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# ALEKSANDAR DOGANDZIC

## Research interests

Statistical signal processing, sensor array and multichannel signal processing

## Education

|      |  |
|------|--|
| 2001 | Ph.D., Electrical Engineering and Computer Science (EECS), University of Illinois at Chicago (UIC) |
| 1997 | M.S., EECS, UIC  |
| 1995 | Dipl. Ing., Electrical Engineering, University of Belgrade, Yugoslavia                             |

## Appointments held

|                 |  |
|-----------------|--|
| 2007-present    | Associate Professor, Electrical and Computer Engineering (ECpE), Iowa State University (ISU), Ames |
| 2001-2007       | Assistant Professor, ECpE, ISU, Ames   |
| 2001            | Lecturer, EECS, UIC  |
| 1996, 1998-2000 | Research Assistant, EECS, UIC  |
| 1995-1996       | Teaching Assistant, EECS, UIC  |

## Honors & awards

|           |  |
|-----------|--|
| 2006-2012 | CAREER Award from the US National Science Foundation (NSF)   |
| 2006-2007 | Litton Assistant Professor in Electrical and Computer Engineering, ISU, Ames   |
| 2006      | IEEE Senior Member   |
| 2004      | IEEE Signal Processing Magazine Best Paper Award   |
| 2003      | IEEE Signal Processing Society Young Author Best Paper Award   |
| 2001      | Outstanding Thesis in the Division of Engineering, Mathematics, and Physical Sciences, University of Illinois at Chicago |
| 1996      | Distinguished Electrical Engineering M.S. Student Award by the Chicago Chapter of the IEEE Communications Society        |
| 1995      | <i>Summa cum laude</i> , School of Electrical Engineering, University of Belgrade, Yugoslavia                            |

## Publications

### Journal articles

[27] R. Gu and A. Dogandžić, “Projected Nesterov’s proximal-gradient algorithm for sparse signal recovery,” *IEEE Trans. Signal Process.*, vol. 65, no. 13, pp. 3510–3525, 2017.

- [26] R. Gu and A. Dogandžić, “Blind X-ray CT image reconstruction from polychromatic Poisson measurements,” *IEEE Trans. Comput. Imag.*, vol. 2, no. 2, pp. 150–165, 2016.
- [25] Z. Song and A. Dogandžić, “A max-product EM algorithm for reconstructing Markov-tree sparse signals from compressive samples,” *IEEE Trans. Signal Process.*, vol. 61, no. 23, pp. 5917–5931, 2013.
- [24] K. Qiu and A. Dogandžić, “Sparse signal reconstruction from quantized noisy measurements via GEM hard thresholding,” *IEEE Trans. Signal Process.*, vol. 60, pp. 2628–2634, May 2012.
- [23] K. Qiu and A. Dogandžić, “Sparse signal reconstruction via ECME hard thresholding,” *IEEE Trans. Signal Process.*, vol. 60, pp. 4551–4569, Sep. 2012.
- [22] K. Qiu and A. Dogandžić, “Variance-component based sparse signal reconstruction and model selection,” *IEEE Trans. Signal Process.*, vol. 58, pp. 2935–2952, Jun. 2010.
- [21] A. Dogandžić and K. Qiu, “Decentralized random-field estimation for sensor networks using quantized spatially correlated data and fusion-center feedback,” *IEEE Trans. Signal Process.*, vol. 56, pp. 6069–6085, Dec. 2008.
- [20] E. Serpedin, H. Li, A. Dogandžić, H. Dai, and P. Cota, “Distributed signal processing techniques for wireless sensor networks,” *EURASIP J. Adv. Signal Process.*, 2008.
- [19] A. Dogandžić and B. Zhang, “Bayesian complex amplitude estimation and adaptive matched filter detection in low-rank interference,” *IEEE Trans. Signal Process.*, vol. 55, pp. 1176–1182, Mar. 2007.
- [18] A. Dogandžić and B. Zhang, “Bayesian NDE defect signal analysis,” *IEEE Trans. Signal Process.*, vol. 55, pp. 372–378, Jan. 2007.
- [17] W. Mo, Z. Wang, and A. Dogandžić, “EM-based iterative receiver for coded MIMO systems in unknown spatially correlated noise,” *Wirel. Commun. Mob. Comput.*, vol. 7, pp. 81–89, Jan. 2007.
- [16] A. Dogandžić and B. Zhang, “Distributed estimation and detection for sensor networks using hidden Markov random field models,” *IEEE Trans. Signal Process.*, vol. 54, pp. 3200–3215, Aug. 2006.
- [15] D. Gutiérrez, A. Nehorai, and A. Dogandžić, “Performance analysis of reduced-rank beamformers for estimating dipole source signals using EEG/MEG,” *IEEE Trans. Biomed. Eng.*, vol. 53, pp. 840–844, May 2006.
- [14] J. Wang, A. Dogandžić, and A. Nehorai, “Maximum likelihood estimation of compound-Gaussian clutter and target parameters,” *IEEE Trans. Signal Process.*, vol. 54, pp. 3884–3898, Oct. 2006.
- [13] A. Dogandžić, J. Riba, G. Seco, and A. Swindlehurst, “Positioning and navigation with applications to communications,” *IEEE Signal Process. Mag.*, vol. 22, no. 4, pp. 10–11, Jul. 2005.
- [12] A. Dogandžić and J. Jin, “Estimating statistical properties of MIMO fading channels,” *IEEE Trans. Signal Process.*, vol. 53, no. 8, pp. 3065–3080, Aug. 2005.

- [11] A. Dogandžić and P. Xiang, “Estimating statistical properties of eddy-current signals from steam generator tubes,” *IEEE Trans. Signal Process.*, vol. 53, pp. 3342–3348, Aug. 2005.
- [10] A. Dogandžić and B. Zhang, “Dynamic shadow-power estimation for wireless communications,” *IEEE Trans. Signal Process.*, vol. 53, pp. 2942–2948, Aug. 2005.
- [9] A. Dogandžić and B. Zhang, “Estimating Jakes’ Doppler power spectrum parameters using the whittle approximation,” *IEEE Trans. Signal Process.*, vol. 53, pp. 987–1005, Mar. 2005.
- [8] A. Dogandžić and J. Jin, “Maximum likelihood estimation of statistical properties of composite gamma-lognormal fading channels,” *IEEE Trans. Signal Process.*, vol. 52, pp. 2940–2945, Oct. 2004.
- [7] A. Dogandžić, W. Mo, and Z. Wang, “Semi-blind SIMO flat-fading channel estimation in unknown spatially correlated noise using the EM algorithm,” *IEEE Trans. Signal Process.*, vol. 52, pp. 1791–1797, Jun. 2004.
- [6] A. Dogandžić, “Chernoff bounds on pairwise error probabilities of space-time codes,” *IEEE Trans. Inf. Theory*, vol. 49, pp. 1327–1336, May 2003.
- [5] A. Dogandžić and A. Nehorai, “Generalized multivariate analysis of variance: A unified framework for signal processing in correlated noise,” *IEEE Signal Process. Mag.*, vol. 20, pp. 39–54, Sep. 2003.
- [4] A. Dogandžić and A. Nehorai, “Finite-length MIMO equalization using canonical correlation analysis,” *IEEE Trans. Signal Process.*, vol. 50, no. 4, pp. 984–989, 2002.
- [3] A. Dogandžić and A. Nehorai, “Space-time fading channel estimation and symbol detection in unknown spatially correlated noise,” *IEEE Trans. Signal Process.*, vol. 50, no. 3, pp. 457–474, 2002.
- [2] A. Dogandžić and A. Nehorai, “Cramér-Rao bounds for estimating range, velocity, and direction with an active array,” *IEEE Trans. Signal Process.*, vol. 49, no. 6, pp. 1122–1137, 2001.
- [1] A. Dogandžić and A. Nehorai, “Estimating evoked dipole responses in unknown spatially correlated noise with EEG/MEG arrays,” *IEEE Trans. Signal Process.*, vol. 48, no. 1, pp. 13–25, 2000.

### Electronic publications

- [1] R. Gu and A. Dogandžić. (Feb. 2017). Upper-bounding the regularization constant for convex sparse signal reconstruction. arXiv: 1702.07930 [stat.CO].

### Book chapter

- [1] A. Dogandžić and A. Nehorai, “EEG/MEG spatio-temporal dipole source estimation and sensor array design,” *High-Resolution and Robust Signal Processing*, Y. Hua, A. B. Gershman, and Q. Cheng, Eds., New York: Marcel Dekker, 2003, pp. 393–442.

## Conference papers

- [54] R. Gu and A. Dogandžić, “Blind beam-hardening correction from Poisson measurements,” *Rev. Prog. Quant. Nondestr. Eval.*, D. E. Chimenti and L. J. Bond, Eds., ser. AIP Conf. Proc. Vol. 35 1706, Melville, NY, 2016, 110010.
- [53] R. Gu and A. Dogandžić, “Blind polychromatic X-ray CT reconstruction from Poisson measurements,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Shanghai, China, Mar. 2016, pp. 898–902.
- [52] S. Song, Y. Li, and A. Dogandžić, “Atomic library optimization for sparse pulse ultrasonic signal decomposition and reconstruction,” *Rev. Prog. Quant. Nondestr. Eval.*, ser. AIP Conf. Proc. Vol. 35 1706, Melville, NY, 2016, 180008.
- [51] R. Gu and A. Dogandžić, “Polychromatic sparse image reconstruction and mass attenuation spectrum estimation via B-spline basis function expansion,” *Rev. Prog. Quant. Nondestr. Eval.*, D. E. Chimenti and L. J. Bond, Eds., ser. AIP Conf. Proc. Vol. 34 1650, Melville, NY, 2015, pp. 1707–1716.
- [50] R. Gu and A. Dogandžić, “Projected Nesterov’s proximal-gradient signal recovery from compressive Poisson measurements,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2015, pp. 1490–1495.
- [49] R. Gu and A. Dogandžić, “A fast proximal gradient algorithm for reconstructing non-negative signals with sparse transform coefficients,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2014, pp. 1662–1667.
- [48] R. Gu and A. Dogandžić, “Sparse signal reconstruction from polychromatic X-ray CT measurements via mass attenuation discretization,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson, D. E. Chimenti, and L. J. Bond, Eds., ser. AIP Conf. Proc. Vol. 33 1581, Melville, NY, 2014, pp. 1848–1855.
- [47] R. Gu and A. Dogandžić, “Beam hardening correction via mass attenuation discretization,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Vancouver, Canada, May 2013, pp. 1085–1089.
- [46] R. Gu and A. Dogandžić, “Sparse X-ray CT image reconstruction and blind beam hardening correction via mass attenuation discretization,” *Proc. IEEE Int. Workshop Comput. Advances Multi-Sensor Adaptive Process.*, Saint Martin, French West Indies, Dec. 2013, pp. 244–247.
- [45] A. Dogandžić, R. Gu, and K. Qiu, “Algorithms for sparse X-ray CT image reconstruction of objects with known contour,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 31, Melville, NY, 2012, 597–604.
- [44] Z. Song and A. Dogandžić, “A Bayesian max-product EM algorithm for reconstructing structured sparse signals,” *Proc. Conf. Inform. Sci. Syst.*, Princeton, NJ, Mar. 2012, pp. 1–6.
- [43] Z. Song and A. Dogandžić, “Image reconstruction from compressive samples via a max-product EM algorithm,” *Applications of Digital Image Processing XXXV*, A. G. Tescher, Ed., ser. Proc. SPIE Optics & Photonics, vol. 8499, San Diego, CA: SPIE, Aug. 2012, 849907.

- [42] A. Dogandžić, R. Gu, and K. Qiu, “Mask iterative hard thresholding algorithms for sparse image reconstruction of objects with known contour,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2011, pp. 2111–2116.
- [41] K. Qiu and A. Dogandžić, “A GEM hard thresholding method for reconstructing sparse signals from quantized noisy measurements,” *Proc. IEEE Int. Workshop Comput. Advances Multi-Sensor Adaptive Process.*, San Juan, PR, Dec. 2011, pp. 349–352.
- [40] K. Qiu and A. Dogandžić, “Nonnegative signal reconstruction from compressive samples via a difference map ECME algorithm,” *Proc. IEEE Workshop Stat. Signal Process.*, Nice, France, Jun. 2011, pp. 561–564.
- [39] K. Qiu and A. Dogandžić, “Sparse X-ray CT image reconstruction using ECME hard thresholding methods,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 30, Melville, NY, 2011, pp. 469–476.
- [38] A. Dogandžić and K. Qiu, “Automatic hard thresholding for sparse signal reconstruction from NDE measurements,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 29, Melville, NY, 2010, pp. 806–813.
- [37] K. Qiu and A. Dogandžić, “Double overrelaxation thresholding methods for sparse signal reconstruction,” *Proc. Conf. Inform. Sci. Syst.*, Princeton, NJ, Mar. 2010.
- [36] K. Qiu and A. Dogandžić, “ECME hard thresholding methods for image reconstruction from compressive samples,” *Applications of Digital Image Processing XXXIII*, A. G. Tescher, Ed., ser. Proc. SPIE Optics & Photonics, vol. 7798, San Diego, CA: SPIE, Aug. 2010, 779813.
- [35] A. Dogandžić and K. Qiu, “ExCoV: Expansion-compression variance-component based sparse-signal reconstruction from noisy measurements,” *Proc. Conf. Inform. Sci. Syst.*, Baltimore, MD, Mar. 2009, pp. 186–191.
- [34] A. Dogandžić and K. Qiu, “Estimating a random field in sensor networks using quantized spatially correlated data,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2008, pp. 1943–1947.
- [33] A. Dogandžić and B. Zhang, “Markov chain Monte Carlo defect identification in NDE images,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 26, Melville, NY, 2007, pp. 709–716.
- [32] A. Dogandžić and B. Zhang, “Nonparametric probability density estimation for sensor networks using quantized measurements,” *Proc. Conf. Inform. Sci. Syst.*, Baltimore, MD, Mar. 2007, pp. 759–764.
- [31] A. Dogandžić and B. Zhang, “Bayesian defect signal analysis,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 25, Melville, NY, 2006, pp. 617–624.
- [30] A. Dogandžić and B. Zhang, “Complex signal amplitude estimation and adaptive detection in unknown low-rank interference,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2006, pp. 2232–2236.

- [29] A. Dogandžić, N. Eua-Anant, and B. Zhang, “Defect detection using hidden Markov random fields,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 24, Melville, NY, 2005, pp. 704–711.
- [28] A. Dogandžić and B. Zhang, “Distributed mean-field estimation and detection in correlated Gaussian random fields using sensor networks,” *Proc. Allerton Conf. Commun., Contr., Comput.*, Monticello, IL, Sep. 2005, pp. 866–875.
- [27] A. Dogandžić and B. Zhang, “Distributed signal processing for sensor networks using hidden Markov random fields,” *Proc. Conf. Inform. Sci. Syst.*, Baltimore, MD, Mar. 2005.
- [26] A. Dogandžić and B. Zhang, “Event-region estimation for sensor networks under the Poisson regime,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2005, pp. 1571–1575.
- [25] A. Dogandžić and B. Zhang, “Parametric signal estimation using sensor networks in the presence of node localization errors,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2005, pp. 951–955.
- [24] J. Wang, A. Dogandžić, and A. Nehorai, “Cramér-Rao bounds for compound-Gaussian clutter and target parameters,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Philadelphia, PA, Mar. 2005, pp. 1101–1104.
- [23] A. Dogandžić, A. Nehorai, and J. Wang, “Maximum likelihood estimation of compound-Gaussian clutter and target parameters,” *Proc. 12th Annu. Workshop Adaptive Sensor Array Processing*, Lexington, MA, Mar. 2004.
- [22] A. Dogandžić and P. P. Amran, “Signal-strength based localization in wireless fading channels,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2004, pp. 2160–2164.
- [21] A. Dogandžić and N. Eua-Anant, “Defect detection in correlated noise,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 23, Melville, NY, 2004, pp. 628–635.
- [20] A. Dogandžić and P. Xiang, “A statistical model for eddy-current defect signals from steam generator tubes,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 23, Melville, NY, 2004, pp. 605–612.
- [19] A. Dogandžić and B. Zhang, “Dynamic power estimation and prediction in composite fading-shadowing channels,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Montréal, Canada, May 2004, pp. 1013–1016.
- [18] D. Gutiérrez, A. Nehorai, and A. Dogandžić, “MEG source estimation in the presence of low-rank interference using cross-spectral metrics,” *Proc. Int. Conf. IEEE Eng. Med. Biol. Soc.*, San Francisco, CA, Sep. 2004, pp. 990–993.
- [17] J. R. Bowler, W. Zhang, and A. Dogandžić, “Application of optimization methods to crack profile inversion using eddy currents,” *Rev. Prog. Quant. Nondestr. Eval.*, D. O. Thompson and D. E. Chimenti, Eds., ser. AIP Conf. Proc. Vol. 22, Melville, NY, 2003, pp. 742–749.

- [16] A. Dogandžić and J. Jin, “Estimating statistical properties of composite gamma-lognormal fading channels,” *Proc. Globecom Conf.*, San Francisco, CA, Dec. 2003, pp. 2406–2410.
- [15] A. Dogandžić, W. Mo, and Z. Wang, “Maximum likelihood semi-blind channel and noise estimation using the EM algorithm,” *Proc. Conf. Inform. Sci. Syst.*, Baltimore, MD, Mar. 2003.
- [14] A. Dogandžić and B. Zhang, “Maximum likelihood estimation of Jakes’ Doppler power spectrum parameters for SIMO channels using the Whittle approximation,” *Proc. IEEE Workshop Stat. Signal Process.*, St. Louis, MO, Sep. 2003, pp. 85–88.
- [13] W. Mo, Z. Wang, and A. Dogandžić, “Iterative channel estimation and decoding for coded MIMO system in unknown spatially correlated noise,” *Proc. Allerton Conf. Commun., Contr., Comput.*, Monticello, IL, Sep. 2003, pp. 324–333.
- [12] A. Dogandžić, “Chernoff bounds on pairwise error probabilities of space-time codes,” *Proc. IEEE Sensor Array Multichannel Signal Process. Workshop*, Rosslyn, VA, Aug. 2002, pp. 437–441.
- [11] A. Dogandžić, “Minimum variance beamforming in low-rank interference,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 2002, pp. 1293–1297.
- [10] A. Dogandžić and J. Jin, “Estimating statistical properties of MIMO Ricean fading channels,” *Proc. IEEE Sensor Array Multichannel Signal Process. Workshop*, Rosslyn, VA, Aug. 2002, pp. 149–153.
- [9] A. Dogandžić and A. Nehorai, “Finite-length MIMO adaptive equalization using canonical correlations,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Salt Lake City, UT, May 2001, pp. 2149–2152.
- [8] A. Dogandžić and A. Nehorai, “Cramér-Rao bounds for estimating range, velocity, and direction with a sensor array,” *Proc. IEEE Sensor Array Multichannel Signal Process. Workshop*, Cambridge, MA, Mar. 2000, pp. 370–374.
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- [6] A. Dogandžić and A. Nehorai, “Estimating range, velocity, and direction with a radar array,” *Proc. IEEE Int. Conf. Acoust., Speech, Signal Process.*, Phoenix, AZ, Mar. 1999, pp. 2773–2776.
- [5] A. Dogandžić and A. Nehorai, “Space-time fading channel estimation in unknown spatially correlated noise,” *Proc. Allerton Conf. Commun., Contr., Comput.*, Monticello, IL, Sep. 1999, pp. 948–957.
- [4] A. Dogandžić and A. Nehorai, “Localization of evoked electric sources and design of EEG/MEG sensor arrays,” *Proc. IEEE Signal Process. Workshop Stat. Signal Array Process.*, Portland, OR, Sep. 1998, pp. 228–231.
- [3] A. Nehorai and A. Dogandžić, “Estimation of propagating dipole sources by EEG/MEG sensor arrays,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 1998, pp. 304–308.

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- [1] A. Dogandžić and A. Nehorai, “Detecting a dipole source by MEG/EEG and generalized likelihood ratio tests,” *Proc. Asilomar Conf. Signals, Syst. Comput.*, Pacific Grove, CA, Nov. 1996, pp. 1196–1200.

## Graduate students

1. Rahul Singh, Ph.D., August 2016–present;
2. Anindya Das, Ph.D., August 2016–present;
3. Renliang Gu, Ph.D., August 2010–May 2017, “Convex-set-constrained sparse signal recovery: Theory and applications,” now with Google, Mountain View, CA;
4. Zhao Song, M.S., Aug. 2010–2012;
5. Kun Qiu, Ph.D., August 2006–May 2011, “Expectation maximization hard thresholding methods for sparse signal reconstruction”, now a Data Scientist at Accenture, San Diego, CA;
6. Glaucio G. de Oliveira, M.S., (Degang Chen, co-adviser), off-campus, 2007–2011, with Cummins Power Generation, Minneapolis, MN;
7. Lizandro D. Solano-Quinde, M.S., Aug. 2004–2006, Professor at Univ. Cuenca, Ecuador.
8. Benhong Zhang, Ph.D., August 2002–June 2006, “Spatial signal processing in wireless sensor networks”, now a Senior Vice President, Senior Quantitative Analyst at Bank of America, Charlotte, NC;
9. Jinghua Jin, August 2001–April 2006, Ph.D., (Yao Ma, co-adviser), “Diversity receiver design and channel statistic estimation in fading channels”, now with GE Healthcare, Waukesha, WI;
10. Ping Xiang, Ph.D., 2002–June 2005, “Automatic multi-frequency rotating-probe eddy-current data analysis”, granted July 2005, now with TeraRecon Inc, Boston, MA.
11. Nawanat Eua-Anant, M.S., 2001–2004, now with Electricity Generating Authority, Khon Kaen, Thailand.
12. Prihamdhani P. Amran, M.S., 2002–2004;
13. Carlos J. Chávez, M.S., 2001–2003, with Rockwell Collins, Cedar Rapids, IA.

## Service to the profession

### Editorship

- 2015–present, Senior Area Editor for *IEEE Transactions on Signal Processing*;



- 2014–present, Associate Editor for *IEEE Transactions on Signal and Information Processing over Networks*;
- Associate Editor for *IEEE Signal Processing Letters*, 2008–2013.
- Associate Editor for *IEEE Transactions on Signal Processing*, 2006–2010.
- Guest Editor for *IEEE Signal Processing Magazine*, Special Issue on Signal Processing for Positioning and Navigation with Applications to Communications, July 2005, with J. Riba, G. Seco, and A. L. Swindlehurst.
- Guest Editor for *EURASIP Journal on Applied Signal Processing*, Special Issue on Distributed Signal Processing Techniques for Wireless Sensor Networks, 2008, with E. Serpedin, H. Li, H. Dai, and P. Cota.
- Associate Editor for *International Journal of Navigation and Observation*, 2006–present.

## Conferences

- Technical co-chair, The Ninth IEEE Sensor Array and Multichannel (SAM) Signal Processing Workshop, Rio de Janeiro, Brazil, Jul. 2016.
- Technical co-chair, The Eighth IEEE SAM Signal Processing Workshop, A Coruña, Spain, Jun. 2014.
- General co-chair, The Fifth IEEE International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP), Saint Martin, French West Indies, Dec. 2013.
- General co-chair, The Fourth IEEE CAMSAP Workshop, San Juan, PR, Dec. 2011.
- Area Chair for Signal Processing Theory and Methods, 2015 European Signal Processing Conference (EUSIPCO), Nice, France.
- Area Chair for the 2016 IEEE Statistical Signal Processing (SSP) Workshop, Palma de Mallorca, Spain.
- Technical program committees
  - 2007–present, IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), through Institute of Electrical and Electronics Engineers (IEEE) SAM and Signal Processing Theory and Methods (SPTM) technical committees;
  - The 2018 IEEE International Conference on Communications (ICC), Wireless Communications Symposium, Kansas City, MO;
  - The 2018 Wireless Communications and Networking Conference (WCNC), Barcelona, Spain;
  - The 2017 CAMSAP, Curaçao, Dutch Antilles;
  - The 2017 EUSIPCO, Kos Island, Greece;
  - The 2017 WCNC, San Francisco, CA;
  - The 2016 EUSIPCO, Budapest, Hungary;

- The 2016 WCNC, Doha, Qatar;
  - The 2015 IEEE ICC, Wireless Communications Symposium, London, UK;
  - The 2015 Information Technology Society (ITG) International Workshop on Smart Antennas (WSA), Ilmenau, Germany;
  - The 2015 WCNC, New Orleans, LA;
  - The 2014 IEEE Global Communications Conference (GLOBECOM), Signal Processing for Communications Symposium, Austin, TX;
  - The 2014 EUSIPCO, Lisbon, Portugal;
  - The 2014 IEEE WCNC, Istanbul, Turkey, Apr. 2014.
  - The Tenth International Symposium on Wireless Communication Systems (ISWCS), Ilmenau, Germany, Aug. 2013,
  - The 2013 IEEE WCNC, Shanghai, China, Apr. 2013.
  - The 2012 EUSIPCO,
  - The IEEE SSP Workshop, Ann Arbor, MI, Aug. 2012,
  - The Seventh IEEE SAM Signal Processing Workshop, Hoboken, NJ, Jun. 2012,
  - The Fourth IEEE CAMSAP Workshop, San Juan, PR, Dec. 2011,
  - The 73rd IEEE Vehicular Technology Conference (VTC) Spring, Budapest, Hungary, May 2011,
  - The Sixth IEEE SAM Signal Processing Workshop, Kibbutz Ma’ale Hahamisha, Israel, Oct. 2010,
  - The Seventh ISWCS, York, United Kingdom, Sept. 2010,
  - The 71st IEEE VTC Spring, Taipei, Taiwan, Apr. 2010,
  - The 69th IEEE VTC Spring, Barcelona, Spain, Apr. 2009,
  - The Fifth IEEE SAM Signal Processing Workshop, Darmstadt, Germany, Jul. 2008,
  - The 2008 IEEE Radar Conference, Rome, Italy,
  - The 66th IEEE VTC Fall, Baltimore MD, Oct. 2007,
  - The 2006 EUSIPCO.
- Session chair
    - Emerging SAM Applications, *IEEE ICASSP*, Shanghai, China, March 2016;
    - Processing of Electro-Physiological Signals, *IEEE ICASSP*, Shanghai, China, March 2016;
    - Biomedical Signal Reconstruction, Processing, and Analysis, *IEEE ICASSP*, Shanghai, China, March 2016;
    - Sparsity in Signal Processing, *49th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2015;
    - Signal Processing and New Techniques, *42nd Annu. Review Progress Quantitative Nondestructive Evaluation*, Minneapolis, MN, Jul. 2015;
    - Compressed Sensing I, *48th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, Nov. 2014;

- Signal Processing, *40th Annu. Review Progress Quantitative Nondestructive Evaluation*, Baltimore, MD, Jul. 2013;
- Signal and System Modeling and Estimation II, IEEE ICASSP, Kyoto, Japan, March 2012,
- Sensor Networks and Distributed Estimation, IEEE ICASSP, Kyoto, Japan, March 2012,
- Compressive Imaging and Detection, 45th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2011,
- Detection and Estimation Theory II, IEEE SSP Workshop, Nice, France, June 2011,
- Sensor Networks II: Distributed Estimation, IEEE ICASSP, Dallas, TX, March 2010,
- Inversion, Reconstruction, and Characterization, 36th Annu. Review Progress Quantitative Nondestructive Evaluation (QNDE), Kingston, RI, Jul. 2009,
- Sensor Array Processing, ICASSP, Honolulu, HI, April 2007,
- Flaw Imaging and Characterization, 33rd QNDE, Portland, OR, Aug. 2006,
- Image and Signal Analysis, 32nd QNDE, Bowdoin College, Brunswick, ME, Aug. 2005.
- Session organizer and chair
  - Low Rank Matrix Approximation, The Sixth IEEE SAM Signal Processing Workshop, Kibbutz Ma’ale Hahamisha, Israel, Oct. 2010,
  - Detection and Estimation, 41st Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, Nov. 2007.

### **Professional committees & panels**

- Member of the SAM Technical Committee of the IEEE Signal Processing Society, 2007–2013, where I served as
  - Chair of the Nominations and Elections Subcommittee of the SAM Technical Committee, 2011–2012,
  - Chair of the Detection and Estimation Theory (DET) subcommittee of the SAM Technical Committee, 2012.
- Member of the SPTM Technical Committee of the IEEE Signal Processing Society, 2011–2016.
- Panel reviewer for the NSF, Computer & Information Science & Engineering (CISE), 2006, 2007, 2009, 2010, 2013, 2015, 2016, and 2017.

### **Recent invited talks**

1. “Projected Nesterov’s proximal-gradient algorithm for sparse signal recovery,” National University of La Plata, Argentina, Nov. 2016.
2. “Blind beam-hardening correction from Poisson measurements,” Center for Research and Advanced Studies (CINVESTAV), Monterrey, Mexico, Aug. 2016.

3. “Projected Nesterov’s proximal-gradient algorithm for sparse signal recovery,” Telecommunications for Space and Aeronautics (TéSA) Lab, Toulouse, France, May 2016.
4. “Blind beam-hardening correction from Poisson measurements,” Department of Instrument Science and Engineering, Jiangsu University, Zhenjiang, China, Mar. 2016.
5. “Projected Nesterov’s proximal-gradient algorithm and sparse tomographic signal reconstruction,” School of Telecommunications Engineering, Xidian University, Xi’an, China, Mar. 2016.
6. “Projected Nesterov’s proximal-gradient signal recovery from compressive Poisson measurements,” Department of Electrical and Systems Engineering, Washington University in St. Louis, Dec. 2015;
7. “Blind beam-hardening correction from Poisson measurements,” Department of Electrical and Systems Engineering, Washington University in St. Louis, Aug. 2015;
8. “A max-product EM algorithm for reconstructing Markov-tree sparse signals from compressive samples,” Technische Universität Ilmenau, Germany, Jun. 2013;
9. “A max-product EM algorithm for reconstructing Markov-tree sparse signals from compressive samples,” MINES ParisTech, Fontainebleau, France, Jun. 2013;
10. “A max-product EM algorithm for reconstructing Markov-tree sparse signals from compressive samples,” Department of Electronics, University of York, UK, Jun. 2013;
11. “Image reconstruction from compressive samples via a max-product EM algorithm,” Department of Electrical and Systems Engineering, Washington University in St. Louis, Aug. 2012;
12. “ECME thresholding methods for sparse signal reconstruction,” Dipartimento di Ingegneria Biomedica Elettronica e delle Telecomunicazioni, Università Federico II, Napoli, Italy, May 2012;
13. “Sparse X-ray CT image reconstruction using ECME hard thresholding methods,” Department of Electrical Engineering and Computer Science, Polytechnic University of Puerto Rico, Mar. 2011;
14. “ECME thresholding methods for sparse signal reconstruction,” Departament de Comunicació i Enginyeria de Sistemes, Universitat Autònoma de Barcelona, Spain, June 2010;
15. “ECME thresholding methods for sparse signal reconstruction,” Laboratoire Fizeau, Université de Nice Sophia-Antipolis, France, May 2010;
16. “ECME thresholding methods for sparse signal reconstruction,” Department of Electrical and Systems Engineering, Washington University in St. Louis, May 2010.
17. ExCoV: Expansion-compression variance-component based sparse-signal reconstruction from noisy measurements,” Department of Electrical and Computer Engineering, George Washington University, Washington, DC, Mar. 2009.

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