 312  
Newark, DE 19716

Telephone: (302) 831-1493  
Mobile: (302) 690-6298  
arce@udel.edu  
<http://www.udel.edu/~arce/>

---

## Education

**Ph.D. in Electrical Engineering** (1982) Purdue University, West Lafayette, IN 47907. *Research Topic: Theory and Analysis of Median Filters.*

**Master of Science in Electrical Engineering** (1980) Purdue University, West Lafayette, IN 47907.

**Bachelor of Science in Electrical Engineering** (1979) *Summa Cum Laude*  
University of Arkansas, Fayetteville, AR 72701.

---

## Professional Experience

**University of Delaware, Newark, DE 19716**

**Charles Black Evans Professor**

**JPMorgan Chase Faculty Fellow**

Department of Electrical and Computer Engineering and  
Institute of Financial Services Analytics. 2017-Present.

**Fulbright-Nokia Distinguished Chair in Information and  
Communications Technologies**

Aalto University, Helsinki, Finland. 2017.

**University of Delaware, Newark, DE 19716**

**Charles Black Evans Professor**

**JPMorgan Chase Faculty Scholar**

Department of Electrical and Computer Engineering and  
Institute of Financial Services Analytics. 2014-2017.

**Fulbright-Nokia Distinguished Chair in Information and  
Communications Technologies**

Aalto University, Helsinki, Finland. 2010-2011.

**University of Delaware, Newark, DE 19716**

**Charles Black Evans Distinguished Professor and Chairman**

Department of Electrical and Computer Engineering. 2004-2009.

**University of Delaware, Newark, DE 19716**

**Professor and Chairman**

Department of Electrical and Computer Engineering. 2000-2004.

**University of Delaware, Newark, DE 19716**

**Interim Chairman**

Department of Electrical and Computer Engineering. 1999.

**University of Delaware, Newark, DE 19716**

**Professor**

Department of Electrical and Computer Engineering. 1992-1996.

**University of Delaware, Newark, DE 19716**

**Associate Professor**

Department of Electrical and Computer Engineering. 1987-1992.

**Unisys Corporate Research center, Reston, VA 19716**

**Visiting Member of Technical Staff.** 1985.

Gonzalo R. Arce

**University of Delaware, Newark, DE 19716**

**Assistant Professor**

Department of Electrical and Computer Engineering. 1982-1987.

**Purdue University, West Lafayette, IN 47907**

**Research Assistant**

School of Electrical and Computer Engineering. 1980-1982.

---

*Awards and  
Honors*

JPMorgan Chase Senior Faculty Fellow at the Institute of Financial Services Analytics, 2017-Present.

Fulbright-Nokia Distinguished Chair in Information Technologies and Communications 2017.

JPMorgan Chase Scholar at the Institute of Financial Services Analytics, 2014-2016.

Fulbright-Nokia Distinguished Chair in Information Technologies and Communications Helsinki, Finland, 2010-2011.

Elected Member, Arkansas Academy of Engineering, University of Arkansas, 2008.

DuPont Science and Engineering Awards 1998, 2002, 2008.

Fellow of the IEEE for contributions on the theory and applications of nonlinear signal processing, 2000.

Fellow of the International Society for Optics and Photonics (SPIE) for contributions to computational imaging, 2019.

Fellow, Center for Advanced Studies, University of Delaware, 1998.

ARL ATIRP Federated Laboratory Symposium Best Paper Award 1997.

Best Scientific Paper Award, Whitaker Foundation and Rehabilitation Engineering Society of North America (RESNA), 1995.

ASEE Teaching Fellow, 1992.

Sperry Corporation Research Award, 1985.

National Science Foundation Research Initiation Award, 1983.

---

*Awards to  
Students  
Supervised*

Allan P. Colburn Prize in Mathematical Sciences and Engineering for the most outstanding dissertation in the engineering and mathematical disciplines, Xu Ma (2010).

Allan P. Colburn Prize in Mathematical Sciences and Engineering for the most outstanding dissertation in the engineering and mathematical disciplines, Yinbo Li (2006).

Allan P. Colburn Prize in Mathematical Sciences and Engineering for the most outstanding dissertation in the engineering and mathematical disciplines, Juan G. Gonzalez (2002).

Allan P. Colburn Prize in Mathematical Sciences and Engineering for the most outstanding dissertation in the engineering and mathematical disciplines, Kenneth Barner (1992).

---

*Editorial  
Boards*

Special Issue of the Journal of Electronic Imaging on Compressed Sensing, SPIE, 2012-2013

IEEE Transactions on Signal Processing, 1999-2003.

IEEE Transactions on Acoustics, Speech, and Signal Processing, 1991-1996.

IEEE Transactions on Image Processing, 1995-1996.

Optics Express, 1998.

EURASIP Journal on Applied Signal Processing, 2001-2005.

Special Issue of JASP, Nonlinear Signal Processing and Applications, Dec. 2002.

Special Issue of JASP, Nonlinear Signal Processing and Applications, Dec. 2001.

---

*Professional Societies and Activities*

• **The Institute of Electrical and Electronics Engineers (IEEE)**

IEEE Society on Signal Processing

- IEEE Fellow.
- Tutorials Chair, International Conference on Acoustics, Speech, and Signal Processing, 2005.
- Co-Chair, Nonlinear Signal and Image Processing Workshop, 2001.
- Program Committee, Workshop on Nonlinear Digital Signal Processing, 1993, 1995, 1997, 1999, 2003, 2005.
- Program Committee, International Conference on Image Processing, 1994, 1998.
- Program Committee, ICASSP, 1994.
- Technical Committee Chair, MicroDelcon Conference, 1983.
- Student Chapter Advisor, 1985-1993.

IEEE Circuits and Systems Society

- Member, Technical Committee on Digital Signal Processing, 1985-2003.
- Program Committee, Midwest Symposium on Circuits and Systems, 1989.
- Program Committee, International Symposium on Circuits and Systems, 1997.

• **Optical Society of America**

- Guest Editor, Optics Express.

• **Nonlinear Signal and Image Processing Board**

- Board Founding Member.
- Program Committee Member, NSIP. 1993, 1995.
- General Co-Chair, NSIP Workshop, 2001.

• **International Society for Optics and Photonics**

- SPIE Fellow
- Guest Editor, Journal of Electronic Imaging, Special Issue on Compressed Sensing, 2012-2013.
- Conference Co-Chair, SPIE Symposium on Security and Defense, Compressed Sensing, 2013, 2014, 2015.
- General Co-Chair, International Symposium on Computers and Information Technology (IT COM 2002).
- Conference Co-Chair, Symposium on Nonlinear Electronic Imaging, 1990, 1991.
- Lecturer, Short Course on Nonlinear Image Processing, 1990.

• **European Association of Signal and Image Processing (EURASIP)**

- Program committee, European Signal and Image Processing Conference, 1997, 2000.
- Lecturer, EURASIP Short Course on Compressed Sensing and Its Applications in Imaging, Aalborg Denmark, 2010.

---

*Boards and Panels*

- Natural Sciences and Engineering of the Academy of Finland, Academy Professorship Proposal Review, 2009.
- Research Grants Council (RGC) of Hong Kong, Review Panel, 2009.
- National Science Foundation, Review panel for CISE Division, 2009, 2012, 2014,2015,2016.
- National Science Foundation, Review panel for CAREER Awards, 2009, 2011, 2013, 2014,2015.
- External Advisory Board, College of Engineering, University of Central Florida, 2004 - 2007.
- Image Science and Technology, Advisory Board Member, 1998, 1999, 2001.

Gonzalo R. Arce

- Army's Telecommunications and Information Distribution (ATIRP) Federated Laboratory Consortium Management Board, 1997-1998.
- National Science Foundation, Review panel for Microelectronics and Information Processing Division, 1986, 1988, 1995, 2000.
- National Science Foundation, Review panel for the Small Bus. Innovation Awards, 1994.
- Canada Research Office, Review panel for the Postdoctoral Awards Program, 1996.
- University IDEAS, Bogota, Colombia, Scientific Advisory Board Member, 1997.
- Chair, Panel on Signal Processing for Heavy Tailed-Distributions, 1998.

---

*Post Doctoral Supervision*

- Iftekar Mirza (PhD Delaware, jointly with D. Prather): Compressive spectral imaging, 2010 - 2012.
- Jan Bacca (PhD Delaware): Voronoi dithering for multitone, 2007-2009.
- InKoo Kang (PhD KAIST - Korea): Visual cryptography and authentication, 2007-2009.
- Jose L. Paredes (PhD Delaware): UWB communications with compressive sensing, 2006, 2008 - 2009.
- Daniel L. Lau (PhD University of Delaware): Electronic printing, 2001.
- Sudhakar Kalluri (PhD University of Delaware): Communications theory, 1998.

---

*Ph.D Student Supervision*

- [1]. Michael Don, "IR spectral compressive imaging," in progress.
- [2]. Edgar Salazar, "Compressed Imaging and Sensors", in progress.
- [3]. Juan Florez, "Graph Signal Processing and its applications to spectral imaging", (Co-advised with K. Barner), in progress.
- [4]. Xiao Ma, "LED-based compressive spectral temporal imaging," in progress.
- [5]. Karellaia Pena, "Graph Signal Processing and Learning with Applications in Imaging," in progress.
- [6]. Carlos Restrepo, "Spectral Tomography Sensing," in progress.
- [7]. Maria Daniela Dapena, "Machine Learning for Financial Services Analytics", in progress.
- [8]. Angela Cuadros, "Compressive Spectral CT imaging," Now with Mathworks.
- [9]. Alejandro Parada, "Blue Noise Sampling on Graphs,". Now with the University of Pennsylvania.
- [10]. Laura Galvis, "Coded Aperture Design in Compressive Spectral Imaging," . Now with Universidad Industrial de Santander, Colombia.
- [11]. Chen Fu, "Polarimetric spectral imaging," Now with Sony Research Laboratory.
- [12]. Juan Becerra, "Iterative sparse recovery from high-dimensional measurements," 2017. Now with Universidad de Sevilla, Spain.
- [13]. Claudia Correa, "Optical coding in compressive spectral imaging systems and the multi-resolution reconstruction problem," 2017. Now with Boston University.
- [14]. Hoover Rueda, "Compressive coded-aperture multimodal imaging systems," 2017. Now with Boston University.
- [15]. Andre Rauh, "Fast Algorithms for Selection and Multidimensional Sparse Fourier Transform," 2015.
- [16]. Gonzalo Garateguy, "Optimal embedding of QR codes into color, gray scale and binary images," 2014. Now with Mathworks.
- [17]. Henry Arguello, "Coded aperture optimization in compressive spectral imaging," 2013. Now with Universidad Industrial de Santander, Colombia.

- [18]. Ana Ramirez, "Compressive spectral image classification," 2013. Now with Universidad Industrial de Santander, Colombia.
- [19]. Jirar Helou (F. Kiamilev co-advisor), "CMOS architectures for threshold data converters," 2011. Now with Intel.
- [20]. Ivan Barrera, "Statistical Approaches to Congestion Control in Internet Routers," 2010. Now with Intel.
- [21]. Zhongmin Wang, "Ultra Wide Band Compressed Sensing," 2010. Now with Qualcomm.
- [22]. Xu Ma, "Optimization of resolution enhancement techniques in optical lithography," Winner of the Allan P. Colburn Best Dissertation Award as the most outstanding doctoral dissertation in engineering, mathematics, and computer sciences, 2009. Currently on the faculty at the Beijing Institute of Technology.
- [23]. Michael Wilson, "Projectile Navigation and the application to magnetometers," 2007. Now with the Army Research Laboratories.
- [24]. Jan Bacca, "Blue Noise Methods for Hexagonal Grids and Multitone Dithering," 2007. Now with the University Nacional de Colombia in Bogota.
- [25]. Renwei Ge, "Information Security in Mobile Ad Hoc Networks," 2006. Now with Qualcomm.
- [26]. Yinbo Li, "Nonlinear signal processing in the complex domain and high dimensions," Winner of the Allan P. Colburn Best Dissertation Award as the most outstanding doctoral dissertation in engineering, mathematics, and computer sciences, 2005. Now with Qualcomm.
- [27]. Liangping Ma (K. Barner co-advisor), "Signal processing analysis and algorithms for internet congestion control," 2005. Now with San Diego Research Center.
- [28]. Karen Bloch, "Signal analysis methods for biological data," 2004. Now with DuPont.
- [29]. Sebastian Hoyos (B. Sadler co-advisor), "Mixed signal high speed processing solutions for broadband systems and technologies," 2004. Now with the faculty at Texas A & M University.
- [30]. Zhi Zhou, "Advances on digital video and visual cryptography," 2004. Now with Google Research.
- [31]. Cesar Nino, "New imaging technologies in halftoning: data hiding, color modeling and color matching," 2002. Now with Pontificia Universidad Javeriana, Bogota, Colombia.
- [32]. Jose Luis Paredes, "New robust signal processing tools for multimedia and communications," 2001. Now with the faculty at the University of Los Andes, Venezuela.
- [33]. Alexander Flaig, "Nearfield spot-beamforming," Aug. 2000. Now with Texas Instruments.
- [34]. Liehua Xie, "Authentication codes and watermarking for multimedia communications in lossy networks," May 2000. Now with Eye Cast.
- [35]. Daniel L. Lau (N. C. Gallagher co-supervisor), "Modern digital halftoning," May 1999. Now with the faculty at the University of Kentucky.
- [36]. Sudhakar Kalluri, "Nonlinear adaptive algorithms for robust signal processing and communication in impulsive environments," Dec. 1998. Now with Intel.
- [37]. Juan G. Gonzalez, "Robust technologies for wireless communications in non-gaussian environments," Winner of the Allan P. Colburn Best Dissertation Award as the most outstanding doctoral dissertation in engineering, mathematics, and computer sciences, May 1997.
- [38]. David E. Griffith, "Robust time-frequency representations for signals in alpha-stable noise: methods and applications," December 1997. Now with NIST.
- [39]. Edwin A. Heredia, "A piecewise polynomial theory for nonlinear signal processing," May 1996. Now with Microsoft Research.
- [40]. Yeong T. Kim, "Permutation and combination filter lattices and their applications in nonlinear signal processing," Aug. 1993. Now VP of Samsung America.

- [41]. Timothy Hall, "Permutation and combination weighted order stastic filters for image processing," May 1994. Now with NIST.
- [42]. Martin Mueller, "Tomographic algorithms and synthetic detector arrays," May 1993. Now with Siemens Corp.
- [43]. Kenneth E. Barner, "Permutation filters: a new group theoretic class of non-linear filters," Winner of the Allan P. Colburn Best Dissertation Award as the most outstanding doctoral dissertation in engineering, mathematics, and computer sciences, May 1993. Now with the faculty at the University of Delaware.
- [44]. Shoupu Chen, "Micro-structured adoptive filter theory for robust signal processing," May 1992. Now with Kodak Research.
- [45]. David C. Brown (C. Ih co-supervisor), "Scene segmentation and definition for autonomous robotic navigation using structured light processing," May 1989. Now with the Army Research Laboratories.

---

*Master of  
Science  
Student  
Supervision*

- [1]. Xiao Ma, "LED-based compressive spectral temporal imaging," 2017.
- [2]. Yuksel Karahan, "Improved depth map upsampling Using Iterative Joint Trilateral Filter," 2017.
- [3]. Angela Cuadros, "Coded aperture design by uniform sensing in compressive X-ray tomosynthesis systems," 2016.
- [4]. Hoover Rueda, "Higher order discretization model for coded aperture spectral imaging systems," 2015.
- [5]. Kai Wang, "Coded aperture compressive tomosynthesis," 2014.
- [6]. Sergio Matiz, "Analog joint source channel coding for wireless optical communications and image transmission," 2013.
- [7]. Claudia Correa, "Lapped-windowed reconstructions in compressive spectral imaging," 2013.
- [8]. Diego Pienovi, "Threshold data converters," 2009.
- [9]. Xu Ma, "Generalized Inverse Lithography Methods for Phase-shifting Mask Design," 2008.
- [10]. Rafael Nunez, "Fast Sample Myriad Computation," 2008.
- [11]. Andres Medina, "Statistical Approach to Neighborhood Congestion Control," AdHoc Network Congestion control, 2007.
- [12]. Liangping, Ma, "New packet delay network protocols based on robust signal processing," 2007.
- [13]. Alvaro Gonzalez, "Alpha Stable Human Visual System Models for Digital Halftoning," 2007.
- [14]. J. Bacca, "Spectral design of weighted median filters: a general iterative approach," 2003.
- [15]. F. Faheem, "Digital multitoneing using gray level separation," Dec. 2002.
- [16]. A. M. Khan, "Stochastic Moire," Jan. 2002.
- [17]. N. Grabowski, "Sigma Delta Modulation Using Weighted Median Filters," Jan. 2002.
- [18]. S. Hoyos, "Mixed-signal architectures for printed circuit board channels," Aug. 2001.
- [19]. C. Nino, "Data embedding in digital halftones with screen mask codes," May. 2000.
- [20]. S. Hasan, "Elimination of interference terms of discrete wigner distribution using nonlinear filtering," 1999.
- [21]. Y. Berananda, "Adaptive myriad filters for image processing in alpha-stable impulsive noise," 1999.
- [22]. J. Paredes, "Stack filters, stack smoothers, and mirrored threshold decomposition," 1998.

- [23]. L. Xie, "Watermarking digital image signatures for authentication," 1998. Now with Eye Cast.
- [24]. A. Flaig (K. Barner co-supervisor), "Affine-order-statistic filters: medianization of linear FIR filters," 1998.
- [25]. F. Strobel, "Wavelet encoded zero tree compressed still image transmission using a partial reliability/partial order transport protocol," (Technical University Uhlm FHTE), May 1997.
- [26]. H. Cui (N. C. Gallagher co-supervisor), "The development of a simulator for neuromorphic circuits," Fall 1996.
- [27]. Y. Kim (A. Khayrallah co-supervisor), "Nonlinear filters in robust data compression of speech signals," 1996.
- [28]. A. Flaig, "Fuzzy order-statistics," (Technical University Aalen FHTE), 1996.
- [29]. P. Zurbach, "Weighted myriad filters for image processing," June, 1996.
- [30]. L. Li, "Detection of evoked potentials as a method for brain computer interfacing," Fall 1996.
- [31]. J. Gonzalez (K. Barner co-supervisor), "A new approach to suppressing abnormal tremor through signal equalization," 1995.
- [32]. D. Griffith, "Partially decoupled volterra filters: formulation and adaptive algorithms," 1994.
- [33]. M. Tian, "Transform domain adaptive order stastic based filters," Aug 1994.
- [34]. W. Reynolds, "Micro-statistics in adaptive antenna arrays," Aug. 1992.
- [35]. R. Hardie, "Ranking multivariate data and its use in color image estimation," May 1990.
- [36]. K. Barner, "Optimal detection schemes for the restoration of images with signal dependent noise," Dec. 1989.
- [37]. T. Hu, "Applications of subband decomposition to data compression," Dec. 1989.
- [38]. R. Feehs, "Optimal detection approaches to image restoration: signal independent noise," Dec. 1989.
- [39]. R. Foster, "Algorithms architectures and the VLSI implementation of ranked-order filters for multidimensional signal processing," May 1988.
- [40]. T. Rao, "Fourier based analysis of ordered dither halftoning," Dec 1988.
- [41]. S. Fontana, "Temporal ranked filters for stationary and motion compensated imagery," Dec. 1986.
- [42]. M. Mc Loughlin, "Deterministic properties of two-dimensional medial type filters," Dec. 1985.
- [43]. R. Crinon, "Theoretical analysis of the median filtering of impulse type noise," May 1984.
- [44]. J. Dalton, "Visual model based image halftoning using markov random field error diffusion," Dec. 1984.

---

*Contracts and Grants*

**Summary:** *As principal investigator or co-principal investigator, I have been responsible for close to \$25 million in research funding from various DoD organizations, NSF, and Industry.*

- A. Brockmeier, G. R. Arce, "Advancing machine learning for neuroimaging through topology-aware signal processing", UDRF-SI, \$45,000, 09/2019-09/2020
- R. Vargas, G. R. Arce, "LINKS-GSP: Large Information and Knowledge of Soil respiration using Graph Signal Processing", NASA EPSCoR RID, \$19,909 , 8/1/2019 – 6/30/2020
- D. Freeman, G. R. Arce, "Spectral CT," National Science Foundation, \$50,000, 08/2019-02/2021.
- G. R. Arce, "University of Delaware Blue Hen Proof of Concept Grant," \$40,000, 07/2019-12/2020.

*Gonzalo R. Arce*

- G. R. Arce, "Smart QR Codes," B&W Tek Foundation, \$25,000, 2018.
- G. R. Arce, "Compressive Spectral Tomography," National Science Foundation, \$450,000, 09/2018-08/2021.
- G. Poirer, G. R. Arce and K. Barner, "Advanced Dual Energy X-ray Imaging," UNIDEL Foundation and GoreTek Inc \$1,200,000, 9/2018 - 8/2019.
- D. Lau, G. R. Arce, and S. Cioba, "Blue Noise Sampling on Graphs," NSF 16-578 Computing and Communications Foundations (CCF) Core programs, \$500,000, July 2018 - June 2021.
- D. Guillot and G. R. Arce, "Efficient Design of Uniqueness Sets for Bandlimited Signals on Networks," UDRF Strategic Initiative Award, \$49,949, February 2018 - July 2019.
- Institute for Financial Services Analytics and JPMorgan Chase, "JPMC Faculty Fellow," \$300,000, 2015-2017.
- National Science Foundation and Intel, "Collaborative Research: Joint Compressive Spectral Imaging and 3D Ranging Sensing using a commodity Time-Of-Flight Range Sensor," \$900,000 from NSF; \$25,000 from Intel, Co-PI Daniel Lau, 09/01/2015-08/31/2018.
- Johns Hopkins University Applied Physics Laboratory, "Compressive Colored Raman Imaging (CCRI) of Optical Standoff Explosive Detection," \$100,000, 06/21/2016 -05/10/2017.
- Army Research Laboratories, "A compressive sensing infrared camera for spinning munitions," \$329,500, 09/26/2014-09/25/2017.
- Fulbright, Colfuturo, "Colombian PhD fellowships," \$900,000, 2013-2019.
- Army Research Office, "A system for compressive spectral and polarimetric imaging," \$90,000, 2014-2015.
- Institute for Financial Services Analytics and JPMorgan Chase, "JPMC Faculty Scholar" \$279,000, 02/01/2014-01/31/2017.
- Army Research Office, "Compressive Spectral Image Classification," \$150,000, 8/12-5/15.
- Unidel Foundation, "Global Partnerships" \$ 27,000, 8/11 -9/12.
- Michelin Corporation, with J. Garcia-Frias and X.-G. Xia, "Anomaly pattern analysis and prediction using low-rank and sparse models," \$ 360,000, 5/11 - 6/14.
- Army Research Office, "Compressed Sensing Imaging," \$50,000, 8/11-5/12.
- Office of Naval Research, with D. Prather and J. Garcia-Frias, "Spectrally adaptive compressed imaging system," \$1,450,000, 7/10-7/13.
- ARL through DSCI subcontract, with D. Sincoskie, and other ECE faculty, "Cybersecurity in tactical environments," \$ 706,999 , 10/10-8/12.
- National Science Foundation, with J. Garcia-Frias, "Analog compressive sensing," \$500,000, 7/09-7/13.
- National Science Foundation, with J. Garcia-Frias, "Compressed sensing using a-priori information," \$310,000, 9/07-8/13.
- Army Research Office, "Network Intrusion Detection," \$50,000, 8/10-5/11.
- Intel Corporation, "Inverse Lithography with partially coherent illumination," \$200,000, 1/08-08/10.
- Army Research Laboratories, "Signals and Controls Laboratory," \$60,000, 12/08-12/09.
- State of Delaware, with C.Ih, "Smart universal power inverter for reactive power generation and recuperation," \$100,000, 3/07-3/08.
- Telcordia Technology/Army Research Laboratory, with S. Bohacek, "Collaborative Technology Alliance Consortium Phase II," \$400,000 5/06-9/09.
- Office of Naval Research, with D.Prather, "Compressed Sensing Imaging with Wide FOV and Dynamic Magnification," \$2,213,586, 12/06-6/10.



*Gonzalo R. Arce*

- Army Research Laboratories, with D. Weile, “Nonlinear signal processing and EM modeling of attitude RF polarimetric sensors, \$300,000, 12/06-12/08.
- DuPont, “Authentication with visual cryptography,” \$10,000, 12/07 - 12/08.
- Unidel Foundation, “Sub-terahertz and Millimeter wave imaging and spectroscopy laboratory,” \$320,000, 9/05-9/06.
- Army Research Laboratories, “Digital Signal Processing Laboratory,” \$50,000, 12/05-12/07.
- Unidel Foundation, “Spintronics laboratory in ECE,” \$300,000, 9/04-9/05.
- National Science Foundation, with D. Mills, “ITR: Optimal Diffusion Mechanisms for Fast and Robust TCP Congestion Control,” \$349,978, 9/03-8/07.
- Intel Corporation, “Wavelet Inverse Imaging for Sub Wavelength Lithography,” \$200,000, 1/04-06/06.
- Agere, “HVS Model-based halftoning,” \$177,000, 2004-2005.
- Army Research Laboratory, “Collaborative Technical Alliance in Networks and Communications,” with 8 faculty in ECE and CIS, \$6,000,000 , 2001 - 2006.
- Unidel Foundation, “Undergraduate laboratories in ECE,” \$300,000, 9/01-9/02.
- Battelle, with F. Kiamilev, “Power-saving communication protocols for VCSEL arrays,” \$24,000, 9/01-9/02.
- Raytheon Systems Co., with F. Kiamilev, “Raytheon A.C.N. Project,” \$44,000, 5/00-9/01.
- DE Research Partnership, “Delaware Research Partnership Program,” \$54,000.00, 1/01-6/02.
- PMC-Sierra, Inc., “Signal processing for internet technology,” \$35,000, 3/00-2/02.
- Lexmark International, Inc., “Advances in Color and green noise halftoning for electronic imaging,” \$30,000, 6/00-5/02.
- Direct Radiology Corporation (with K. Barner), “New methods for improved noise reduction, contrast enhancement, and volume rendering of directray images,” \$46,000, 2000 - 2001.
- Du Pont iTechnologies, “Digital Halftoning for Prepress Technologies,” \$80,000, 6/01 - 6/03.
- Lexmark International, “Advances in Color and Green Noise Halftoning for Electronic Imaging,” \$30,000, 6/00-5/02.
- Battelle, “Power-saving Communication Protocols for VCSEL Arrays,” \$24,000, 9/01-9/02.
- Direct Radiology Corporation (with K. Barner), “Digital processing of X-ray imagery” \$5,000, 1999.
- AANETCOM, “Signal processing for gigabit Ethernet,” \$90,000, 1999-2000.
- Lexmark International, “Green noise halftoning masks,” \$27,000, 1999.
- Du Pont, “Digital image watermarking,” \$25,000, 1998-1999.
- National Science Foundation, “Parallel and distributed computing,” with 8 faculty in ECE and CIS, \$900,000, 1997 - 2001.
- National Science Foundation (with N. Gallagher), “Weighted myriad filters and their application to communications,” \$310,000, 1996 - 2000.
- Army Research Laboratories, “Robust Viterbi decoders,” \$30,000, 1998-1999.
- National Science Foundation, “Research Experiences for Undergraduates,” \$10,000, 1997 -1998.
- Army Research Laboratory, “Advanced Telecommunications/Information Distribution Research Federated Laboratory,” with 6 faculty in ECE and CIS, \$ 4 million, 1996 - 2001.
- Silicon Graphics (with N. C. Gallagher, K. Barner, C. Boncelet), “Multimedia equipment for Instruction and research,” \$420,000, 1995 - 1996.
- National Science Foundation, “Video signal processing research,” with C. Boncelet, et al, \$ 100,000, 1994 - 1995.

- National Science Foundation, “Microstatistic signal decomposition and the optimal filtering problem,” \$130,000, 1991 - 1993.
  - ALCOA, “Three dimensional computerized tomography with truncated projections,” \$95,000, 1990 - 1992.
  - Sperry Corporation, “Multidimensional signal processing and computer vision,” \$30,000, 1986 - 1987.
  - Du Pont, “Data compression methods in process control,” \$28,000, 1987 - 1988.
  - Du Pont and The Delaware Research Partnership, “Visual communications of computer networks,” \$57,000, 1989 - 1990.
  - Unidel Foundation, “A Computer Vision and Image Processing Laboratory,” \$170,000, with P. Warter and C. Boncelet, 1986 -1987.
  - University of Delaware Research Foundation, “Analysis of Two Dimensional Median Filters,” \$15,000, 1983 - 1984.
  - National Science Foundation, Research Initiation Grant, “Theoretical analysis of recursive median filters,” \$55,000, 1983 - 1985.
- 

*Patents*

- [1]. A. Cuadros and G. R. Arce. ”Pixelated K-edge coded aperture system for compressive spectral X-ray imaging.” U.S. Patent No. 10,874,361. 29 Dec. 2020.
- [2]. D. L. Lau, G. R. Arce, “Spectral imaging sensors and methods with time of flight sensing,” US Patent 10,151,629, March. 2018.
- [3]. G. R. Arce, G. J. Garateguy, S. X. Wang, and D. L. Lau, “Method to store a secret QR code into a colored secure QR code,” US Patent 10,152,663. Aug. 2017.
- [4]. G. R. Arce, G. Garateguy, S. X. Wang, “System and method of embedding a two dimensional code with concealed secure message,” US Patent 10,089,508. Oct. 2018.
- [5]. D. L. Lau, G. R. Arce, “Spectral imaging sensors and methods with time of flight sensing,” US Patent App. 15/559,228, March. 2018.
- [6]. G. R. Arce, G. J. Garateguy, D. L. Lau, “System and method for embedding of a two dimensional code with an image,” US Patent 9,865,027, Jan. 2018.
- [7]. G. R. Arce, G. J. Garateguy, S. X. Wang, and D. L. Lau, “Method to store a secret QR code into a colored secure QR code,” US Patent App. 15/168,677. Aug. 2017.
- [8]. G. R. Arce, and H. Arguello, “Spectral Imaging Sensors and Methods”, US Patent 9,343,491. May, 2016.
- [9]. D. Lau and G. R. Arce, “Image Quantization for Digital Printing”, US Patent 8,867,100B2, Oct. 2014.
- [10]. Z. Zhou, Y. T. Kim, and G. R. Arce, ”Method of motion compensated temporal noise reduction”, US Patent 7,535,517, June 19, 2009.
- [11]. S. Hoyos, B. Sadler, G. R. Arce, ”Analog to Digital Conversion with Signal Expansion,” US Patent 7,253,761, August 7, 2007.
- [12]. L. Russo, J. Paredes, G. R. Arce, ”Bijection Mapping for Compression/Denoising of Multi-Frame Images,” US Patent 7,224,845, May 29, 2007.
- [13]. C. Nino, and G. R. Arce, ”Method for Modeling Color Halftones,” US Patent 7,173,733, February 7, 2007.
- [14]. D. Lau, G. R. Arce, and N. Gallagher, ”Digital color halftoning with generalized error diffusion vector green-noise masks” US Patent 6,798,537, September 28, 2004.
- [15]. K. Bloch and G. R. Arce, ”Method of Non-Linear Analysis of Biological Sequence Data,” US Patent 6,728,642, April 27, 2004.

- [16]. L. Xie, A. Lewis, E. Basch, G. R. Arce, "Message Authentication Code with Improved Error Tolerance," US Patent 6,665,420, December 16, 2003.
  - [17]. L. Xie, A. Lewis, A. Michelson, E. Basch, G. R. Arce, "Message Authentication Code Using Image Histograms," US Patent 6,606,393, August 12, 2003.
  - [18]. X. Xia, C. Boncelet, and G. R. Arce, "Watermarking Methods for Digital Images and Videos," US Patent 6,556,689, April 12, 2003.
  - [19]. L. Xie, A. Lewis, E. Basch, G. R. Arce, "Systems and Methods for Etching Digital Watermarks," US Patent 6,512,836, January 28, 2003.
  - [20]. G. R. Arce and D. Lau, "Method and apparatus for producing halftone images using green-noise masks having adjustable coarseness" US Patent 6,493,112, December 10, 2002.
  - [21]. M. Mueller, G. R. Arce, and R. Blake, "Cone beam synthetic arrays in three-dimensional computerized tomography," US Patent 5,740,224,593, April 14, 1998.
  - [22]. M. Mueller and G. R. Arce, "Tilted Detector Microscopy in Computerized Tomography," US Patent 5,493,593, February 20, 1996.
- 

*Keynote and  
Invited Talks*

- [1]. "Fast Lithographic Source Optimization based on Compressive Sensing," International Workshop on Advanced Patterning Solutions (IWAPS). DoubleTree by Hilton Hotel Xiamen-Haicang, Xiamen, China, Oct, 2018.
- [2]. "Compressive Multimodal Imaging Systems," Hyperspectral Imaging and Applications (HSI 2018), Ricoh Arena, Coventry, United Kingdom, Oct, 2018.
- [3]. "Compressive Coded-Aperture Multimodal Imaging Systems," OSA Latin America Optics & Photonics Conference (LAOP), Colombia, Nov. 2017.
- [4]. "Hyperspectral, Multispectral, and Multimodal (HMM) Imaging: Acquisition, Algorithms, and Applications," Dagstuhl Seminar, Schloss Dagstuhl, Germany, Oct. 2017.
- [5]. "Computational spectral imaging," University of science and technology, Chengdu, China, Mar. 2017.
- [6]. "Robust Norms in Sparse Representations and Compressed Sensing," 2016 Joint IEEE SPS and EURASIP Summer School on Robust Signal Processing, Rhein, Germany, Sept. 19-24, 2016.
- [7]. "Coded Aperture Optimization for Compressive Spectral and Tomographic Image Sensing," Distinguished Seminar Series, Johns Hopkins Applied Physics Laboratory. July 28, 2016.
- [8]. "Coded Aperture Optimization for Compressive Spectral and Tomographic Image Sensing," Distinguished Speaker Talk, University of Sevilla, 2016.
- [9]. "Coded Aperture Optimization for Compressive Spectral and Tomographic Image Sensing," Distinguished Speaker Talk, Tongji University, Shanghai, 2016.
- [10]. "Coded Aperture Optimization for Compressive Spectral and Tomographic Image Sensing," Distinguished Speaker Talk, Tsinghua University, Beijing, 2016.
- [11]. "Coded Aperture Optimization for Compressive Spectral and Tomographic Image Sensing," Distinguished Speaker Talk, Beijing Institute of Technology, 2016.
- [12]. "Compressive Spectral and Tomographic Sensing and Imaging," Distinguished Speaker Talk, Johns Hopkins University, Nov. 2015.
- [13]. "Compressive Spectral Imaging: A review," IEEE Global Conference on Signal and Information Processing (GLOBALSIP 2014), Atlanta, GA, Dec. 3, 2014.
- [14]. "Compressive Spectral Imaging in EO/IR surveillance," NATO Science and Technology Office Specialists Meeting, Tallin, Estonia, May 10-14, 2014.
- [15]. "Coded aperture optimization in compressive spectral imaging," Aalto University, Helsinki, Finland, May 7, 2014.

- [16]. “Compressive Spectral Imaging: Sensing, Processing, and Optimization, ” Distinguished speaker talk, Villanova University, 2013.
  - [17]. “Compressive Spectral Imaging: Sensing, Processing, and Optimization, ” Air Force Research Laboratory, Dayton OH, Nov. 2012.
  - [18]. “Compressive Spectral Imaging,” ARL, Night Vision Laboratories, Fort Belvoir VA, Sept. 2012.
  - [19]. “Compressive Sensing and Imaging,” Jia Tong University, Shanghai China, Oct. 2012.
  - [20]. “New Algorithms for Computational Lithography,” Beijing Institute of Technology, Oct. 2012.
  - [21]. “Compressive Sensing and Imaging,” Jia Tong University, Xi’an China, Oct. 2012.
  - [22]. “A Short Course on Statistical Signal Processing,” Universidad Industrial de Santander, Bucaramanga, Colombia, August 2011.
  - [23]. “Sensing and Analysis of High-Dimensional Data, ” Universidad de La Coruna, Spain, 2011.
  - [24]. “Compressive Code Aperture Spectral Imaging, ” Universidad de Alcala, Madrid, Spain, 2011.
  - [25]. “Sensing and Analysis of High-Dimensional Data, ” Universidad de Alcala, Madrid, Spain, 2011.
  - [26]. “A Short Course on Compressive Sensing and Low-Rank Matrix Recovery,” Graduate School in Electronics and Telecommunicaitons, Uunisaari, Helsinki, Finland, November 2010.
  - [27]. “Tutorial on Compressive Sensing and its Applications in Imaging,” European Signal Processing Conference, Aalborg, Denmark August 2010.
  - [28]. “Compressive Sensing: Exploiting Signal Sparsity,” Tampere University of Technology, Finland, 2010.
  - [29]. “Compressive Spectral Imaging Systems,” Tampere University of Technology, Finland, 2010.
  - [30]. “Low-Raw Matrix Recovery and Compressive Sensing,” Nokia Research Center, Helsinki, Finland, 2010.
  - [31]. “Compressed Spectral Imaging,” Distinguished Speaker Seminar Series, University of Thessaloniki, Thessaloniki, Greece, 2010.
  - [32]. “Nonlinear Signal Processing,” Universidad de Alcala, Madrid, Spain, 2009.
  - [33]. “Digital Halftoning,” Universidad de Alcala, Madrid, Spain, 2009.
  - [34]. “Computational Lithography,” Intel, 2008.
  - [35]. “Modern Digital Halftoning,” DuPont, Wilmington DE, 2005.
  - [36]. “Median Power and Median Covariations,” Drexel University, Philadelphia, PA, 2004.
  - [37]. “Approximate Message Authentication Codes,” Helsinki University of Technology, Helsinki, Finland, 2001.
  - [38]. “Image Authentication Codes,” Du Pont Experimental Station, Wilmington DE, 2001.
  - [39]. “Weighted Myriad Filters,” Tampere University of Technology, Tampere, Finland, 2000.
  - [40]. “Fragile Image Watermarking,” Tampere University of Technology, Tampere, Finland, 2000.
  - [41]. “Signal Processing with Weighted Medians,” IBM Watson Research Center, NY, 1994.
  - [42]. “Nonlinear Image Processing,” Du Pont Experimental Station, Wilmington DE, 1992.
  - [43]. “Signal Processing with Weighted Medians,” Du Pont Experimental Station, Wilmington DE, 1990.
  - [44]. “Weighted Median Filters and Their Applications,” University of California, Santa Barbara, 1989.
  - [45]. “Tutorial on Nonlinear and Morphological Filters,” SPIE Conference, San Jose, CA 1989.
-

*Books*

- [1]. X. Ma and G. R. Arce, "Computational Lithography," Wiley & Sons, 2010.
  - [2]. D. Lau and G. R. Arce, "Modern Digital Halftoning," 2nd ed., CRC Press, 2008.
  - [3]. G. R. Arce, "Nonlinear Signal Processing," Wiley & Sons, 2004.
  - [4]. K. Barner and G. R. Arce, editors, "Nonlinear Signal and Image Processing," CRC Press, 2004.
  - [5]. D. Lau and G. R. Arce, "Modern Digital Halftoning," Marcel Dekker, New York, 2001.
- 

*Book  
Chapters*

- [1]. G. R. Arce, A. Ramirez, H. Rueda, H. Arguello and C. Correa, "Compressive Spectral Imaging," in "Wiley Encyclopedia of Electrical and Electronics Engineering", John Wiley & Sons, Inc., 2016.
- [2]. D. L. Lau, G. R. Arce, G. Garateguy, "Methods of Dither Array Construction Employing Models of Visual Perception," in "Perceptual Digital Imaging: Methods and Applications", CRC Press / Taylor & Francis, 2012.
- [3]. G. R. Arce, Z. Wang, G. Di Crescenzo, "Visual Cryptography from Halftone Error Diffusion," in "Visual Cryptography and Secret Image Sharing", CRC Press / Taylor & Francis, 2011.
- [4]. G. R. Arce, K. Barner, "Nonlinear Image Filtering," The Essential Guide to Image Processing (A. Bovik, Ed.) Elsevier, 2008.
- [5]. G. R. Arce, J. L. Paredes, J. Bacca, "Nonlinear Image Filtering," The Essential Guide to Image Processing (A. Bovik, Ed.) Elsevier, 2008.
- [6]. G. R. Arce, Y. Li, "Advances in Nonlinear Signal and Image Processing," "Multichannel Weighted Medians," (S. Marshall, G. Sicuranza ed.), pp. 273-299, Hindawi Publishing Corporation, 2006.
- [7]. G. R. Arce, J. L. Paredes, J. Bacca, "Nonlinear Filtering for Image Analysis and Enhancement," in "Handbook of Image and Video Processing," (A. Bovik, ed.), pp. 81-100, Second Edition, Academic Press, 2005.
- [8]. G. R. Arce, G. D. Crescenzo, Z. Zhou "Visual Cryptography," in "The Handbook of Image and Video Processing," Second Edition, A. Bovik, Editor, Academic Press, 2005
- [9]. G. Di Crescenzo, R. Graveman, R. Ge, and G. R. Arce, "Approximate message authentication and biometric entity Authentication," in Financial Cryptography and Data Security, Eds. A. S. Patrick and M. Yung, Lecture notes in Computer Science, Springer-Verlag, 2005.
- [10]. G. R. Arce, J. G. Gonzalez and Y. Li, "Weighted Myriad Filters," Chapter 5 in Nonlinear Signal and Image Processing: Theory, Methods, and Applications, ed. K. E. Barner and G. R. Arce, CRC Press, Nov. 2003
- [11]. L. Russo, J. Paredes, and G. R. Arce, "Multichannel image compression and denoising using bijection mappings," ATIRP Research Advances, UMD Press 2002.
- [12]. K. M. Bloch and G. R. Arce, "Analyzing Protein Sequences using Signal Analysis Techniques," "Computational and Statistical Approaches to Genomics", (W. Zhang and I. Shmulevich, ed.), pp. 113-124, Kluwer Academic Publishers, 2002.
- [13]. G. R. Arce, J. Paredes, "Recent developments in stack filtering and smoothing," in Advances in Imaging and Electron Physics, P. W. Hawkes, Editor, Academic Press, 2001.
- [14]. G. R. Arce and J. Paredes, "Image enhancement with weighted medians," in "Nonlinear Image Processing," S. Mitra and G. Sicuranza, Editors, pp 27-67, Academic Press, 2000.
- [15]. D. Lau and G. R. Arce, "Digital Halftoning," in Nonlinear Image Processing," S. Mitra and G. Sicuranza, Editors, Academic Press, 2000.
- [16]. G. R. Arce, J. Paredes, and J. Mullan, "Image Enhancement and Analysis Using Nonlinear Filters," in Handbook of Image Processing, A. Bovik, Editor, Academic Press, 1999.

- [17]. G. R. Arce, Y. T. Kim, and K. E. Barner, "Order statistic filtering and smoothing of time series: Part I," Invited chapter in the Handbook of Statistics16 Order Statistics and Their Applications, C. R. Rao and N. Balakrishnan, Editors, 1999.
  - [18]. K. E. Barner and G. R. Arce, "Order statistic filtering and smoothing of time series: Part II," Invited paper to appear in the Handbook of Statistics16 Order Statistics and Their Applications, C. R. Rao and N. Balakrishnan, Editors, 1999.
  - [19]. G. R. Arce and K. E. Barner, "Nonlinear Signal Processing," in the Encyclopedia of Electrical and Electronics Engineering," J. G. Webster, Editor, Wiley, 1999.
  - [20]. G. R. Arce and N. C. Gallagher, "BTC image coding using median filter roots," in Bloch Truncation Coding, IEEE Press, 1994.
  - [21]. G. R. Arce and R. Foster, "Detail preserving ranked order based filters for image processing," in Digital Image Processing", R. Chellappa ed., IEEE Press, 1992.
  - [22]. G. R. Arce, T. Nodes, and N. C. Gallagher, "Median Filters: Theory for One and Two Dimensional Filters," in Advanced Topics in Signal Processing, T. S. Huang ed., JAE Press, 1986.
- 

- [1]. Ma, Xu, Yihua Pan, Shengen Zhang, Javier Garcia-Frias, and Gonzalo Arce. "An informational lithography approach based on source and mask optimization." IEEE Transactions on Computational Imaging (2020).
- [2]. Zheng, Xianqiang, Xu Ma, Qile Zhao, Yihua Pan, and Gonzalo R. Arce. "Model-informed deep learning for computational lithography with partially coherent illumination." Optics Express 28, no. 26 (2020): 39475-39491.
- [3]. Lau, Daniel L., Gonzalo R. Arce, Alejandro Parada-Mayorga, Daniela Dapena, and Karelia Pena-Pena. "Blue-Noise Sampling of Graph and Multigraph Signals: Dithering on Non-Euclidean Domains." IEEE Signal Processing Magazine 37, no. 6 (2020): 31-42.
- [4]. Ma, Xu, Dong Wang, Angela Cuadros, Tianyi Mao, Qile Zhao, Gonzalo R. Arce, and Tingfa Xu. "Conveyor X-Ray Tomosynthesis Imaging With Optimized Structured Sequential Illumination." IEEE Photonics Journal 12, no. 5 (2020): 1-17.
- [5]. Zhao, Qile, Xu Ma, Angela Cuadros, Tianyi Mao, and Gonzalo R. Arce. "Single-snapshot X-ray imaging for nonlinear compressive tomosynthesis." Optics Express 28, no. 20 (2020): 29390-29407.
- [6]. Ma, Xu, Xianqiang Zheng, and Gonzalo R. Arce. "Fast inverse lithography based on dual-channel model-driven deep learning." Optics Express 28, no. 14 (2020): 20404-20421.
- [7]. Wang, Zhiqiang, Xu Ma, Rui Chen, Shengen Zhang, and Gonzalo R. Arce. "Fast Pixelated Lithographic Source and Mask Joint Optimization Based on Compressive Sensing." IEEE Transactions on Computational Imaging 6 (2020): 981-992.
- [8]. Wang, Zhiqiang, Xu Ma, Rui Chen, Gonzalo R. Arce, Lisong Dong, Hans-Juergen Stock, and Yayi Wei. "Comparison of different lithographic source optimization methods based on compressive sensing." In Optical Microlithography XXXIII, vol. 11327, p. 1132716. International Society for Optics and Photonics, 2020.
- [9]. Salazar, Edgar, and Gonzalo R. Arce. "Coded Aperture Optimization in Spatial Spectral Compressive Spectral Imagers." IEEE Transactions on Computational Imaging 6 (2020): 764-777.
- [10]. Zhang, Hao, Xu Ma, Daniel L. Lau, Jianchen Zhu, and Gonzalo R. Arce. "Compressive spectral imaging based on hexagonal blue noise coded apertures." IEEE Transactions on Computational Imaging 6 (2020): 749-763.
- [11]. Zhang, Hao, Xu Ma, and Gonzalo R. Arce. "Compressive spectral imaging approach using adaptive coded apertures." Applied optics 59, no. 7 (2020): 1924-1938.

- [12]. Xu, Chang, Tingfa Xu, Ge Yan, Xu Ma, Yuhan Zhang, Xi Wang, Feng Zhao, and Gonzalo R. Arce. "Super-resolution compressive spectral imaging via two-tone adaptive coding." *Photonics Research* 8, no. 3 (2020): 395-411.
- [13]. X. Ma, Z. Wang, J. Zhu, S. Zhang, G. R. Arce, and S. Zhao . "Nonlinear compressive inverse lithography aided by low-rank regularization". *Optics express*, 27(21), 29992-30008 (2019).
- [14]. A. Parada-Mayorga, D. L. Lau, J. H. Giraldo, and G. R. Arce. "Blue-Noise Sampling on Graphs". *IEEE Transactions on Signal and Information Processing over Networks*, 5(3), 554-569 (2019).
- [15]. T. Mao, A. Cuadros, X. Ma, W. He, Q. Chen, and G. Arce. "Coded Aperture Optimization in X-ray Tomography via Sparse Principal Component Analysis." *IEEE Transactions on Computational Imaging* (2019).
- [16]. H. Rueda-Chacon, J. F. Florez, D. L. Lau, and G. R. Arce. "Snapshot Compressive ToF+ Spectral Imaging via Optimized Color-Coded Apertures." *IEEE transactions on pattern analysis and machine intelligence* (2019).
- [17]. A. Cuadros, X. Ma, and G. R. Arce. "Compressive spectral X-ray tomography based on spatial and spectral coded illumination." *Optics express* 27, no. 8 (2019): 10745-10764.
- [18]. X. Ma, Q. Zhao, A. Cuadros, T. Mao, and G. R. Arce. "Source and coded aperture joint optimization for compressive X-ray tomosynthesis." *Optics express* 27, no. 5 (2019): 6640-6659.
- [19]. L. Galvis, E. Mojica, H. Arguello, and G. R. Arce. "Shifting colored coded aperture design for spectral imaging." *Applied optics* 58, no. 7 (2019): B28-B38.
- [20]. X. Ma, Z. Wang, X. Chen, Y. Li, and G. R. Arce. "Gradient-Based Source Mask Optimization for Extreme Ultraviolet Lithography." *IEEE Transactions on Computational Imaging* 5, no. 1, pp. 120-135, 2019.
- [21]. X. Ma, Z. Wang, X. Chen, Y. Li, and G. R. Arce. "Gradient-Based Source Mask Optimization for Extreme Ultraviolet Lithography." *IEEE Transactions on Computational Imaging* 5, no. 1, pp. 120-135, 2019.
- [22]. W. Ren, C. Fu, D. Wu, Y. Xie, G. R. Arce, "Channeled compressive imaging spectropolarimeter," in *Optics Express*, vol. 27, no. 3, pp. 2197-2211, 2019.
- [23]. E. Salazar, A. Parada-Mayorga, and G. R. Arce. "Spectral Zooming and Resolution Limits of Spatial Spectral Compressive Spectral Imagers." *IEEE Transactions on Computational Imaging* (2019).
- [24]. X. Ma, Q. Zhao, H. Zhang, Z. Wang, and G. R. Arce, "Model-driven convolution neural network for inverse lithography," in *Optics Express*, vol. 26, no. 25, pp. 32565-32584, 2018.
- [25]. X. Ma, Z. Wang, and G. R. Arce. "Compressive Sensing Approaches for Lithographic Source and Mask Joint Optimization." (2018).
- [26]. X. Wang, Y Zhang , X. Ma, T. Xu, and G. R. Arce, "Compressive spectral imaging system based on liquid crystal tunable filter," in *Optics Express*, vol. 26, no. 19, pp. 25226-25243, 2018.
- [27]. T. Mao, A. P. Cuadros, X. Ma, W. He, Q. Chen, and G. R. Arce, "Fast optimization of coded apertures in X-ray computed tomography," in *Optics Express*, vol. 26, no. 19, pp. 24461-24478, 2018.
- [28]. J. A. Becerra, M. J. Madero-Ayora, J. Reina-Tosina, C. Crespo-Cadenas, J. García-Frías, and G. R. Arce. "A Doubly Orthogonal Matching Pursuit Algorithm for Sparse Predistortion of Power Amplifiers." *IEEE Microwave and Wireless Components Letters* 28, no. 8, pp. 726-728, 2018.
- [29]. Z. Wang, X. Ma, G. R. Arce, J. Garcia-Frias, "Information theoretical approaches in computational lithography," in *Optics Express*, vol. 26, no. 13, pp. 16736-16751, 2018.

- [30]. X. Ma, Z. Wang, Y. Li, G. R. Arce, L. Dong, J. Garcia-Frias, "Fast optical proximity correction method based on nonlinear compressive sensing," in *Optics Express*, vol. 26, no. 11, pp. 14479-14498, 2018.
- [31]. X. Ma, Z. Wang, H. Lin, Y. Li, G. R. Arce, and L. Zhang, "Optimization of lithography source illumination arrays using diffraction subspaces," in *Optics Express*, vol. 26, no. 4, pp. 3738-3755, 2018.
- [32]. X. Ma, Hao Zhang, Z. Wang, Y. Li, G. R. Arce, J. Garcia-Frias, and L. Zhang, "Information theoretical aspects in coherent optical lithography systems," in *Optics Express*, vol. 25, no. 23, pp. 29043-29057, 2017.
- [33]. A. P. Cuadros, and G. R. Arce, "Coded aperture optimization in compressive X-ray tomography: a gradient descent approach," in *Optics Express*, vol. 25, no. 20, pp. 23833-23849, 2017.
- [34]. H. Rueda, C. Fu, D. Lau, and G. R. Arce, "Single Aperture Spectral+ToF Compressive Camera: Towards Hyperspectral+Depth Imagery", in *IEEE Journal of Selected Topics in Signal Processing*, vol. 11, no. 7, 2017.
- [35]. L. Galvis, D. Lau, X. Ma, H. Arguello, and G. R. Arce. "Coded aperture design in compressive spectral imaging based on side information," in *Applied Optics*, vol. 56, no. 22, pp. 6332-6340, 2017.
- [36]. J. Wang, X. Guo, F. Ge, and G. R. Arce, "Spatial coding in sonar imaging," in *Electronics Letters*, vol. 53, no. 17, pp 1222-1224, 2017.
- [37]. X. Ma, H. Lin, G. Jiao, Y. Li, and G. R. Arce, "Fast lithographic source optimization using a batch-processing sequential least square estimator," in *Applied Optics*, vol. 56, no. 21, pp. 5903-5913, 2017.
- [38]. X. Ma, G. R. Arce, Z. Wang, Y. Li, S. Zhao, and L. Zhang, "Compressive Position and Attitude Estimation Using Ground-Based Beacon," in *Journal of Guidance, Control, and Dynamics*, Vol. 40, no. 10, pp. 2630-2645, 2017.
- [39]. A. Parada-Mayorga, and G. R. Arce, "Colored Coded Aperture Design in compressive spectral imaging via minimum coherence," in *IEEE Transactions on Computational Imaging*, vol. 3, no. 2, pp. 202-216, June 2017.
- [40]. X. Ma, D. Shi, Z. Wang, Y. Li, and G. R. Arce, "Lithographic source optimization based on adaptive projection compressive sensing," in *Opt. Express* 25, 7131-7149, 2017.
- [41]. M. L. Don, C. Fu, and G. R. Arce, "Compressive imaging via a rotating coded aperture," in *Appl. Opt.* 56, B142-B153, 2017.
- [42]. A. Rauh, and G. R. Arce, "Optimized Spectrum Permutation for the Multidimensional Sparse FFT," in *IEEE Transactions on Signal Processing*, vol. 65, no. 1, pp. 162-172, Jan.1, 1 2017.
- [43]. C. A. Hinojosa, C. V. Correa, H. Arguello, and G. R. Arce, "Multiple snapshot colored compressive spectral imager" in *Special Section On Optical Computational Imaging, Optical Engineering SPIE*. Dec. 2016.
- [44]. A. Parada-Mayorga, and G. R. Arce, "Spectral super-resolution in colored coded aperture spectral imaging," in *IEEE Transactions on Computational Imaging*, vol. 2, no. 4, pp. 440-455, Dec. 2016.
- [45]. C. V. Correa, H. Arguello, and G. R. Arce, "Spatiotemporal blue noise coded aperture design for multi-shot compressive spectral imaging," in *J. Opt. Soc. Am. A* 33, 2312-2322, 2016.
- [46]. H. Rueda, H. Arguello, and G. R. Arce, "Compressive spectral testbed imaging system based on thin-film color-patterned filter arrays," in *Appl. Opt.* 55, 9584-9593, 2016.
- [47]. W. Feng, H. Rueda, C. Fu, G. R. Arce, W. He, and Q. Chen, "3D compressive spectral integral imaging," in *Opt. Express* 24, 24859-24871, 2016.



- [48]. R. E. Carrillo, A. B. Ramirez, G. R. Arce, K. E. Barner, and B. M. Sadler, "Robust compressive sensing of sparse signals: a review," in *EURASIP Journal on Advances in Signal Processing*, 2016.
- [49]. C. Fu, M. Don, and G. R. Arce, "Compressive spectral imaging via polar coded aperture," in *IEEE Transactions on Computational Imaging*, vol. 3, no. 3, pp. 408-420, October 2016.
- [50]. J. Tan, Y. Ma, H. Rueda, D. Baron, and G. R. Arce, "Compressive hyperspectral imaging via approximate message passing," in *IEEE Journal of Selected Topics in Signal Processing*, vol. 10, no. 2, pp. 389-401, March 2016.
- [51]. A.P. Cuadros, C. Peitsch, H. Arguello, and G. R. Arce, "Coded aperture optimization for compressive X-ray tomosynthesis". *Optics Express*, Vol. 23, No. 25, pp. 32788-32802, 2015.
- [52]. L. Galvis, H. Arguello, and G. R. Arce. "Coded aperture design in mismatched compressive spectral imaging". *Applied Optics*, USA. Vol. 54, No. 33, pp. 9875-9882, 2015.
- [53]. C. Fu, H. Arguello, B.M. Sadler, and G. R. Arce, "Compressive spectral polarization imaging by a pixelized polarizer and colored patterned detector". *Journal of the Optical Society of America*, JOSA A, Vol. 32, No. 11, pp. 2178-2188, 2015.
- [54]. C. V. Correa, H. Arguello, and G. R. Arce. "Snapshot colored compressive spectral imager". *Journal of the Optical Society of America*, JOSA A, Vol. 32, No. 10, pp. 1754-1763, 2015.
- [55]. X. Zhang, J. Jiang, B. Xiangli, and G. R. Arce, "Spread spectrum phase modulation for coherent X-ray diffraction imaging". *Optics Express*, Vol. 23, No. 19, pp. 25034-25047, 2015.
- [56]. X. Ma, J. Wang, X. Chen, Y. Li, and G. R. Arce. "Gradient-based inverse extreme ultraviolet lithography". *Applied Optics*, USA. Vol. 54, No. 24, pp. 7284-7300, 2015.
- [57]. X. Ma, L. Dong, C. Han, J. Gao, Y. Li, and G. R. Arce. "Gradient-based joint source polarization mask optimization for optical lithography". *Journal of Micro/Nanolithography, MEMS* Vol. 14, No. 2, pp. 023504-023504, 2015.
- [58]. H. Rueda, D. Lau, and G. R. Arce. "Multi-spectral compressive snapshot imaging using RGB image sensors". *Optics Express*, Vol. 23, No. 9, pp. 12207-12221, 2015.
- [59]. A. Ramirez, G. R. Arce, and B. M. Sadler. "Spectral image unmixing from optimal coded-aperture compressive measurements". *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 53, No. 1, pp. 405 - 415, 2015.
- [60]. H. Rueda, H. Arguello, and G. R. Arce. "DMD-based implementation of patterned optical filter arrays for compressive spectral imaging ". *Journal of the Optical Society of America*, JOSA A, Vol. 32, No. 1, pp. 80 - 89, 2015.
- [61]. Y. Panagakis, C. L. Kotropoulos, and G. R. Arce. "Music genre classification via joint sparse low-rank representation of audio features". *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, Vol. 22, No. 12, pp. 1905 - 1917, 2014.
- [62]. G. J. Garateguy, G. R. Arce, D. L. Lau, and O. P. Villarreal. "QR Images: Optimized image embedding in QR codes". *IEEE Transactions on Image Processing*, Vol. 23, No. 7, pp. 2842 - 2853, 2014.
- [63]. Z. Song, X. Ma, J. Gao, J. Wang, Y. Li, and G. R. Arce. "Inverse lithography source optimization via compressive sensing". *Optics Express*, Vol. 22, No. 12, pp. 12180 - 12198, 2014.
- [64]. S. M. Romero, M. Hassanin, J. Garcia-Frias, and G. R. Arce. "Analog joint source channel coding for wireless optical communications and image transmission". *Journal of Lightwave Technology*, Vol. 32, No. 9, pp. 1654 - 1662, 2014.
- [65]. A. Ramirez, H. Arguello, G. R. Arce, and B. M. Sadler. "Spectral image classification from optimal coded-aperture compressive measurements". *IEEE Trans. on Geoscience and Remote Sensing*, USA. Vol. 52, No. 6, pp. 3299 - 3309, 2014.

- [66]. H. Arguello, and G. R. Arce, "Colored coded aperture design by concentration of measure in compressive spectral imaging". *IEEE Transactions on Image Processing*, Vol. 23, No.4, pp. 1896 - 1908, 2014.
- [67]. G. R. Arce, D. J. Brady, L. Carin, H. Arguello, and D. S. Kittle . "An introduction to compressive coded aperture spectral imaging". *IEEE Signal Processing Magazine*, Vol. 31, No. 1, pp. 105 - 115, 2014.
- [68]. F. Ahmad, G. R. Arce, R. Narayanan, and D. Pados. "Special section guest editorial: Compressive sensing for imaging". *Electronic Imaging, USA*. Vol. 22, No. 2, 2013.
- [69]. X. Ma, C. Han, Y. Li, B. Wu, Z. Song, L. Dong and G. R. Arce. "Hybrid source mask optimization for robust immersion lithography". *Applied Optics, USA*. Vol. 52, No. 18, pp. 4200 - 4211, 2013.
- [70]. X. Ma, Z. Song, Y. Li, and G. R. Arce. "Block-based mask optimization for optical lithography". *Applied Optics, USA*. Vol. 52, No. 14, pp. 3351 - 3363, 2013.
- [71]. H. Arguello, H. Rueda, Y. Wu, D. W. Prather and G. R. Arce. "Higher-order computational model for coded aperture spectral imaging". *Applied Optics, USA*. Vol. 52, No. 10, D12 - D21, 2013.
- [72]. H. Arguello, C. V. Correa and G. R. Arce. "Fast lapped block reconstructions in compressive spectral imaging". *Applied Optics, USA*. Vol. 52, No. 10, D32 - D45, 2013.
- [73]. X. Ma, C. Han, Y. Li, L. Dong, and G. R. Arce, "Pixelated source and mask optimization for immersion lithography," *Journal of the Optical Society of America A*, Vol. 30 Issue 1, pp.112-123, Jan. 2013.
- [74]. X. Ma, Y. Li, X. Guo, L. Dong, and G. R. Arce, "Vectorial mask optimization methods for robust optical lithography," *Journal of Micro/Nanolithography, MEMS, and MOEMS*. 11(4), 043008, Nov. 15, 2012.
- [75]. Y. Adu-Gyamfi, N. Okine, G. Garateguy, R. Carrillo, and G. R. Arce, "Multiresolution Information Mining for Pavement Crack Image Analysis," *J. Comput. Civ. Eng.*, 26(6), 741749, Nov. 2012.
- [76]. A. Ramirez, G. R. Arce, D. Otero, J. Paredes, and Brian Sadler, "Reconstruction of sparse signals from Dimensionality-reduced Cauchy random projections," *IEEE Transactions on Signal Processing*, Vol. 60, No. 11, pp. 5725 - 5737, Nov. 2012.
- [77]. H. Arguello and G. R. Arce, "Rank minimization code aperture design for spectrally selective compressive imaging," *IEEE Trans. on Image Processing*, Vol. 22, No. 3, 941 - 954, 2013.
- [78]. A. Rauh and G. R. Arce, "Optimal Pivot Selection in Fast Weighted Median Search," *IEEE Trans. on Signal Processing*, Vol. 60, Issue 8, pp. 4108-4117, Aug. 2012.
- [79]. H. Arguello and G. R. Arce, "Code aperture optimization for spectrally agile compressive Imaging," *Journal of the Optical Society of America A*, Vol. 28, No. 11, pp. 2400-2413, Nov. 2011.
- [80]. X. Ma and G. R. Arce, "Optimal 3D phase-shifting masks in partially coherent illumination," *Applied Optics*, Vol. 50, No. 28, pp. 5567-5576, Oct. 2011.
- [81]. Y. Wu, I. Mirza, G. R. Arce, and D. W. Prather, "Development of a digital micromirror-device-based multishot spectral imaging system, *Optics Letters*, 36, No. 14, pp. 2692-2694, July 2011.
- [82]. J. L. Paredes and G. R. Arce, "Compressive sensing signal reconstruction by weighted median regression estimates," *IEEE Transactions on Signal Processing*, Vol. 59, Issue 6, pp. 2585- 2601, June 2011.
- [83]. I. D. Barrera and S. Bohacek, and G. R. Arce, "Statistical approach for congestion control in gateway routers," *Computer Networks*, Vol. 55, No. 3, 572-582, Feb. 2011.
- [84]. X. Ma and G. R. Arce, "Pixel-based OPC optimization based on conjugate gradients," *Optics Express*, Vol. 19, Issue 3, pp. 2165-2180, January 2011.

- [85]. I. Kang and G. R. Arce, "Color extended visual cryptography using error diffusion," *IEEE Trans. on Image Processing*, Vol. 20, No. 1, pp. 132-145, January 2011.
- [86]. Y. Wu, P. Ye, I. Mirza, G. R. Arce, and D. W. Prather, "Experimental demonstration of an optical-sectioning compressive sensing microscope (CSM)," *Optics Express*, Vol. 18, issue 24, pp. 24565, 2010.
- [87]. I. D. Barrera, S. Bohacek, and G. R. Arce, "Statistical detection of congestion in Routers," *IEEE Trans. on Signal Processing*, Vol. 58, no. 3, pp. 957-968, March 2010.
- [88]. Y. Panagakis and C. Kotropoulos, and G. R. Arce, "Non-negative multilinear principal component analysis of auditory temporal modulations for music genre classification," *IEEE Trans. Audio, Speech, and Language Processing*, Vol. 18, no. 3, pp. 576-588, March 2010.
- [89]. Z. Wang and G. R. Arce, "Variable density compressed image sampling," *IEEE Transactions on Image Processing*, Vol. 19, No. 1, pp. 264-270, Jan. 2010.
- [90]. X. Ma and G. R. Arce, "Binary mask optimization for forward lithography based on boundary layer model in coherent systems: erratum," *Journal of the Optical Society of America A*, Vol. 27, Issue 1, January 2010.
- [91]. Z. Wang, G. R. Arce, and G. DiCrescenzo, "Halftone visual cryptography via error diffusion," *IEEE Transactions on Information Forensics and Security*, Vol. 4, No.3, pp. 383 - 396, Sept. 2009.
- [92]. C. Kotropoulos and G. R. Arce, "Linear Classifier with Reject Option for the Detection of Vocal Fold Paralysis and Vocal Fold Edema," *EURASIP Journal On Advances in Signal Processing*, No. 203790, 2009.
- [93]. Y. Wu, C. Chen, Z. Wang, G. R. Arce, D. Prather, "Fabrication and characterization of a compressive-sampling multispectral imaging system," *Optical Engineering*, Vol. 48, No. 12, Article 123201, Dec. 2009.
- [94]. X. Ma and G. R. Arce, "Binary Mask Optimization for Forward Lithography based on Boundary Layer Model in Coherent Systems," *Journal of the Optical Society of America A*, Vol. 27, Issue 1, pp. 1687-1695, January 2010.
- [95]. X. Ma and G. R. Arce, "Pixel-based Simultaneous Source and Mask Optimization for Resolution Enhancement in Optical Lithography," *Optics Express*, Vol. 17, Issue 7, pp. 5783-5793, 2009.
- [96]. X. Ma and G. R. Arce, "PSM Design for Inverse Lithography with Partially Coherent Illumination," *Optics Express*, Vol. 16, Issue 24, pp. 20126-20141, 2008.
- [97]. X. Ma and G. R. Arce, "Binary Mask Optimization for Inverse Lithography with Partially Coherent Illumination," *Journal of the Optical Society of America A*, Vol. 25, Issue. 12, pp. 2438-2452, 2008.
- [98]. J. Bacca, G. R. Arce, D. Lau, "Multitone blue noise dithering," *IEEE Transactions on Image Processing*, Vol. 17 , No. 8, pp. 1368-1382, Aug. 2008.
- [99]. R. Nunez, J. G. Gonzalez, G. R. Arce, "Fast and accurate computation of the myriad filter via Branch-and-Bound search" *Transactions on Signal Processing*, Vol. 56, No.7, pp. 3340-3346, July 2008.
- [100]. X. Ma and G. R. Arce, "Generalized Inverse Lithography Methods for Phase-Shifting Mask Design," *Optics Express*, Vol. 15, Issue 23, pp. 15066-15079, 2007.
- [101]. J. L. Paredes, G. R. Arce, Z. Wang, "Ultra-Wideband Compressed Sensing: Channel Estimation," in *Transactions of the IEEE Journal of Selected Topics in Signal Processing*, Volume 1, Issue 3, Oct. 2007 Page(s):383 - 395.
- [102]. A. J. Gonzalez, G. R. Arce, D. L. Lau, "Alpha Stable Human Visual System models for Digital Halftoning in Rectangular and Hexagonal Sampling Grids with extension to color", in press *IS&T SPIE Journal of Electronic Imaging*, Vol. 17 Issue: 1, Article No. 013004, January-March 2008.

- [103]. G. DiCrescenzo, R. Ge, G. R. Arce, "Threshold Cryptography in Mobile Ad Hoc Networks under Minimal Topology and Setup Assumptions," *Ad Hoc Networks (Elsevier) Journal*, Special Issue on Security in Ad Hoc and Sensor Networks, Vol. 5, No. 1, pp. 63-75, Jan. 2007.
- [104]. Y. Li, G. R. Arce, and J. Bacca, "Weighted Median Filters for Multichannel Signals," *IEEE Trans. on Signal Processing*, Vol. 54, pp. 4271-4281, Nov. 2006.
- [105]. J. Gonzalez, J. Paredes, and G. R. Arce, "Zero-Order Statistics: A Mathematical Framework for the Processing and Characterization of Very Impulsive Signals," *IEEE Trans. on Signal Processing*, Vol. 54, pp. 3839-3851, Oct. 2006.
- [106]. Z. Zhou and G. R. Arce, "Halftone Visual Cryptography," *IEEE Trans. on Image Processing*, Vol. 15, pp. 2441-2453, Aug. 2006.
- [107]. L. Ma, K. Barner, and G. R. Arce, "Statistical Analysis of TCP's Retransmission Timeout Algorithm," *IEEE/ACM Trans. on Networking*, Vol. 14, pp. 383-396, April 2006.
- [108]. S. Hoyos, B.M Sadler and G. R. Arce, "Broadband Multicarrier Communications Receiver Based on Analog to Digital Conversion in the Frequency Domain," *IEEE Transactions on Wireless Communications*, Vol. 5, No. 3, pp. 652-661, March 2006.
- [109]. R. Ge, G. R. Arce, and G. DiCrescenzo, "Approximate Message Authentication Codes for N-ary Alphabets," *IEEE Trans. Information Forensics and Security*, Vol. 1, pp. 56-67, March 2006.
- [110]. G. DiCrescenzo, R. Ge, G. R. Arce, "Securing Reliable Server Pooling in MANET Against Byzantine Adversaries," *IEEE Journal on Select Area in Comm.*, Vol. 24, No. 2, pp. 357-369, Feb. 2006.
- [111]. G. Di Crescenzo, R. Graveman, R. Ge and G. R. Arce. "Approximation Message Authentication and Biometric Entity Authentication, "Financial Cryptography and Data Security 2005, Lecture Notes in Computer Science (LNCS)," Vol. 3570, pp. 240-254, Aug. 2005.
- [112]. S. Hoyos, B. M. Sadler, and G. R. Arce, "Mono-bit digital receivers for ultra-wideband communications," *IEEE Transactions Letters on Wireless Communications*, Vol. 4, No. 4, July 2005 Pages:1337-1344.
- [113]. S. Hoyos, Y. Li, J. Bacca, G. R. Arce, "Spectral design of weighted median filters: A General Iterative Approach," *IEEE Transactions on Signal Processing*, Volume 53, Issue 3, pp. 1045-1056, March 2005.
- [114]. S. Bohacek, K. Shah, G. R. Arce, and M. Davis, "Signal Processing Challenges in Active Queue Management," *Signal Processing Magazine*, Volume 21, Issue 5, pp. 69-79, Sept. 2004.
- [115]. S. Hoyos, Y. Li, J. Bacca, G. R. Arce, "Weighted Median Filters Admitting Complex-Valued Weights and Their Optimization," *IEEE Transactions on Signal Processing*, Volume 52, Issue 10, pp. 2776-2787, Oct. 2004
- [116]. Y. Li and G. R. Arce, "A Maximum Likelihood Approach To Least Absolute Deviation Regression," *EURASIP Journal on Applied Signal Processing*, Volume 12, Issue 9, pp. 1762-1769, Sep. 2004
- [117]. L. Ma, G. R. Arce, K. Barner, "TCP Retransmission Timeout Algorithm Using Weighted Medians," *IEEE Signal Processing Letters*, Volume 11, Issue 6, pp. 569-572, June, 2004.
- [118]. S. Hoyos, J. A. Garcia, and G. R. Arce, "Mixed-Signal Equalization Architectures for Printed Circuit Boards," *IEEE Transactions on Circuits and Systems I*: pp. 264-274, Vol. 51, Issue 2, Feb. 2004.
- [119]. S. Hoyos, Y. Li, J. Bacca, and G. R. Arce, "Weighted Median Filters Admitting Complex valued Weights and their Optimization," *IEEE Transactions on Signal Processing*, Vol. 52, No. 10, pp. 2776-2787, Part 1, Oct. 2004.
- [120]. M. J. Wilson, L. Xie, G. R. Arce, R. F. Graveman, "Content-Based Searching of Multimedia Databases by Use of Approximate Digital Signatures," *Applied Optics*, Vol. 42, Issue 29, pp. 5855, October 2003.

- [121]. G. R. Arce, K. Barner, L. Ma, "Red Gateway Congestion Control Using Median Queue Size Estimates," *IEEE Transactions on Signal Processing*, Volume 51, Issue 8, pp. 2149-2164, August, 2003.
- [122]. D. L. Lau, R. Ulichney, and G. R. Arce, "Blue and Green-Noise Halftoning Models," *IEEE Signal Processing Magazine*, Volume 20, Issue 4, pp. 28-28, July 2003.
- [123]. K. M. Bloch, G. R. Arce, "Median Correlation for the Analysis of Gene Expression Data," *Signal Processing*, Volume 83, Issue 2, pp. 811-823, Feb. 2003.
- [124]. J. Paredes and G. R. Arce, "Optimization of Stack Filters based on Mirrored Threshold Decomposition," *IEEE Transactions on Signal Processing*, 2002.
- [125]. G. R. Arce and Y. Li, "Median Power and Median Correlation Theory," *IEEE Transactions on Signal Processing*, Volume 50, Issue 11, pp. 2768-2776, Nov. 2002.
- [126]. D. Lau, A. Khan, and G. R. Arce, "Minimizing Stochastic Moire in FM Halftone by Means of Green-Noise-Masks," *Journal of the Optical Society of America A*, Volume 19, Issue 11, pp. 2203-2217, Nov. 2002.
- [127]. F. Faheem, D. L. Lau, and G. R. Arce, "Digital Multitoning Using Gray Level Separation," *Journal of Imaging Science and Technology*, Volume 46, Issue 5, pp. 385-397, Sept./Oct. 2002.
- [128]. M. Fisher, J. Paredes, and G. R. Arce, "Weighted Median Image Sharpeners for the World Wide Web," *IEEE Transactions on Image Processing*, Volume 11, Issue 7, pp. 717-727, July 2002.
- [129]. J. L. Paredes, G. R. Arce, and L. Russo, "Multichannel Image Compression by Bijection Mappings onto Zero-Trees," *IEEE Transactions on Image Processing*, Volume 11, Issue 3, pp. 223-233, March 2002.
- [130]. J. G. Gonzalez and G. R. Arce, "Statistically Efficient Filtering in Impulsive Environments: Weighted Myriad Filters," *EURASIP Journal of Applied Signal Processing*, Vol. 2002, No. 1, pp. 4-20, January 2002.
- [131]. I. Shmulevich and G. R. Arce, "Spectral Design of Weighted Median Filters Admitting Negative Weight," *IEEE Signal Processing Letters*, Vol. 8, No. 12, Dec. 2001.
- [132]. L. Xie and G. R. Arce, "A Class of Authentication Digital Watermarks for Secure Multimedia Communication," *IEEE Transactions on Image Processing*, Vol. 10, No. 11, Nov. 2001.
- [133]. S. Kalluri and G. R. Arce, "Robust Frequency-Selective Filtering Using Weighted Myriad Filters Admitting Real-Valued Weights," *IEEE Transactions on Signal Processing*, Volume 49, Issue 11, pp. 2721-2733, Nov. 2001.
- [134]. L. Xie and G. R. Arce, "Approximate Image Authentication Codes," *IEEE Transactions on Multimedia*, Volume 3, Issue 2, pp. 242-252, June 2001.
- [135]. J. G. Gonzalez and G. R. Arce, "Weighted Myriad Filters: A Powerful Framework for Efficient Filtering in Impulsive Environments," *IEEE Transactions on Signal Processing*, February 2001.
- [136]. J. Paredes and G. R. Arce, "Optimization of Stack Filters Based on Mirrored Threshold Decomposition," *IEEE Transactions on Signal Processing*, Volume 49, Issue 2, pp. 438-441, Feb. 2001.
- [137]. G. R. Arce and R. Hasan, "Elimination of Interference Terms in the Wigner Ville Distribution Using Nonlinear Filtering," *IEEE Transactions on Signal Processing*, Volume 48, Issue 8 pp. 2321-2331, Aug. 2000.
- [138]. A. Flaig, K. Barner, and G. R. Arce, "Fuzzy Ranking: Theory and Applications," *Journal of Signal Processing*, Volume 80, Issue 6, pp. 1017-1036, June 2000.
- [139]. J. G. Gonzalez, E. A. Heredia, T. Rahman, K. E. Barner, and G. R. Arce. "Optimal Digital Filtering for Tremor Suppression," *IEEE Transactions on Systems, Man and Cybernetics*, Volume 47, Issue 5, pp. 664 - 673, May 2000.

- [140]. D. L. Lau, G. R. Arce, and N. C. Gallagher, "Digital Color Halftoning with Generalized Error Diffusion and Multi-Channel Green-Noise Masks," *IEEE Transactions on Image Processing*, Volume 9, Issue 5, pp. 923 - 935, May 2000.
- [141]. E. A. Heredia and G. R. Arce, "Shape Adaptive Networks Based on Combinations of Piecewise Polynomial Kernels," *IEEE Transaction on Neural Networks*, April 1995.
- [142]. A. Flaig, K. Barner, and G. R. Arce, "Fuzzy Ranking: Theory and Applications," *Signal Processing*, v.80 n.6, p.1017-1036, June 2000.
- [143]. G. R. Arce and J. L. Paredes, "Recursive Weighted Median Filters Admitting Negative Weights and their Optimization," *IEEE Transactions on Signal Processing*, Volume 48, Issue 3, pp. 768 - 779, March 2000.
- [144]. G. R. Arce, N. Grabowski, and N. C. Gallagher, "Weighted Median Filters with Sigma Delta Modulation Encoding," *IEEE Transactions on Signal Processing*, Volume 48, Issue 2, pp. 489 - 498, February 2000.
- [145]. J. L. Paredes, G. R. Arce, and L. Russo, "Multispectral Image Compression by Bijection Mappings onto Zero-trees," *IEEE Transactions on Image Processing*, Jan. 2000.
- [146]. S. Kalluri and G. R. Arce, "Fast Algorithms for Weighted Myriad Computation by Fixed Point Search," *IEEE Transactions on Signal Proc.*, Vol. 48, Issue 1, pp. 159-171, Jan. 2000.
- [147]. J. L. Paredes and G. R. Arce, "Stack Smoothers, Stack Filters, and Mirrored Threshold Decomposition," *IEEE Transactions on Signal Processing*, Volume 47, Issue 11, pp. 2757 - 2767, Nov. 1999.
- [148]. S. Kalluri and G. R. Arce, "A General Class of Nonlinear Normalized Adaptive Filtering Algorithms," *IEEE Transactions on Signal Processing*, Volume 47, Issue 8, pp. 2262-2272, August 1999.
- [149]. D. L. Lau, G. R. Arce, and N. C. Gallagher, "Digital Halftoning by means of Green-Noise Masks," *Journal of the Optical Soc. of America A*, Volume 16, Issue 7, pp. 1575-1586 July 1999.
- [150]. D. W. Griffith and G. R. Arce, "A Partially Decoupled RLS Algorithm for Volterra Filters," *IEEE Transactions on Signal Processing*, Volume 47, Issue 2, pp. 579-582, February 1999.
- [151]. G. R. Arce, "A Generalized Weighted Median Filter Structure Admitting Negative Filter Weights," *IEEE Transactions on Signal Processing*, Volume 46, Issue 12, pp. 2849 - 2852, December 1998.
- [152]. D. L. Lau, G. R. Arce, and Neal C. Gallagher, "Green-Noise Digital Halftoning," *Proceedings of the IEEE*, Volume 86, Issue 12, pp. 2424-2444, December 1998.
- [153]. X-G Xia, C. G. Boncelet and G. R. Arce, "Wavelet Transform based Watermark for Digital Images," *Optics Express*, Volume 3, Issue 12, December 1998, pp. 477-523.
- [154]. K. E. Barner, A. Flaig and G. R. Arce, "Fuzzy Time Rank Relations and Order Statistics," *IEEE Signal Processing Letters*, Volume 5, Issue 10, pp. 252-255, October 1998.
- [155]. A. Flaig, G. R. Arce, and K. E. Barner. "Affine Order Statistic Filters: 'Medianization' of Linear FIR Filters," *IEEE Transactions on Signal Processing*, Volume 46, Issue 8, pp. 2101-2112, August 1998.
- [156]. S. Kalluri and G. R. Arce, "Adaptive Weighted Myriad Filter Algorithms for Robust Signal Processing in Alpha-stable Noise Environments," *IEEE Transactions on Signal Processing*, Volume 46, Issue 2, pp. 322-334, February 1998.
- [157]. K. E. Barner and G. R. Arce, "Design of permutation order statistic filters through group colorings," *IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing*, Volume 44, Issue 7, pp. 531-548, July 1997.
- [158]. D. W. Griffith and G. R. Arce, "Partially Decoupled Volterra Filters: Formulation and LMS Adaptation," *IEEE Transactions on Signal Processing*, Volume 45, Issue 6, pp. 1485-1494, June 1997.

- [159]. J. Schwendowius and G. R. Arce, "Data Adaptive Digital Video Format Conversion Algorithms," *IEEE Transactions on Circuits and Systems Video Technology*, Volume 7, Issue 3, pp. 511-526, June 1997.
- [160]. M. Mueller and G. R. Arce, "Truncation Artifacts in Tomographic Reconstruction from Projections," *Journal of Applied Optics*, Volume 35, Issue 20, p. 3902, July 1996.
- [161]. E. A. Heredia and G. R. Arce, "Piecewise Linear System Modeling Based on a Continuous Threshold Decomposition," *IEEE Transactions on Signal Processing*, Volume 44, Issue 6, pp. 1440-1453, June 1996.
- [162]. G. R. Arce, and M. Tian, "Order-Statistic Filter Banks," *IEEE Transactions on Image Processing*, Volume 5, Issue 6, pp. 827 -837, June 1996.
- [163]. J. Gonzalez and G. R. Arce, "Multiple Access in Wireless Communications," *Col. Telecomm. Rev.*, Nov. 1995.
- [164]. G. R. Arce, T. A. Hall and K. E. Barner, "Permutation Weighted Order Statistic Filters," *IEEE Transactions on Image Processing*, Volume 4, Issue 8, pp. 1070-1083, August 1995.
- [165]. Y.-T. Kim, R. Arce, and N. Grabowski, "Inverse halftoning using binary permutation filters," *IEEE Trans. Image Processing*, vol. 4, pp. 1296-1310, Sept. 1995.
- [166]. M. Mueller, G. R. Arce, and R. Blake, "Synthetic Scanner Reconstruction in Fan and Cone Beam Tomography," *Journal of Applied Optics*, Volume 33, Issue 35, pp. 8255-8269, Dec. 1994.
- [167]. Y.-T. Kim and G. R. Arce, "Permutation Filter Lattices: A General Order Statistic Filtering Framework," *IEEE Transactions on Signal Processing*, Volume 42, Issue 9, pp. 2227-2241, September 1994.
- [168]. M. Mueller and G. R. Arce, "A Generalized Fan Beam Reconstruction Algorithm and its Applications," *Journal of the Optical Society of America A*, Volume 11, Issue 9, pp. 2410-2428, September 1994.
- [169]. K. E. Barner and G. R. Arce, "Permutation Filters: A New Nonlinear Filter Class Based on Set Permutations," *IEEE Transactions on Signal Processing*, Volume 42, Issue 4, pp. 782-798, April 1994.
- [170]. S. Chen and G. R. Arce, "Microstatistic LMS Filtering," *IEEE Transactions on Signal Processing*, Volume 41, Issue 3, pp. 1021-1034, March 1993.
- [171]. G. R. Arce, "Microstatistics in Signal Decomposition and the Optimal Filtering Problem," *IEEE Transactions on Signal Processing*, Volume 40, Issue 1, pp. 2669-2682, Nov. 1992.
- [172]. K. E. Barner, G. Arce, and J. Lin, "Performance of Stack Filters and Vector Detection in Image Restoration," *Circuits, Systems, and Signal Processing*, Volume 11, Issue 1, January 1992.
- [173]. R. Hardie and G. R. Arce, "Ranking in  $R_p$  and its use in Multivariate Image Est.," *IEEE Trans, on Circuits and Systems, Video Tech.*, Volume 1, Issue 2, pp. 197-209, June 1991.
- [174]. G. R. Arce, "Motion Preserving Ranked Order based Filters for Image Sequence Processing," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, SP39, Issue 5, pp. 1146-1163, May 1991.
- [175]. T. S. Rao, G. R. Arce, and J. Allebach, "Analysis of Ordered Dither for Arbitrary Sampling Lattices and Screen Periodicities," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, ASSP38, Issue 11, pp. 1981-2000, November 1990.
- [176]. G. R. Arce and R. Foster, "Detail Preserving Ranked Order Based Filters for Image Processing," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, ASSP37, Issue 1, pp. 83-98, January 1989.
- [177]. G. R. Arce and S. Fontana, "The Midrange Estimator," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, ASSP36, Issue 6, pp. 920-922, June 1988.

- [178]. G. R. Arce and N. C. Gallagher, "Stochastic Analysis of the Recursive Median Filter Process," *IEEE Transactions on Info. Theory*, IT34, Issue 4, pp. 669-679, July 1988.
- [179]. T. Rao and G. R. Arce, "Halftone Patterns for Arbitrary Screen Periodicities," *Journal of the Optical Society of America A*, Issue 5, September 1988.
- [180]. M. McLoughlin and G. R. Arce, "Root Signal Analysis for the Recursive Separable Median Filter," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, ASSP35, Issue 1, January 1987.
- [181]. G. R. Arce and M. McLoughlin, "Theoretical Analysis of the Max/Median Filter," *IEEE Transactions on Acoustics, Speech, and Signal Proc.*, ASSP35, 1, pp. 60-69, January 1987.
- [182]. G. R. Arce and R. L. Stevenson, "Synthesis of Median Filter Systems," *IEEE Transactions on Circuits and Systems*, CAS34, Issue 4, pp. 420-429, April 1987.
- [183]. R. L. Stevenson and G. R. Arce, "Morphological Filters: Statistics and Further Syntactical Properties," *IEEE Transactions on Circuits and Systems*, Special Issue in Image Processing, CAS34, Issue 9, November 1987.
- [184]. G. R. Arce, "Statistical Threshold Decomposition for Recursive and Non Recursive Median Filters," *IEEE Transactions on Information Theory*, IT Volume 32, Volume 2, pp. 243-253, March 1986.
- [185]. R. L. Stevenson and G. R. Arce, "Binary Display of Hexagonally Sampled Continuous Tone Images," *Journal of the Optical Society of America A*, July 1985.
- [186]. G. R. Arce, "Fibonacci and Related Sequences in Digital Filtering," *The Fibonacci Quarterly*, Volume 22, August 1984.
- [187]. G. R. Arce and N. C. Gallagher, "BTC Image Coding Using Median Filter Roots," *IEEE Transactions on Communications*, COM31, Issue 6, pp. 784-793, June 1983.
- [188]. G. R. Arce and N. C. Gallagher, "State Description of the Root Signal Set of Median Filters," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, ASSP30, Issue 6, pp. 894-902, December 1982.

---

*Conference Papers*

- [1]. Zhao, Qile, Xu Ma, Angela Cuadros, Gonzalo R. Arce, and Rui Chen. "Non-Linear 3d Reconstruction For Compressive X-Ray Tomosynthesis." In 2020 IEEE International Conference on Image Processing (ICIP), pp. 3149-3153. IEEE, 2020.
- [2]. Mao, Tianyi, Xu Ma, Angela P. Cuadros, and Gonzalo R. Arce. "Coded aperture optimization in x-ray tomosynthesis via sparse principal component analysis." In Anomaly Detection and Imaging with X-Rays (ADIX) V, vol. 11404, p. 114040E. International Society for Optics and Photonics, 2020.
- [3]. Don, Michael, and Gonzalo Arce. "Antenna Pattern Measurement with Compressive Phase Retrieval." In 2020 IEEE Radio and Wireless Symposium (RWS), pp. 38-38. IEEE, 2020.
- [4]. Zhu, Jianchen, Shengjie Zhao, Xu Ma, and Gonzalo R. Arce. "On theoretical optimization of the sensing matrix for sparse-dictionary signal recovery." In 2019 IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp. 1-5. IEEE, 2019.
- [5]. A. P. Cuadros, X. Ma, and G. R. Arce. "Compressive x-ray material decomposition using structured illumination." In *Developments in X-Ray Tomography XII*, vol. 11113, p. 111131H. International Society for Optics and Photonics, 2019.
- [6]. K. Pena-Pena, , X. Ma, D. L. Lau, and G. R. Arce. "Per-pixel calibration using CALTag and dense 3D point cloud reconstruction." In *Applications of Digital Image Processing XLII*, vol. 11137, p. 111371C. International Society for Optics and Photonics, 2019.
- [7]. A. P. Cuadros, X. Ma, and G. R. Arce. "Coded Illumination in Compressive X-ray CT." In *Mathematics in Imaging*, pp. JW2A-20. Optical Society of America, 2019.



- [8]. E. Salazar, and G. R. Arce. “Optimal Coding Patterns in Spatial Spectral Compressive Spectral Imagers.” In *Propagation Through and Characterization of Atmospheric and Oceanic Phenomena*, pp. JW4B-3. Optical Society of America, 2019.
- [9]. A. Parada-Mayorga, D. L. Lau, J. H. Giraldo, and G. R. Arce. “Sampling of Graph Signals with Blue Noise Dithering.” In *2019 IEEE Data Science Workshop*. 2019.
- [10]. D. Guillot, A. Parada-Mayorga, S. Cioaba, and G. R. Arce. “Optimal Sampling Sets in Cographs.” In *2019 IEEE Data Science Workshop (DSW)*. 2019.
- [11]. A. P. Cuadros, X. Ma, and G. R. Arce. “K-edge coded apertures for compressive spectral x-ray tomography.” In *ICASSP 2019-2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 7730-7734. IEEE, 2019.
- [12]. L. Galvis, E. Mojica, H. Arguello, and G. R. Arce. “Optimization of a Moving Colored Coded Aperture in Compressive Spectral Imaging.” In *ICASSP 2019-2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 7685-7689. IEEE, 2019.
- [13]. X. Zhang, J. Jiang, A. Ming, X. Kang, and G. R. Arce. “Spatio-spectral Modulation Using a Binary Photomask for Compressive Chromotomography.” In *ICASSP 2019-2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 7710-7714. IEEE, 2019.
- [14]. K. Pena-Pena, and G. R. Arce. “Channel Coding Optimization for Visually Pleasant QR Codes: Invited Presentation.” In *2019 53rd Annual Conference on Information Sciences and Systems (CISS)*, pp. 1-4. IEEE, 2019.
- [15]. J. A. Becerra, M. J. Madero-Ayora, J. Reina-Tosina, C. Crespo-Cadenas, J. García-Frías, and G. R. Arce. “A reduced-complexity doubly orthogonal matching pursuit algorithm for power amplifier sparse behavioral modeling”. In *2019 IEEE Topical Conference on RF/Microwave Power Amplifiers for Radio and Wireless Applications (PAWR)* (pp. 1-3). IEEE, 2019.
- [16]. M. L. Don, and G. R. Arce. “Antenna Radiation Pattern Compressive Sensing.” In *MILCOM 2018-2018 IEEE Military Communications Conference (MILCOM)*, pp. 174-181. IEEE, 2018.
- [17]. M. L. Don, and G. R. Arce. “Antenna Radiation Pattern Compressive Sensing.” In *MILCOM 2018-2018 IEEE Military Communications Conference (MILCOM)*, pp. 174-181. IEEE, 2018.
- [18]. T. Mao, A. P. Cuadros, X. Ma, W. He, Q. Chen, and G. R. Arce, “Optimization of coded aperture in compressive x-ray tomography,” *Proc. SPIE 10752, Applications of Digital Image Processing XLI, 107521S* (17 September 2018)
- [19]. C. V. Correa, H. Arguello, and G. R. Arce, “Multi-Resolution Reconstructions from Compressive Spectral Coded Projections”, *Proceedings of European Signal Processing Conference (EUSIPCO '18)*, Rome, Italy, (September 2017).
- [20]. W. Ren, C. Fu, and G. R. Arce, “The first result of compressed channeled imaging spectropolarimeter”. *Applied Industrial Optics: Spectroscopy, Imaging and Metrology*, Orlando, FL, USA, 2018.
- [21]. E. Salazar, A. Parada, and G. R. Arce, “Spatial super-resolution reconstruction via sscsi compressive spectral imagers”. *Computational Optical Sensing and Imaging*, Orlando, FL, USA, 2018.
- [22]. H. Rueda, D. L. Lau, and G. R. Arce, “Snapshot Compressive Spectral+ Depth Imaging with Color-Coded Apertures”. *Computational Optical Sensing and Imaging*, Orlando, FL, USA, 2018.
- [23]. E. Salazar, A. Parada, and G. R. Arce, “Spectral zooming in sscsi compressive spectral imagers”. *Computational Optical Sensing and Imaging*, Orlando, FL, USA, 2018.

- [24]. X. Ma, C. Fu, and G. R. Arce, "Compressive coded LED and coded aperture spectral video system". Computational Optical Sensing and Imaging, Orlando, FL, USA, 2018.
- [25]. X. Ma, H. Zhang, X. Ma, G. R. Arce, T. Xu, T. Mao, "Snapshot compressive spectral imaging based on adaptive coded apertures," Proc. SPIE 10658, Compressive Sensing VII: From Diverse Modalities to Big Data Analytics, 1065803 (14 May 2018).
- [26]. X. Ma, C. Fu, and G. R. Arce, "High frame-rate compressive spectral video system", in Proc. SPIE 10658, Compressive Sensing VII: From Diverse Modalities to Big Data Analytics, 1065804 (14 May 2018).
- [27]. H. Rueda, H. Arguello, and G. R. Arce, "High-dimensional Optimization of Color Coded Apertures for Compressive Spectral Cameras", Proceedings of European Signal Processing Conference (EUSIPCO '17), Kos Island, Greece, (August 2017).
- [28]. A. P. Cuadros, and G. R. Arce, "Coded Aperture Compressive X-ray Spectral CT," 2017 International Conference on Sampling Theory and Applications (SampTA), Tallinn, Estonia, (July 2017).
- [29]. H. Rueda, H. Arguello, and G. R. Arce, "Optimal Colored Coded Apertures for Compressive Spectral Imaging Systems", Proceedings of Imaging and Applied Optics 2017 (COSI '17), OSA Technical Digest (online) (Optical Society of America, 2017), San Francisco, CA., USA, (June 2017).
- [30]. H. Rueda, D. Lau, and G. R. Arce, "Spectral+Depth Imaging with a Time-of-Flight Compressive Snapshot Camera ", Proceedings of Imaging and Applied Optics 2017 (COSI '17), OSA Technical Digest (online) (Optical Society of America, 2017), San Francisco, CA., USA, (June 2017).
- [31]. D. Lau, Y. Zhang, T. Hastings, H. Rueda, and G. R. Arce, "Light Field Modeling for Coded Aperture Systems", Proceedings of Imaging and Applied Optics 2017 (COSI '17), OSA Technical Digest (online) (Optical Society of America, 2017), San Francisco, CA., USA, (June 2017).
- [32]. A. Parada-Mayorga, A. P. Cuadros, and G. R. Arce, "Coded aperture design for compressive X-ray tomosynthesis via coherence analysis," in IEEE 14th International Symposium on Biomedical Imaging (ISBI 2017), April 18, 2017.
- [33]. R. F. Noriega, A. B. Ramirez, S. A. Abreo, and G. R. Arce, "Implementation strategies of the seismic Full Waveform Inversion," in IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), March 5, 2017.
- [34]. L. Galvis, H. Arguello, Daniel Lau, and G. R. Arce, "Side information in coded aperture compressive spectral imaging," in Proc. SPIE 10117, Emerging Digital Micromirror Device Based Systems and Applications IX, 101170H, February 20, 2017.
- [35]. S. Segarra, A. Garcia Marques, G. R. Arce, A. Ribeiro, "Center-Weighted Median Graph Filters," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), 2016.
- [36]. H. Rueda, H. Arguello, G. R. Arce, "Development of a Compressive Spectral Testbed based on Thin-film Color-patterned Filter Array," in Imaging and Applied Optics 2016, paper CW5D.3.
- [37]. C. V. Correa, H. Arguello, G. R. Arce, "Testbed Implementation of a Compressive Spectral Imaging System with Spatio Temporal Blue Noise Coded Apertures," in Imaging and Applied Optics 2016, paper CW5D.8.
- [38]. W. Feng, H. Rueda, C. Fu, Q. Chen, G. R. Arce, "Compressive spectral integral imaging using a microlens array," in SPIE Commercial + Scientific Sensing and Imaging, Baltimore, MD, USA, 2016.
- [39]. C. A. Hinojosa, C. V. Correa, H. Arguello, G. R. Arce, "Compressive spectral imaging using multiple snapshot colored-mosaic detector measurements," in SPIE Commercial + Scientific Sensing and Imaging, Baltimore, MD, USA, 2016.

- [40]. C. V. Correa, H. Arguello, G. R. Arce, "Spatio-spectral uniform multi-frame coded apertures for compressive spectral imaging," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp.614-618, 2015.
- [41]. J. Tan, Y. Ma, H. Rueda, D. Baron, G. R. Arce, "Approximate message passing in coded aperture snapshot spectral imaging," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp.609-613, 2015.
- [42]. L. Galvis, H. Arguello, G. R. Arce, "Synthetic coded apertures in compressive spectral imaging: Experimental validation," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp.605-608, 2015.
- [43]. H. Rueda, H. Arguello, G. R. Arce, "Colored coded aperture compressive spectral imaging: Design and experimentation," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp.601-604, 2015.
- [44]. H. Rueda, D. Lau, G. R. Arce, "RGB detectors on compressive snapshot multi-spectral imagers," in IEEE Global Conference on Signal and Information Processing (GlobalSIP), pp.388-392, 2015.
- [45]. H. Rueda, H. Arguello, G. R. Arce, "Dual-ARM VIS/NIR compressive spectral imager," in IEEE International Conference on Image Processing (ICIP), pp.2572-2576, 2015.
- [46]. W. Feng, Q. Chen, W. He, G. R. Arce, G. Gu, J. Zhuang, "Random projection-based dimensionality reduction method for hyperspectral target detection". SPIE Optical Engineering+ Applications, 2015.
- [47]. A. Cuadros, K. Wang, C. Peitch, H. Arguello, G. Arce, "Coded aperture design for compressive X-ray tomosynthesis". Computational Optical Sensing and Imaging, Arlington, VA, USA, 2015.
- [48]. A. Ramirez, G. R. Arce, "Seismic full waveform inversion from compressive measurements". SPIE Sensing Technology+ Applications, Baltimore, MD, USA, 2015.
- [49]. C. Fu, H. Arguello, B.M. Sadler, G. R. Arce, "Compressive spectral polarization imaging with coded micropolarizer array". SPIE Sensing Technology+ Applications, Baltimore, MD, USA, 2015.
- [50]. A. Ramirez, R. Carrillo, G. R. Arce, K. Barner, B. Sadler "An overview of robust compressive sensing of sparse signals in impulsive noise". European Signal Processing Conference (EUSIPCO), 2015.
- [51]. A. Ramirez, R. Carrillo, G. R. Arce, K. Barner, B. Sadler "An overview of robust compressive sensing of sparse signals in impulsive noise". European Signal Processing Conference (EUSIPCO), 2015.
- [52]. A.P. Cuadros, G. R. Arce, H. Arguello, "Coded aperture design in compressive X-ray tomography". IEEE Global Conference in Signal and Information Processing (GlobalSIP), pp. 656-659, 2014.
- [53]. H. Arguello, Y. Mejia, and G. R. Arce, "Colored coded apertures optimization in compressive spectral imaging by restricted isometry property". IEEE International Conference on Image Processing, Paris, France, October 2014.
- [54]. H. Rueda, H. Arguello, and G. R. Arce, "Experimental demonstration of a colored coded aperture-based compressive spectral imaging system". OSA Computational Optical Sensing and Imaging (COSI) Meeting, Kohala Coast, HI, USA, June 2014.
- [55]. A. Ramirez, G. R. Arce and B. M. Sadler. "Spectral image unmixing from optimal coded-aperture compressive measurements". 6th International Symposium on Communications, Control and Signal Processing (ISCCSP), May 2014.
- [56]. L. Galvis, H. Arguello and G. R. Arce. "Synthetic coded apertures in compressive spectral imaging". IEEE ICASSP, Florence, Italy, May 2014.
- [57]. H. Rueda, H. Arguello and G. R. Arce. "Compressive spectral imaging based on colored coded apertures". IEEE ICASSP, Florence, Italy, May 2014.

- [58]. C. V. Correa, H. Arguello and G. R. Arce. "Compressive spectral imaging with colored patterned detectors". IEEE ICASSP, Florence, Italy, May 2014.
- [59]. P. Li, H. Xiong, H. Arguello and G. R. Arce. "Embedded transform coding based lossless compression in compressive spectral imaging with coded aperture". Data Compression Conference (DCC), Snowbird, Utah, USA, March 2014.
- [60]. C. Fu, H. Arguello, G. R. Arce and V. Lorenz. "Compressive spectral polarization imaging". SPIE Sensing Technology+ Applications, Baltimore, MD, USA, May 2014.
- [61]. H. Arguello and G. R. Arce. "Coded aperture compressive spectral imaging". XVIII Signal Processing, Imaging and Artificial Vision Symposium - STSIVA, Bogota, Colombia, September 2013.
- [62]. A. Rauh and G. R. Arce. "Sparse 2D fast Fourier transform". 10th International Conference on Sampling Theory and Applications, Bremen, Germany, July 2013.
- [63]. A. Ramirez, G. R. Arce and B. M. Sadler. "Overcomplete dictionaries for scene classification in coded-aperture spectral imaging". Signal Processing with Adaptive Sparse Structured Representations (SPARS), Lausanne, Switzerland, July 2013.
- [64]. H. Rueda, A Parada, H. Arguello, Y. Wu, D. W. Prather, and G. R. Arce. "Demonstration of a higher-order discretization model for compressive spectral imaging". OSA Computational Optical Sensing and Imaging (COSI) Meeting, Arlington, VA, USA, 2013.
- [65]. H. Arguello, A. Parada, G. R. Arce, "Optimization of pseudorandom coded apertures for compressive spectral imaging", in SPIE Conference on Defense, Security and Sensing, Baltimore, MD, USA, 2013.
- [66]. H. Arguello, H. Rueda and G. R. Arce. "High precision discretization model for coded aperture-based compressive spectral imaging", in IEEE ICASSP, Vancouver, Canada, 2013.
- [67]. H. Arguello, C. V. Correa, and G. R. Arce. "Block-based reconstructions for compressive spectral imaging", in SPIE Conference on Defense, Security and Sensing, Baltimore, MD, USA, 2013.
- [68]. H. Arguello, H. Rueda, and G. R. Arce. "On super-resolved coded aperture spectral imaging", in SPIE Conference on Defense, Security and Sensing, Baltimore, MD, USA, 2013.
- [69]. Wei Qiao, Bin Liu, Zixiang Xiong, G. R. Arce, J. Garcia-Frias, Wenwu Zhu, Zhisheng Yan, "Block-based variable density compressed image sampling," in 19th IEEE International Conference on Image Processing (ICIP), pp.909-9012, 2012.
- [70]. Bin Liu, Wei Qiao, Zixiang Xiong, G. R. Arce, J. Garcia-Frias, "Block-based compressed sampling with non-linear coding for image transmission," in IEEE 14th International Workshop on Multimedia Signal Processing (MMSP), pp.59-64, 2012.
- [71]. H. Arguello and G. R. Arce. "Restricted Isometry Property in Coded Aperture Compressive Spectral Imaging", in IEEE Statistical Signal Processing Workshop, Ann Arbor, MI, USA, 2012.
- [72]. Y. Wu, G. R. Arce, and D. W. Prather, "Experimental Demonstration of an NIR Compressive Sensing Hyper-Spectral Imaging System," in OSA Optics and Photonics Congress, Monterey, CA, USA, 2012.
- [73]. H. Arguello and G. R. Arce. "Spectrally Selective Compressive Imaging by Matrix System Analysis", in OSA Optics and Photonics Congress, Monterey, CA, USA, 2012.
- [74]. A. Ramirez, G. R. Arce, and B. M. Sadler. "Coded-Aperture Compressive Spectral Image Classification. Computational Optical Sensing and Imaging. OSA. Monterrey, CA. June, 2012.
- [75]. H. Arguello, H. Rueda and G. R. Arce. "Spatial super-resolution in code aperture spectral imaging", in SPIE Conference on Defense, Security and Sensing, Baltimore, MD, USA, April 2012.

- [76]. A. Ramirez, G. R. Arce, and Brian M. Sadler. "Hyperspectral Pixel Classification from Coded-Aperture Compressive Imaging. Defense, Security and Sensing, SPIE. Baltimore, MD. April 2012.
- [77]. H. Arguello, H. Rueda and G. R. Arce. "Spatial super-resolution in code aperture spectral imaging", in SPIE Conference on Defense, Security and Sensing, Baltimore, MD, USA, April 2012.
- [78]. Y. Wu, I. Mirza, G. R. Arce, and D. W. Prather, "Study of a near infrared digital micromirror device-based snapshot spectral imaging system," Proceedings of the SPIE, SPIE Photonics West, Conf. 8254, San Francisco, Feb. 2012.
- [79]. G. DiCrescenzo, G. R. Arce, "Data Forensics Constructions from Cryptographic Hashing and Coding," International Workshop on Digital Watermarking, pp. 494-509, Atlantic City, NJ, 2011.
- [80]. YPC. Kotropoulos, G. R. Arce, "l1-graph based music structure analysis", in International Society for Music Information Retrieval Conference (ISMIR), 2011.
- [81]. H. Arguello and G. Arce, "Code Aperture Agile Spectral Imaging (CAASI)," in Imaging and Applied Optics, OSA Technical Digest (CD) (Optical Society of America, 2011), paper ITuA4.
- [82]. A. Ramirez, H. Arguello, G. R. Arce, "Video Anomaly Recovery From Compressed Spectral Imaging," International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 22-27. Prague, Czech Republic, 2011.
- [83]. D. Otero and G. R. Arce, "Generalized Restricted Isometry Property For Alpha-Stable Random Projections," International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 22-27. Prague, Czech Republic, 2011.
- [84]. Y. Wu and G. R. Arce, "Snapshot Spectral Imaging Via Compressive Random Convolution," International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 22-27. Prague, Czech Republic, 2011.
- [85]. H. Arguello and G. R. Arce, "Filter Bank Compressive Spectral Image Decompositions and their Optimization," Imaging and Applied Optics: OSA Optics and Photonics Congress. July 10-14, Toronto Canada, 2011.
- [86]. G. R. Arce and H. Arguello, "Spectrally Adaptive Code Aperture l Imaging. SPIE Conference on Adaptive Coded Aperture Imaging (ACAI) and Non-Imaging Sensors"(Invited talk), San Diego, California, August 21-25, 2011.
- [87]. G. Garateguy, G. Arce, and J. Pelaez, "Covert channel detection in voip streams, in Information Sciences and Systems (CISS), 45th Annual Conference on CISS, pp. 1-6, March 2011.
- [88]. I. Iglesias, Aijun Song, J. Garcia-Frias, M. Badiy, G. R. Arce, "Image transmission over the underwater acoustic channel via compressive sensing," in Information Sciences and Systems (CISS), 45th Annual Conference on CISS, pp.1-6, March 2011.
- [89]. Y. Wu, I. Mirza, G. R. Arce, and D. Prather, "Development of a digital micromirror device (DMD)-based Snapshot Spectral Imaging (DMD-SSI) system," IEEE Photonics Conference (PHO-2011), pp. 149-150, Oct. 2011.
- [90]. A. Ramirez, H. Arguello, and G. R. Arce, "Anomaly Recovery from Compressed Spectral Imagery Via Low-Rank Matrix Minimization," SPIE Defense, Security, and Sensing. Orlando, FL. April 2011.
- [91]. Y. Wu, I. Mirza, G. R. Arce, and D. W. Prather, "Demonstration of a DMD-based compressive sensing (CS) spectral imaging system," CLEO 2011 - Laser Applications to Photonic Applications, OSA Technical Digest, (2011).
- [92]. Y. Wu, I. O. Mirza, D. W. Prather, G. Arce "Development of a DMD-based compressive sampling hyperspectral imaging system (CS-HSI)". Proc. SPIE Photonics West, San Francisco, CA, 2011.

- [93]. G. Garateguy, D. L. Lau, and G. R. Arce, "Voronoi halftone screens," International Conference on Image Processing (ICIP), Hong Kong, September 2010.
- [94]. A. Rauh and G. R. Arce, "A Fast Weighted Median Algorithm Based on Quickselect," International Conference on Image Processing (ICIP), Hong Kong, September 2010.
- [95]. C. Kotropoulos, G. R. Arce, and Y. Panagakis, "Ensemble Discriminant Sparse Projections Applied to Music Genre Classification," 20th Int. Conf. on Pattern Recognition, Istanbul, Turkey, Aug. 2010.
- [96]. A. B. Ramirez, G. R. Arce, and B. M. Sadler, "Fast Algorithm for Reconstruction of Sparse Signals from Cauchy Random Projections," *European Signal Processing Conf.*, August. 2010.
- [97]. G. R. Arce, D. Otero, A. B. Ramirez, and J. L. Paredes, "Reconstruction of sparse signals from L1 dimensionality-reduced Cauchy random-projections," *Int. Conf. on Acoustics, Speech and Signal Processing*, Dallas, March. 2010.
- [98]. J. L. Paredes and G. R. Arce, "Compressive Sensing Signal Reconstruction by Weighted Median Regression Estimates," *Int. Conf. on Acoustics, Speech and Signal Processing*, Dallas, March. 2010.
- [99]. Z. Wang and G. R. Arce, "Halftone Visual Cryptography By Iterative Halftoning," *Int. Conf. on Acoustics, Speech and Signal Processing*, Dallas, March. 2010.
- [100]. H. Arguello, P. Ye, G. R. Arce "Spectral Aperture Code Design for Multi-shot Compressive Spectral Imaging" in *Proc. International Congress of Digital Holography and Three-Dimensional imaging (DH)*, Miami, Florida, April 11-14. 2010.
- [101]. P. Ye, J. L. Paredes, G. R. Arce, Y. Wu, C. Chen, D. W. Prather, "Compressive Confocal Microscopy," *Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, Taipei, Taiwan, March. 2009.
- [102]. I. Kang, G. R. Arce, H. Lee, "Color Extended Visual Cryptography Using Error Diffusion," *Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP)*, Taipei, Taiwan, March. 2009.
- [103]. P. Ye, J. L. Paredes, G. R. Arce, Y. Wu, C. Chen, D. W. Prather, "Compressive Confocal Microscopy: 3D reconstruction algorithms", SPIE Photonics West, 2009.
- [104]. Y. Wu, C. Chen, P. Ye, Z. Wang, G. R. Arce and D. W. Prather, "Optical Calibration of a Digital Micro-Mirror Device (DMD)-Based Compressive Imaging (CI) System," SPIE Photonic West 2009, Jan. 2009.
- [105]. Z. Wang, G. R. Arce and J. L. Paredes, "Variable Density Compressed Image Sampling," *European Signal Processing Conf.*, Glasgow, Scotland, August 24-28, 2009.
- [106]. J. L. Paredes, Z. Wang, and G. R. Arce, "Compressive matched subspace detection," *European Signal Processing Conf.*, Glasgow, Scotland, August 24-28, 2009.
- [107]. Y. Hu, Z. Wang, J. G. Frias and G. R. Arce, "Non-Linear Coding for Improved Performance in Compressive Sensing", in Proc. CISS 2009, Baltimore, MD, USA.
- [108]. Y. Panagakis, C. Kotropoulos, G. R. Arce, "Music Genre Classification Via Sparse Representation Of Auditory Temporal Modulations," in Proc. *EUSIPCO*, Glasgow, Scotland, August 24-28, 2009.
- [109]. Y. Panagakis, C. Kotropoulos, G. R. Arce, "Music genre classification using locality preserving non-negative tensor factorization and sparse representations," in Proc. 10th Int. Symp. Music Information Retrieval, Kobe, Japan, October 26-30. 2009.
- [110]. Z. Wang, G. R. Arce, B. Sadler, "Subspace Compressive Detection for Sparse Signals," in Proceedings of the IEEE ICASSP, March 2008.
- [111]. Z. Wang, G. R. Arce, B. Sadler, S. Hoyos, "Subband Compressed Detection for Ultra-wideband Impulse Radio with Narrowband Interference Mitigation," invited paper for the IEEE Conference on Ultra-wideband (ICUWB), Germany, 2008.

- [112]. X. Ma and G. R. Arce, "Generalized Inverse Lithography Methods for Phase-shifting Mask Design," SPIE Symposium on Advanced Lithography, San Jose, CA, March 2007.
- [113]. A. Medina, G. Arce, B. Sadler. "Statistical Approach to Neighborhood Congestion Control in Ad hoc Wireless Networks". In: IEEE Global Telecommunications Conference, 2007 (GLOBECOM '07) . Washington D.C, USA. November 26-30. 2007.
- [114]. A. Medina, G. Arce, B. Sadler. "Neighborhood Congestion Control in Ad hoc Wireless Networks: A Statistical Approach". In: Proceedings of the International Conference on Wireless Networks 2007 (ICWN'07). Las Vegas, Nevada, USA. June 25-28. 2007.
- [115]. Z. Wang, G. R. Arce, J. L. Paredes, B. Sadler, "Compressed Detection for Ultra-wideband Impulsive Radio," In proceedings from 8th IEEE International SPAWC workshop, Helsinki, Finland, June 2007.
- [116]. Z. Wang, G. R. Arce, J. L. Paredes, B. Sadler and X. Ma, "Compressed Detection for Ultra-wideband Impulsive Radio," In proceedings from IEEE International Conference on Ultra-wideband, Singapore, September 2007.
- [117]. J. L. Paredes, G. R. Arce and Z. Wang, "Ultrawideband Compressed Sensing: Channel Estimation," in Proc. IEEE ICASSP, Honolulu, Hawaii, April, 2007.
- [118]. Z. Wang, G. R. Arce, and J. L. Paredes, "Colored Random Projections for Compressed Sensing," in Proc. IEEE ICASSP, Honolulu, Hawaii, April, 2007.
- [119]. G. DiCrescenzo, R. Ge, G. R. Arce: Threshold cryptography in mobile ad hoc networks under minimal topology and setup assumptions. *Ad Hoc Networks* 5(1): 63-75 (2007).
- [120]. G. Di Crescenzo, R. Ge, M. Fecko, and G. R. Arce, "Securing Virtual Backbone Creation in Mobile Ad Hoc Networks," In Proc. Of the 4th International Workshop on Mobile Distributed Computing (MDC' 06), Buffalo, NY, 2006.
- [121]. Z. Wang, G. R. Arce and G. Di Crescenzo, "Halftone Visual Cryptography via Direct Binary Search," 14th European Signal Processing Conference, Florence, Italy, July 2006.
- [122]. J. Ramirez, J. Paredes, and G. R. Arce, "Robust Normalization of cDNA Microarray Data," Proceedings of the 2006 IEEE Conf. on Acoustics, Speech, and Signal Processing, Toulouse, France, 2006.
- [123]. J. Bacca, G. R. Arce, D. L. Lau, "A New Method for Digital Multitoning Using Gray Level Separation," International Conference on Image Processing, Atlanta, GA, 2006.
- [124]. Z. Wang and G. R. Arce, "Halftone Visual Cryptography through Error Diffusion," International Conference on Image Processing, pp. 109-112, Atlanta, GA, Oct. 2006.
- [125]. A. J. Gonzalez, J. Bacca Rodriguez, G. R. Arce, D. L. Lau, "Alpha Stable Human Visual System Models for Digital Halftoning," IS&T/SPIE 18th Annual Symposium, San Jose, California, January 2006.
- [126]. J. Bacca Rodriguez, A. J. Gonzalez, G. R. Arce, D. L. Lau, "Optimal Halftoning over Hexagonal Grids," IS&T/SPIE 18th Annual Symposium, San Jose, California, January 2006.
- [127]. A. Gonzalez, G. R. Arce, J. Bacca, D. L. Lau, "Human Visual Alpha-Stable Models for Digital Halftoning," Human Vision and Electronic Imaging XI. IS&T/SPIE Symposium on Electronic Imaging. San Jose, CA. January 2006.
- [128]. D. Barrera, G. R. Arce, R. C. Nunez, S. Bohacek, "Diffusion Mechanisms for Congestion Making in Routers," In proceedings for SIGMETRICS , 2005.
- [129]. G. Di Crescenzo, R. Graveman, R. Ge, and G. R. Arce, "Approximation Message Authentication and Biometric Entity Authentication," Conference on Financial Cryptography and Data Security, 2005, LNCS vol. 3570, pp. 240-254.
- [130]. R. Ge, G. Di Crescenzo, M. Fecko, S. Samtani and G. R. Arce, "Efficient and Secure Indirect-Address Service Discovery in MANET," In proceedings for MILCOM, Oct. 2005.

- [131]. G. Di Crescenzo, R. Ge, and G. R. Arce, "Improved topology assumptions for threshold cryptography in mobile ad hoc networks," In proceedings for Workshop on Security of ad hoc and Sensor Networks, pp. 53-62, (SASN), Alexandria, VA, Nov. 2005.
- [132]. R. Nunez and G. R. Arce, "Diffusion Marking Mechanism for Active Queue Management," Proceedings of the International Communications Conference, Seoul, Korea, June 2005.
- [133]. Yinbo Li and G. R. Arce, "A Multichannel Weighted Median Filter for Complex Array Signal Processing," 2005 IEEE - EURASIP International Workshop on Nonlinear Signal and Image Processing (NSIP 2005), Sapporo, Japan, May 18-20, 2005
- [134]. Y. Li, J. Bacca and G. R. Arce, "Weighted Median Filters for Multichannel Signals," 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2005), Philadelphia, PA USA, March 18-23, 2005
- [135]. G. R. Arce and R. C. Nunez, "Diffusion Marking Mechanisms for Active Queue Management," Proceedings of the IEEE ICC 2005, Seoul, Korea, May 2005.
- [136]. Z. Zhou, Yeong Taeg Kim and G. D. Crescenzo, and G. R. Arce, "Frame Rate Conversion of Interlaced Video," Proceedings of 1st International Workshop on Video Processing and Quality Metrics for Consumer Electronics, Scottsdale, AZ, Jan. 2005.
- [137]. S. Hoyos, B. M. Sadler, and G. R. Arce, "Intentional jamming suppression in a frequency-domain ultra-wideband multicarrier communication receiver," Proceedings for the 24th Army Science Conference, November 29, Orlando, FL, 2004.
- [138]. L. Ma, K. E. Barner and G. R. Arce, "Statistical Analysis of TCP's Retransmission Timeout Algorithm", the 38th Annual Conference of Information Sciences and Systems (CISS), Princeton, NJ, March 17-19, 2004.
- [139]. Z. Zhou and G. R. Arce, "Optimized Halftoned Visual Cryptography," Proceeding of the 2004 SPIE Electronic Imaging Congerence, San Jose, CA, Jan. 2004.
- [140]. Y. Li, G. R. Arce and J. Bacca, "Generalized Cector Medians for Correlated Channels," 12th European Signal Processing Conference (EUSIPCO 2004), Vienna, Austria, September 6-10, 2004.
- [141]. L. Ma, K. Barner, G .R. Arce, "Median RED for Congestion Control," in Proceedings of International Conference on Acoustics, Speech, and Signal Processing, Montreal, Canada, May, 2004.
- [142]. G. Di Crescenzo, G. R. Arce and R. Ge, "Threshold Cryptography in Mobile Ad Hoc Networks," Lecture Notes in Computer Science, 3352, pp.91-104, 2005, 4th International Conference, SCN 2004, Amalfi, Italy, Sep., 2004.
- [143]. G. Di Crescenzo, R. Ge, G. R. Arce, "Design and Analysis of DBMAC: An Error Localizing Message Authentication Code," in Proc. of Globecom 2004, Dallas, TX, Nov., 2004
- [144]. G. Di Crescenzo, R. Ge and G. R. Arce, "Secure Service Provision for Reliable Server Pooling in MANET," in Proc. of 24th Army Science Conference 2004, Orlando, FL, Nov., 2004
- [145]. Y. Li, G. R. Arce and J. Bacca, "Generalized Vector Medians for Correlated Channels," 12th European Signal Processing Conference (EUSIPCO 2004), Vienna, Austria, September 6-10, 2004
- [146]. Y. Li and G. R. Arce, "A Fast Maximum Likelihood Estimation Approach to LAD Regression," 2004 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2004), Montreal, Canada, May 17-21, 2004
- [147]. S. Hoyos, B. M. Sadler, and G. R. Arce, "High-Speed A/D Conversion for Ultra-Wideband Signals Based on Signal Projection over Basis Functions," to appear in Proceedings of ICASSP 2004, International Conference on Acoustics, Speech and Signal Processing, Montreal, Quebec, Canada, 2004.
- [148]. J. Bacca, S. Hoyos, Y. Li, and G. R. Arce, "Weighted Median Based Filters for the Complex Domain," to appear in Proceedings of ICASSP 2004, International Conference on Acoustics, Speech and Signal Processing, Montreal, Quebec, Canada, 2004.



- [149]. R. Ge, G. R. Arce, R. Graveman and G. D. Cescenzo, "Probabilistic Properties of N-ary Approximate Message Authentication Codes," Proceedings of the of 2003 Annual Symposium on Collaborative Technology Alliances
- [150]. S. Hoyos, B. M. Sadler, and G. R. Arce, "Analog to Digital Conversion of Ultra-Wideband Signals in Orthogonal Spaces," Proceedings of UWBST 2003, IEEE Conference on Ultra Wideband Systems and Technologies, Reston, VA, 2003.
- [151]. S. Hoyos, B. M. Sadler, and G. R. Arce, "Dithering and Sigma-Delta Modulation in Mono-bit Digital Receivers for Ultra-Wideband Communications," Proc. of UWBST 2003, IEEE Conference on Ultra Wideband Systems and Technologies, Reston, VA, 2003.
- [152]. S. Hoyos, Y. Li, J. Bacca, and G. R. Arce, "Weighted Median Filters Admitting Complex-valued Weights and their Optimization," Proceedings of NSIP 2003, IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing NSIP, Grado-Trieste, Italy, 2003.
- [153]. S. Hoyos, J. Bacca, and G. R. Arce, "Fast Spectral Design of Weighted Median Filters Admitting Complex Value Weights," Proceedings of NSIP 2003, IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing NSIP, Grado-Trieste, Italy, 2003.
- [154]. S. Hoyos, B. M. Sadler, and G. R. Arce, "On the Performance of Low Complexity Digital Receivers for Ultra-Wideband Communication Systems," Proceedings of CTA 2003, Collaborative Technology Alliances Annual Symposium, College Park, MD, 2003.
- [155]. G. D. Crescenzo, R. Graveman, G. R. Arce, R. Ge, "A Formal Security Analysis of Approximate Message Authentication Codes," Proceedings of the 2003 Annual Symposium on Collaborative Technology Alliances Communications Networks Alliance, College Park, MD, April 2003.
- [156]. M. J. Wilson and G. R. Arce, "Diffusion Early Marking (DEM): Active Queue Management for Today's Internet," In proceedings for ACM SIGCOMM 2003.
- [157]. M. J. Wilson and G. R. Arce, "DEM: A New Active Queue Management System," Globecom 2003.
- [158]. Z. Zhou, G. R. Arce and G. D. Crescenzo, "Halftone Visual Cryptography," Proceedings of the 2003 International Conference on Image Processing (ICIP), Barcelona, Sep. 2003.
- [159]. X. Wang, Y. Li, F. Kiamilev, J. Ekman, G. R. Arce, "Power Efficient Parallel Optical Communication Links," Optics in Computing 2003 (OC 2003), Washington DC, June 18-20, 2003
- [160]. S. Hoyos, J. Garcia, and G. R. Arce, "Mixed-Signal Equalization Architectures for Printed Circuit Boards," Proceedings of ICASSP 2002, International Conference on Acoustics, Speech and Signal Processing, Orlando, FL, 2002.
- [161]. R. Ge and G. R. Arce and R. Graveman, "The N-ary Approximate message Authentication Codes," Presented at the 36th Asilomar Conference on Signals, Systems and Computers, Monterey, Cam Nov. 2002.
- [162]. Karen M. Bloch and Gonzalo R. Arce, "Nonlinear Correlation for the Analysis of Gene Expression Data", Proceedings of the 2002 Workshop on Genomic Signal Processing and Statistics, Raleigh, North Carolina, October 11-13, 2002.
- [163]. Bloch, K.M. and G. R. Arce, "Signal Analysis of Gene Expression Data," In proceedings for the Workshop on Genomic Signal Processing and Statistics (GENSIPS), Raleigh, NC, Oct. 2002.
- [164]. Bloch, K.M. and G. R. Arce, "Nonlinear Correlation Measures for Gene Expression Data", In proceedings for ISBM02 (Intelligent Systems for Molecular Biology), Edmundton, Aug. 2002.
- [165]. L. Xie, M. Wilson, R. Graveman, G. R. Arce, "Fast Image Search with Approximate Image Authentication Codes, ITCOM Conference, Aug. 2002.
- [166]. M. J. Wilson, L. Xie, and G. R. Arce, "Content-based Searching of Multimedia Databases Using Approximate Digital Signatures," Proceedings of SPIE ITCOM Conference, Internet multimedia Management Systems III, vol. 4862, Boston, MA, July 2002.

- [167]. S. Hoyos, J. Garcia, and G. R. Arce, "Mixed-Signal Equalization Architecture for Printed Circuit Board Channels," in Proceedings of the 2002 International Conference on Acoustics, Speech, and Signal Processing, ICASSP '02, Orlando FL, May 13-17, 2002.
- [168]. C. Nino and G. R. Arce, "Stochastic Dithering and Watermarking (Invited Paper), Proceedings of the SPIE Electronic Imaging Conference, Photonic West, Vol. 4663, pp. 229-241, San Jose, CA, Jan. 2002.
- [169]. C. Nino, D. Lau, and G. R. Arce, "Green Noise Digital Halftoning for High-Resolution Printers (Invited Paper), Proceedings of the Electronic Imaging Conference, Photonics West, San Jose, CA, Jan. 2002.
- [170]. Y. Li and G. R. Arce, "Median Correlation Theory," 2001 IEEE - EURASIP International Workshop on Nonlinear Signal and Image Processing (NSIP 2001), Baltimore, MD USA, June 3-6, 2001
- [171]. Bloch, K.M. and G. R. Arce, "Time-Frequency Analysis of Protein Sequence Data." 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing. Baltimore, Maryland, June 2001.
- [172]. Y. Li and G. R. Arce, "Robust and Tunable Correlation Estimates Using Weighted Myriads," 2001 IEEE - EURASIP International Workshop on Nonlinear Signal and Image Processing (NSIP 2001), Baltimore, MD USA, June 3-6, 2001.
- [173]. H. Tayong, A. Beasley, A. Cole-Rhodes, A. B. Cooper, and G. R. Arce, "Parametric Diversity Combining in Fast Frequency Hoping." ARL Federated Laboratory Capstone Symposium, College Park, MD, 2001.
- [174]. L. Russo, J. Paredes, and G. R. Arce, "Polarimetric SAR Denoising Using Bijection Mappings," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.
- [175]. C. Nino and G. R. Arce, "Watermarking of Digital Halftones with Screen Codes," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.
- [176]. I. Shmulevich and G. R. Arce, "Generalized Mallows' Optimization for Weighted Median Filters Admitting Negative Weights", Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.
- [177]. F. Faheem, D. Lau, and G. R. Arce, "Reducing Texture in Multitones Using Gray Level Separation," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.
- [178]. F. Faheem, D. Lau, G. R. Arce, "Multilevel Halftoning Using Binary Quantization," 2001 Image Processing, Image Quality, Image Capture Systems Conference, Montreal, Canada, April 22-25, 2001.
- [179]. G. R. Arce, F. Ahnert, and R. Graveman, "Image Retrieval and Multi-Dimensional Searching" ARL Federated Laboratory Capstone Symposium, College Park, MD, 2001.
- [180]. L. Xie, G. R. Arce, and R. Graveman, "Image Retrieval Using Color AMAC Signatures," ARL Federated Laboratory Capstone Symposium, College Park, MD, 2001.
- [181]. J. Paredes and G. R. Arce, "Stack Filters Based on Mirrored Threshold Decomposition," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.
- [182]. K. M. Bloch, G. R. Arce, "Time-Frequency Analysis of Protein Sequence Data," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, Baltimore, Maryland, June 2001
- [183]. J. Paredes and G. R. Arce, "Optimization of Stack Filters Based on Mirrored Threshold Decomposition," Proceedings of the 2001 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing, (Baltimore, MD), June 2001.

- [184]. D. Lau, A. Khan, and G. R. Arce, "Stochastic Moire in Halftoning," IS&T's Image Processing Image Quality Image Capture Systems Conference (PICS'01), Montreal, Quebec, Canada, April 2001.
- [185]. D. Lau, A. Khan, G. R. Arce, "Stochastic Moire," 2001 Image Processing, Image Quality, Image Capture Systems Conference, Montreal, Canada, April 22-25, 2001.
- [186]. F. Faheem, D. Lau, and G. R. Arce, "Multilevel Halftoning using Bilevel Quantizers," IS&T's Image Processing Image Quality Image Capture Systems Conference (PICS'01), Montreal, Quebec, Canada, April 2001.
- [187]. M. Fisher, J. Paredes, and G. R. Arce, "Weighted Median Sharpeners for the World Wide Web," Proceeding of the 2000 European Signal Processing Conference (EUSIPCO 2000), Tampere, Finland, Aug. 2000.
- [188]. L. Xie, G. R. Arce, and R. Graveman, "Approximate Message Authentication Codes (AMACS)," IEEE International Conference on Multimedia and Expo (ICME2000), New York, NY, August 2000.
- [189]. L. Xie, G. R. Arce, and R. Graveman, "Image Authentication Codes through Histograms," IEEE International Conference on Multimedia and Expo (ICME2000), New York, NY, August 2000.
- [190]. A. Flaig and G. R. Arce, "Near-field Spot Beamforming with Distributed Antennas," 4th Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [191]. J. Paredes, G. R. Arce, "Optimization of Stack Filters Based on Mirrored Threshold Decomposition," NSIP, Baltimore, MD, June 2001
- [192]. J. Paredes, G. R. Arce, "Stack Filters Based on Mirrored Threshold Decomposition," NSIP, Baltimore, MD, June 2001.
- [193]. F. Faraz, D. Lau, G. R. Arce, "Reducing Texture in Multitones Using Gray Level Separation," NSIP, Baltimore, MD, June 2001.
- [194]. Y. Li, G. R. Arce, "Robust and Tunable Correlation Estimates Using Weighted Myriads," NSIP, Baltimore, MD, June 2001.
- [195]. Y. Li, G. R. Arce, "Median Correlation Theory," NSIP, Baltimore, MD, June 2001.
- [196]. I. Shumulevich, G. R. Arce, "Generalized Mallows' Optimization for Weighted Median Filters Admitting Negative Weights," NSIP, Baltimore, MD, June 2001.
- [197]. K. Bloch, G. R. Arce, "Time-Frequency Analysis of Protein Sequence Data," NSIP, Baltimore, MD, June 2001.
- [198]. C. Nino, G. R. Arce, "Watermarking of Digital Halftones with Screen Codes," NSIP, Baltimore, MD, June 2001.
- [199]. L. Xie, G. R. Arce, R. Graveman, "Fast Image Querying Using Color Similarity Signatures," Proc. U.S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, February 2001.
- [200]. L.E. Russo, J. Paredes, G. R. Arce, "Polymetric SAR Denoising Using Bijection Mapping," Proc. U.S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, February 2001.
- [201]. G. R. Arce, F. Ahnert, R.F. Graveman, "Image Retrieval and Multi-Dimensional Searching," Proc. U.S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, February 2001.
- [202]. G. R. Arce and R. Hasan, "Elimination of Interference Terms in the Wigner Ville Distribution Using Nonlinear filtering." Proceedings of the 2000 European Signal Processing Conference (EUSIPCO'2000), Tampere, Finland.
- [203]. J. Paredes, G. R. Arce, and L. Russo, "Multispectral Image Compression by Bijection Mappings onto Zero-Trees," IEEE International Conference on Image Processing (ICIP'2000), Vancouver, CA, September 2000.
- [204]. M. Fisher, J. Paredes, and G. R. Arce, "Stack Filters and Mirrored Threshold Decomposition," IEEE International Conference on Image Processing (ICIP'2000), Vancouver, CA, September 2000.

- [205]. J. Paredes, and G. R. Arce, "Recursive WM Filters for Image Denoising," IEEE International Conference on Image Processing (ICIP'2000), Vancouver, CA, September 2000.
- [206]. J. Paredes, M. Fisher, and G. R. Arce, "Weighted Median Image Sharpeners for the World Wide Web," IEEE International Conference on Image Processing (ICIP'2000), Vancouver, CA, September 2000.
- [207]. Flaig and G. R. Arce, "Near-Field Spot Beamforming with Distributed Antennas." In proceedings for the 4rd Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [208]. H. Tayong, A. Cole-Rhodes, A. B. Cooper, A. Flaig and G. R. Arce, "A Reduced Complexity Detector for Fast Frequency Hopping." In proceedings for the 4th Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [209]. L. Xie, G. R. Arce, A. Lewis, and E. B. Basch "Image Authentication Watermarking," In proceedings for the 4rd Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [210]. I. Shmulevich, J. Paredes, and G. R. Arce, "Output Distributions of Stack Filters Based on Mirrored Threshold Decomposition," Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'2000), Istanbul, Turkey, September 2000.
- [211]. J. Paredes, G. R. Arce, and L. Russo, "Multispectral Image Compression by Bijection Mappings onto Zero-Trees," In proceedings for the 4rd Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [212]. R. Graveman, L. Xie, and G. R. Arce, "Approximate image authentication codes," In proceeds for the 4th Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, March 2000.
- [213]. J. Paredes, M. Fisher, and G. R. Arce, "Image Sharpening Using Permutation Weighted Median Filters," Proceedings of the 2000 European Signal Processing Conference (EU-SIPCO'2000), Tampere, Finland.
- [214]. A. Flaig and G. R. Arce, "Near-field Spot-Beamforming with Distributed Antennas," Proceedings of the First IEEE Sensor Array and Multichannel (SAM) Signal Processing Workshop, Cambridge, MA, March 2000.
- [215]. D. L. Lau, G. R. Arce, and N. C. Gallagher, "Robust Halftoning with Green-Noise," IS&T's Image Processing Image Quality Image Capture Systems Conference (PICS'99), Savannah, GA. USA, April 26-28, 1999.
- [216]. J. L. Paredes, G. R. Arce, and X. Xia, "Multicomponent Image Compression using Vector Wavelets," Proceedings of the U. S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, Feb. 1999.
- [217]. G. R. Arce, C. Boncelet, and R. Graveman, "Applications of Information Hiding," Proceedings of the U. S. Army ATIRP Federated Laboratory Ann. Telecomm. Conf., College Park, MD, Feb. 1999.
- [218]. A. Flaig, A. B. Cooper, G. R. Arce, H. Tayong, and A. Cole-Rhodes, "Fuzzy Rank-Order Detectors for Frequency Hopping Networks." Proceedings of the 3rd Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, Feb. 1999.
- [219]. L. Xie and G. R. Arce, "Capacity Issues in Watermarking," Proceedings of the U. S. Army ATIRP Federated Laboratory Ann. Telecomm. Conf., College Park, MD, Feb. 1999.
- [220]. Flaig, A. B. Cooper, and G. R. Arce, "Rank-Order Diversity Detectors for Wireless Communications in Hostile Environments." Proceedings of the 3rd Annual Symposium on Advanced Telecommunications/Information Distribution Research Program (ATIRP), College Park, MD, Feb. 1999.

- [221]. J. L. Paredes and G. R. Arce, and L. Russo, "A Novel Method for Hyperspectral Multi-spectral Image Compression." Proceedings of the Workshop on Hyperspectral Multispectral Sensor Measurements Modeling and Sims. Huntsville, Alabama, Sept. 99.
- [222]. Lihua Xie, G. R. Arce, A. Lewis, E. Bert Basch, "Secure MPEG2 Video Communication by Watermarking" Proceedings of the 3rd annual Conference of the ATIRP Federated Laboratory Ann. Telecomm. Conf., College Park, MD, Feb. 1999.
- [223]. S. Kalluri, G. R. Arce and A. B. Cooper III, "Optimum Sequence Estimation for Non-Gaussian Channels with Intersymbol Interference," Proceedings of the 1999 Conference on Information Sciences and Systems, Baltimore, MD, U.S.A., March 1999.
- [224]. G. R. Arce, S. Kalluri and A. B. Cooper III, "Maximum Likelihood Decoding of Convolutional Codes for Non-Gaussian Channels," Workshop on Applications of Heavy-Tailed Distributions in Economics, Engineering and Statistics, American University, Washington, D.C., June 1999.
- [225]. A. Flaig and G. R. Arce, "Rank-Order Diversity Detectors for Wireless Communications," Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'99), Phoenix, AZ, USA, March 1999.
- [226]. J. L. Paredes and G. R. Arce, "A General Recursive Weighted Median Filter Structure Admitting Real-Values Weights and their Optimization," Proceedings of the 1999 IEEE-EURASIP Workshop on Nonlinear Signal and Image Processing. Antalya Turkey, Jun. 1999.
- [227]. D. L. Lau and G. R. Arce, "Digital Halftoning with Green-Noise Masks," IS&T's International Conf. on Digital Printing Tech. (NIP 15), Orlando, FL. USA, Oct. 17-22, 1999.
- [228]. X. Xie and G. R. Arce, "Watermarking a Blind Authentication Digital Image Signature," Proc. U. S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, January 1998.
- [229]. G. R. Arce, C.G. Boncelet, X. Xia, "A Wavelet Watermark for Digital Images," Proc. U.S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, January 1998
- [230]. J. L. Paredes and G. R. Arce, "Denoising of Polarimetric SAR Images for Compression," Proc. U. S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, January 1998.
- [231]. G. R. Arce, "A Generalized Weighted Median Filter Admitting Real-Valued Filter Weights," Proceedings of the 1998 IEEE International Conference on Acoustics, Speech, and Signal Processing, Seattle, WA, May 1998.
- [232]. X. Xie and G. R. Arce, "A Wavelet Based Watermarking for Image Authentication," 1998 European Signal and Image Processing Conference (EUSIPCO'98), Rhodes, Greece, August 1998.
- [233]. D. L. Lau, G. R. Arce, and N. C. Gallagher, "Green-Noise Digital Halftoning," IEEE International Conference on Image Processing (ICIP'98), Chicago, IL. USA, Oct. 4-7, 1998.
- [234]. X. Xie and G. R. Arce, "Watermarking a Blind Authentication Digital Signature on Compressed Images," Proceedings of the IEEE International Conference on Image Processing (ICIP'98), Chicago, IL. USA, October 4-7, 1998.
- [235]. J. L. Paredes, G. R. Arce and X. Xia, "Multicomponent (Vector) Image Compression Using Vector Wavelets". Proceedings of the 1998 Workshop on Data Compression Processing Techniques for Missile Guidance Data Links. University of Alabama, Volume 1. Dec. 1998.
- [236]. S. Kalluri and G. R. Arce, "A General Class of Nonlinear Normalized LMS Type Adaptive Filtering Algorithms," Proceedings of the 1998 Conference on Information Sciences, Princeton NJ, 1998.
- [237]. X-G Xia, C. G. Boncelet, and G. R. Arce, "A Multiresolution Watermark for Digital Images," Proceedings of the 1997 IEEE International Conference in Image Processing, Santa Barbara, CA, 1997.
- [238]. J. Paredes, D. Lau, G. R. Arce, and N. C. Gallagher, "Zero-Tree Like Codec with Nonlinear Signal Decompositions," Proceedings of the 1997IEEE/EURASIP Workshop on Nonlinear Signal and Image Processing, Mackinaw Island, MI, September 1997.

- [239]. D. W. Griffith, J. G. Gonzalez, and G. R. Arce. "Robust Time Frequency Representations for Signals in Alpha Stable Noise Using Fractional Lower Order Statistics," Proceedings of the IEEE Signal Proc. Workshop on Higher Order Statistics, Banff Alberta, Canada, July 1997.
- [240]. J. G. Gonzalez, D. W. Griffith, and G. R. Arce, "Zero Order Statistics: A Signal Processing Framework for Very Impulsive Environments." Proceedings of the IEEE Signal Processing Workshop on Higher Order Statistics, Banff Alberta, Canada, July 1997.
- [241]. J. G. Gonzalez, D. W. Griffith, A. B. Cooper, and G. R. Arce. "Adaptive Reception in Impulsive Noise." Proceedings of the IEEE Int. Symposium on Information Theory, Ulm, Germany, June 1997.
- [242]. S. Kalluri and G. R. Arce, "Adaptive Algorithms for Weighted Myriad Filter Optimization," Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing (ICASSP97), Munich, Germany, April 1997.
- [243]. Flaig, G. R. Arce, and A. Flaig, "Affine Order Statistic Filters," Proc. IEEE Int. Conf. on Acoustics, Speech and Signal Processing, Munich, Germany, April 1997.
- [244]. D. W. Griffith, J. G. Gonzalez, and G. R. Arce, "Robust Time Frequency Representations for Signals in Alpha Stable Noise," (invited paper) Proc. 1997 Conf. on Information T. Rao and G. R. Arce, "Bivariate Distributions of Recursively Median Filtered Signals," Proc. of the 1987 Conf. on Info. Sci/ and Systems, Baltimore MD, Mar. 1997.
- [245]. J. G. Gonzalez, D. L. Lau and G. R. Arce, "Towards a General Theory in Non-Linear Filtering: Selection Filters," IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'97), Munich, Germany, March 1997.
- [246]. Sciences and Systems, Baltimore, MD, March 1997.
- [247]. J. G. Gonzalez, D. W. Griffith, A. B. Cooper, and G. R. Arce, "Robust Adaptive Receivers for Channels with Uncertain Impulsiveness," Proc. U. S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, January 1997.
- [248]. J. L. Paredes, G. R. Arce, and N. C. Gallagher, "Nonlinear Signal Decompositions for Zero-Tree Image Coding," Proc. U. S. Army ATIRP Ann. Telecomm. Conf., College Park, MD, January 1997.
- [249]. X. Xia, C. G. Boncelet Jr, and G. R. Arce, "A Multiresolution Watermark for Digital Images," Proceedings of the 1997 IEEE International Conference on Image Processing, Santa Barbara CA, 1997.
- [250]. G. R. Arce, J. Gonzalez, and P. Zurbach, "Weighted Myriad Filters in Imaging," Proc. Asilomar Conference on Signals, Systems, and Computers, Pacific Grove CA, November 1996.
- [251]. D. L. Lau, G. R. Arce, and N. C. Gallagher, "Robust Image Wavelet Shrinkage for Denoising," IEEE International Conference on Image Processing (ICIP'96), Lusanne, Switzerland, August 1996.
- [252]. E. Heredia and G. R. Arce, "Piecewise Polynomial Kernel Networks," Proceedings of the 1996 IEEE International Conference on Neural Networks, Washington, DC, May 1996.
- [253]. J. Gonzalez and G. R. Arce, "Weighted Myriad filters: A Robust Filtering Framework Derived from Alpha Stable Distributions," Proceedings of the 1996 International Conference on Acoustics, Speech, and Signal Processing, Atlanta GA, May 1996.
- [254]. E. Heredia and G. R. Arce, "Piecewise Volterra Filters Based on the Threshold Decomposition Operator," Proceedings of the 1996 International Conference on Acoustics, Speech, and Signal Processing (ICASSP'96), Atlanta GA, May 1996.
- [255]. 112.P. Zurbach, J. Gonzalez, and G. R. Arce, "Weighted Myriad Filters for Image Processing," Proceedings of the 1996 IEEE International Symposium on Circuits and Systems, Atlanta GA, May 1996.

- [256]. J. Gonzalez, D. Griffith, and G. Arce, "Matched Myriad Filtering for Robust Communications," Proceedings of the 1996 Conference on Information Sciences and Systems CISS'96, Princeton NJ, April 1996.
- [257]. H. Cui, G. Arce, and N. Gallagher, "Rank Entropy of Median Filters," Proceedings of the 1996 Conference on Information Sciences and Systems CISS'96, Princeton NJ, April 1996.
- [258]. S. Kalluri and G. R. Arce, "Adaptive Algorithms for Weighted Myriad Filter Optimization," Proceedings of the 1996 Conference on Information Sciences and Systems CISS'96, Princeton NJ, April 1996.
- [259]. E. Heredia and G. R. Arce, "On Channel Equalization Using Piecewise Polynomial Kernels," Proceedings of the 1996 Conference on Information Sciences and Systems (CISS'96), Princeton NJ, April 1996.
- [260]. G. R. Arce and S. Basu, "Nonlinear Signal and Image Processing Using Order Statistics," Proceedings of the IS&T's 48th Annual Conference, Washington D.C., November 1995.
- [261]. J. G. Gonzalez, E. A. Heredia, T. Rahman, K. E. Barner, and G. R. Arce, "Filtering Involuntary Motion of People with Tremor Disability Using Optimal Equalization (invited paper), Proceedings of the 1995 IEEE International Conference on Systems, Man and Cybernetics. Vancouver, BC, Canada, October 1995.
- [262]. J. G. Gonzalez, E. A. Heredia, T. Rahman, K. Barner, and G. R. Arce, "A Customized Optimal Filter for Eliminating Operator's Tremor," Proceedings of Telem manipulator and Telepresence Technologies SPIE's Int. Symp. Intel. Sys. and Adv. Manuf., Philadelphia PA, October 1995.
- [263]. J. G. Gonzalez, E. A. Heredia, T. Rahman, K. E. Barner, S. K. Basu, and G. R. Arce, "A New Approach to Suppressing Abnormal Tremor Through Signal Equalization," Proceedings of the 18th RESNA International Conference, Vancouver, BC, Canada, June 1995.
- [264]. G. R. Arce, N. Grabowski, and N. C. Gallagher, "Weighted Median Filters with Sigma Delta Modulation Encoding," (invited paper) Proceedings of the 1995 IEEE Workshop on Nonlinear Digital Signal Processing, Halkidiki, Greece, June 1995.
- [265]. S. Basu and G. R. Arce, "Multichannel Permutation Filters," (invited paper). Proceedings of the 1995 IEEE Workshop on Nonlinear Digital Signal Processing, Halkidiki, Greece, June 1995.
- [266]. S. Basu and G. R. Arce, "Multichannel Permutation Order Statistic Filters," Proceedings of the 1995 IEEE International Conference on Image Processing, Washington D.C., May 1995.
- [267]. D. Griffith and G. R. Arce, "Order Statistic QMF Filter Banks," Proceedings of the 1995 Conference on Information Sciences, Baltimore, MD, March 1995.
- [268]. E. Heredia and G. R. Arce, "Approximation Networks Based on Shape Adaptive Kernels Using Localized Threshold Decomposition," Proceedings of the 1995 Conference on Information Sciences, Baltimore, MD, March 1995.
- [269]. M. Mueller and G. R. Arce, "A Universal Fan Beam Reconstruction Algorithm," Proceeding of the 1994 ECAPT Conference, Oporto, Portugal, March 1994.
- [270]. E. Heredia and G. R. Arce, "Nonlinear Modeling Using Threshold Decomposition Filters," Proceedings of the 1994 Conference on Information Sciences and Systems, Princeton NJ, March 1994.
- [271]. E. Heredia and G. R. Arce, "Piecewise Linear Autoregression Through Threshold Decomposition," Proceedings of the 1993 International Conference on Acoustics, Speech, and Signal Processing (ICASSP'93), Minneapolis MN, May 1993.
- [272]. Y.T. Kim and G. R. Arce, "Permutation Filter Lattices: A General Order Statistic Filtering Framework," Proceedings of the 1993 International Conference on Acoustics, Speech, and Signal Processing Minneapolis MN, May 1993.

- [273]. T. Hall, G. R. Arce, and K. E. Barner, "Permutation Weighted Order-Statistic Filters," Proceeding of the 1993 Conference on Info. Sci. and Systems, Baltimore MD, March 1993.
- [274]. M. Mueller and G. R. Arce, "Three Dimensional Synthetic Tomographic Arrays," Proceeding of the 1993 ECAPT Conference, Karlsruhe, Germany, March 1993.
- [275]. G. R. Arce and M. Tian, "Q L Coordinate Transformations for Order Statistic Filtering (invited paper), Proceedings of the 1992 IEEE International Conference on Systems Engineering, Kobe, Japan, September 1992.
- [276]. S. Chen and G. R. Arce, "Micro Statistic LMS Filtering," (invited paper), Proceedings of the 1992 IEEE International Symposium on Circuits and Systems, San Diego CA, May 1992.
- [277]. K. E. Barner and G. R. Arce, "Permutation Filters: A Group Theoretic Class of Filters," Proceedings of the 1992 Information Conference on Information Sciences and Systems, Princeton NJ, March 1992.
- [278]. R. Hardie, C. Boncelet, and G. R. Arce, "LUM Filters for Smoothing and Sharpening," Proceedings of the SPIE Conference on Non Linear Image Processing, San Jose CA, March 1991.
- [279]. R. Hardie and G. R. Arce, "Ranking in  $R_p$  and its Use in Multivariate Image Estimation," Proceedings of the SPIE/SPSE Symposium on Electronic Imaging, Santa Clara CA, February 1990.
- [280]. K. E. Barner, G. R. Arce, and J. Lin, "On the Performance of Stack Filters and Vector Detection in Image Restoration," Proceedings of the SPIE/SPSE Symposium on Electronic Imaging, Santa Clara CA, February 1990.
- [281]. K. E. Barner and G. R. Arce, "Distributed Detection Algorithms for Image Restoration in Signal Dependent Noise," 1989 SPIE Conference on Visual Communications and Image Processing,, Philadelphia PA, Nov.1989.
- [282]. D. Brown, G. R. Arce, and C. Ih, "Autonomous Robotic Navigation Using Holographic Laser Projected Light," Proceedings of the SPIE Conference on Intelligent Robots and Computer Vision, Philadelphia PA, Nov. 1989.
- [283]. K. E. Barner and G. R. Arce, "Detection Approaches to the Restoration of Images in Signal Dependent Noise (Invited paper)," Proceedings of the 32nd Midwest Symposium on Circuits and Systems, Urbana IL, August 1989.
- [284]. G. R. Arce, "Motion Preserving Ranked Order Filters for Image Sequence Processing," (invited paper), Proceedings of the 1989 International Symposium on Circuits and Systems, Portland OR, June 1989.
- [285]. T. Rao, G. R. Arce, and J. P. Allebach, "Ordered Dithering with Arbitrary Sampling Lattices and Screen Periodicities," (invited paper) Proceedings of the 42nd Annual SPSE Conference, Boston MA, May 1989.
- [286]. R. Feehs and G. R. Arce, "Optimal Detection Approaches to Image Restoration," Proceedings of the 1989 Conference on Information Sciences and Systems, Baltimore MD, March 1989.
- [287]. D. Brown, G. R. Arce, and C. Ih, "Scanned Structured Light Processing for Autonomous Robotic Navigation," Technical Digest of the Optical Society of America, October 1988.
- [288]. G. R. Arce, R. Foster, and P. Warter, "Multistage Median Filters and their VLSI Implementation," (invited paper) Proceedings of the 1988 International Symposium on Circuits and Systems, Espoo, Finland, June 1988.
- [289]. D. Brown, G. R. Arce, and C. Ih, "Morphological 3Dimensional Scene Segmentation Using Laser Scanned Structured Light," Proceedings of the 1988 International Symposium on Circuits and Systems, Espoo, Finland, June 1988.
- [290]. G. R. Arce and R. Foster, "Multilevel Median Filters: Properties and Efficacy," Proceedings of the 1988 International Conference on Acoustics, Speech, and Signal Processing, New York, NY, March 1988.



- [291]. T. S. Rao, G. R. Arce, "Halftone Patterns for Arbitrary Screen Periodicities," Proceedings of the 1988 International Conference on Acoustics, Speech, and Signal Processing (ICASSP88), New York, NY, March 1988.
- [292]. G. R. Arce, R. Foster, and P. Warter, "Recursive Multistage Median Filters," Proceedings of the 1988 Conference on Information Sciences and Systems, Princeton NJ, March 1988.
- [293]. R. Feehs and G. R. Arce, "Multidimensional Morphological Edge Detection," Proceedings of the SPIE Conference on Visual Communications and Image Processing, Cambridge, MA, Oct. 1987.
- [294]. W. Wonchoba and G. R. Arce, "Estimating the 3Dimensional Motion of a Rigid Plane in the Hough Parameter Space," Proceedings of the SPIE Conference on Intelligent Robots and Computer Vision, Cambridge MA, Oct. 1987.
- [295]. D. Brown, G. R. Arce, and C. Ih, "Scene Segmentation for Autonomous Robotic Navigation Using Sequential Laser Projected Light," Proceedings of the SPIE Conference on Intelligent Robots and Computer Vision, Cambridge, MA, Oct. 1987.
- [296]. G. R. Arce, "Multilevel Median Filters," Proceedings of the 1987 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1987.
- [297]. T. Rao and G. R. Arce, "Vector Dithering with Unconventional Plane Tessellations", Proceedings of the 1987 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1987.
- [298]. G. R. Arce and R. L. Stevenson, "Synthesis of Median Filter Systems," Proceedings of the 18th Annual Conference on Information Sciences and Systems, Princeton NJ, March 1986.
- [299]. T. Gardos, G. R. Arce, and J. Allebach, "Optimal Image Binarization in Hexagonal Lattices," Proceedings of the 18th Annual Conference on Information Sciences and Systems, Princeton NJ, March 1986.
- [300]. R. L. Stevenson and G. R. Arce, "Morphological Filters," (Invited Paper) Proceedings of the 1986 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1986.
- [301]. G. R. Arce and S. Fontana, "The Midrange Estimator," Technical Digest of the 1985 Annual Meeting of the Optical Society of America, Washington D.C., Oct. 1985.
- [302]. G. R. Arce, "Statistical Threshold Decomposition for Median Filters," Abstracts of the 1986 International Symposium on Information Theory, Ann Arbor, Michigan, Oct. 1985.
- [303]. M. Mc Loughlin and G. R. Arce, "Theoretical Analysis of the Max/Median Filter," Proceedings of the 1985 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1985.
- [304]. P. J. Warter and G. R. Arce, "A Median Filter Architecture Suitable for VLSI Implementation," Proceedings of the 1985 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1985.
- [305]. G. R. Arce, "Multidimensional Ranked Filtering," (invited paper) Proceedings of the 4th ASSP Workshop in Multidimensional Signal Processing, Leesburg VA, Aug. 1985.
- [306]. M. McLoughlin and G. R. Arce, "Root Properties and Convergence for Recursive Separable Median Filters," Proceedings of the 1985 Conference on Information Sciences and Systems, Baltimore MD, March 1985.
- [307]. R. Crinon and G. R. Arce, "Median Filters: Analysis for Signals with Additive Impulsive Noise" Proceedings of the 1984 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1984.
- [308]. R. Pearson and G. R. Arce, "Median Filters as Spectral Windows", Proceedings of the 7th Annual IEEE Micro Delcon Conference, Newark DE, March 1984.
- [309]. R. Crinon and G. R. Arce, "Median Filters: Analysis for 2Dimensional Recursively Filtered Signals," Proceedings of the 1984 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP'84), San Diego CA, March 1984.

- [310]. G. R. Arce, E. Malaret, and D. Landgrebe, "Multispectral Classification Using Median Filters," Proceedings of the 6th Annual IEEE Micro Delcon Conference, Newark DE, March 1983.
- [311]. G. R. Arce, B. Hoerl, and J. P. Allebach, "Spectral Range Estimation Using Jittered Sampling," Proceedings of the 1983 Conference on Information Science and Systems, Baltimore MD, March 1983.
- [312]. B. Hoerl and J. P. Allebach, and G. R. Arce, "Aliasing Reduction on Nonlinear Systems Response Using Jittered Sampling," Proceedings of the 1983 Conference on Information Science and Systems, Baltimore MD, March 1983.
- [313]. J. Dalton, G. R. Arce, and J. P. Allebach, "Error Diffusion Using Random Field Models," Proceedings of the SPIE's 27th Annual International Symposium, San Diego, Aug. 1983.
- [314]. G. R. Arce and N. C. Gallagher, "Stochastic Analysis for Multilevel Root Signals of Median Filters," Proceedings of the 16th Annual Conference on
- [315]. G. R. Arce and N. C. Gallagher, "BTC Image Source Coding," Proceedings of the 1981 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1981.
- [316]. G. R. Arce and N. C. Gallagher, "Root Signal Analysis for Median Filters," Proceedings of the 1980 Annual Allerton Conference on Communications, Control, and Computing, Urbana IL, October 1980.