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RESEARCH INTERESTS

Algorithms, analysis, and application of statistical signal processing tools to the study of networks. Current research focus is on network topology inference, signal representation and inverse problems on graphs; robust, distributed, and sparsity-aware learning from high-dimensional network data; and spectrum sensing for wireless cognitive networks. Interested in Internet monitoring, social, brain network, power grid, and big data analytics.

TEACHING INTERESTS

The big data revolution not only offers the opportunity but also calls for our responsibility to reposition the signal processing body of knowledge as one of the core components of programs in data and information sciences. Teaching goal is to increase the visibility of statistical and graph signal processing tools to engineering students and beyond, through the development of new curricula and educational material that is accessible to all.

EMPLOYMENT

University of Rochester Associate Professor Asaro Biggar Family Fellow in Data Science Dept. of Electrical and Computer Engineering Dept. of Computer Science (Secondary Appointment) Goergen Institute for Data Science (Affiliated Member)	Rochester, New York July 2020 - present
University of Rochester Assistant Professor Dept. of Electrical and Computer Engineering Dept. of Computer Science (Secondary Appointment) Goergen Institute for Data Science (Affiliated Member)	Rochester, New York July 2014 - June 2020
Carnegie Mellon University Visiting Scholar - Database Group Computer Science Dept.	Pittsburgh, Pennsylvania June 2013 - May 2014
University of Minnesota Research Associate - SPiNCOM Group Dept. of Electrical and Computer Engineering	Minneapolis, Minnesota June 2012 - May 2014
University of Minnesota Research Assistant - SPiNCOM Group Dept. of Electrical and Computer Engineering	Minneapolis, Minnesota August 2006 - May 2012
ABB S.A. Systems Engineer Automation Technologies Division	Montevideo, Uruguay December 2003 - June 2006
Universidad de la República Research Assistant - Data Networks Group Dept. of Electrical Engineering	Montevideo, Uruguay February 2003 - July 2006

EDUCATION

University of Minnesota Ph. D. in Electrical Engineering <i>Thesis:</i> "Sparsity Control for Robustness and Social Data Analysis" <i>Advisor:</i> Prof. Georgios B. Giannakis	Minneapolis, Minnesota May 2012
University of Minnesota M. Sc. in Electrical Engineering <i>Thesis:</i> "Distributed Adaptive Estimation and Tracking using Wireless Sensor Networks"	Minneapolis, Minnesota July 2009

Advisor: Prof. Georgios B. Giannakis

Universidad de la República

B. Sc. in Electrical Engineering

Project: "Implementing VoIP using SIP: A study based on Asterisk"

Advisors: Profs. Gabriel Gómez and Luis Vázquez

Montevideo, Uruguay

September 2005

ACADEMIC HONORS AND AWARDS

- 2021 IEEE Signal Processing Society Pierre-Simon Laplace Early Career Technical Achievement Award "For contributions to distributed, online and robust signal processing over networks."
- Best student paper contest third place for Ph. D. student B. Marengo at the 2021 Asilomar Conference on Signals, Systems, and Computers for the paper "Online change point detection for random dot product graphs" (co-authored with B. Marengo, F. Larroca, P. Bermolen and M. Fiori).
- 2020 IEEE Signal Processing Society Young Author Best Paper Award for S. Segarra for the paper "Network topology inference from spectral templates," published in the IEEE Transactions on Signal and Information Processing over Networks (co-authored with S. Segarra, A. G. Marques and A. Ribeiro).
- Asaro Biggar Family Fellow in Data Science (endowment supports researchers in varied disciplines using data science methods to frame, analyze, and answer the big questions in their fields). The fellowship allows the University of Rochester to honor and encourage outstanding faculty early in their academic careers.
- 2019 IEEE Signal Processing Society Outstanding Editorial Board Award for work as Associate Editor for the IEEE Transactions on Signal Processing.
- Best student paper award for Ph. D. student Y. Li at the 2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) for the paper "Identifying structural brain networks from functional connectivity: A network deconvolution approach" (co-authored with Y. Li).
- Best student paper award for Ph. D. student R. Shafipour and A. Khodabakhsh at the 2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) for the paper "Digraph Fourier transform via spectral dispersion minimization" (co-authored with R. Shafipour, A. Khodabakhsh and E. Nikolova).
- 2018 NSF CAREER Award (CISE-CCF-CIF).
- Associate Marshal in the 2018 University of Rochester Doctoral Commencement (honor is awarded to pre-tenure faculty who have served admirably in teaching and mentoring graduate students).
- 2017 IEEE Signal Processing Society Young Author Best Paper Award for M. Mardani for the paper "Subspace learning and imputation for streaming big data matrices and tensors," published in the IEEE Transactions on Signal Processing (co-authored with M. Mardani and G. B. Giannakis).
- Best student paper award for S. Segarra at the 2016 IEEE Statistical Signal Processing (SSP) Workshop for the paper "Network topology identification from spectral templates" (co-authored with S. Segarra, A. G. Marques and A. Ribeiro).
- University of Minnesota's Best Dissertation Award (Honorable Mention) across all disciplines in the Physical Sciences and Engineering, May 2013. Won nomination as the Best Doctoral Dissertation from the Ph. D. program in Electrical Engineering, 2012.
- Best student paper award at the 2012 IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC) for the paper "Distributed nuclear norm minimization for matrix completion" (co-authored with M. Mardani and G. B. Giannakis).
- Ph. D. Travel Scholarship, Dept. of Electrical and Computer Engineering, University of Minnesota, February 2011.
- Best student paper contest finalist at the 2011 IEEE Digital Signal Processing (DSP) Workshop for the paper "Parallelizable algorithms for the selection of grouped variables" (co-authored with J. A. Bazerque and G. B. Giannakis).
- Ranked first among the 59 graduates (~ 200 entrants) from the Electrical Engineering class of 2005, Universidad de la República.
- Finalist (nominated by the students) for the Outstanding Teaching Assistant Award, School of Engineering, Universidad de la República, 2004.
- Outstanding All-Around Student Award, The British Schools, Uruguay, 1999.
- John Thewlis Prize for Excellence in Mathematics, The British Schools, Uruguay, 1998.

PUBLICATIONS Journal papers: 40, conference papers: 66, book chapters: 5. Total citations: 4493. H-index: 29. I10-index: 53.

Journal papers (working drafts/submitted/revised)

- [J40] C. Ye, S. S. Saboksayr, I. Delis, and **G. Mateos**, “A tensor decomposition uncovers the effect of aging on muscle couplings during grasping,” *Sci. Rep.*, vol. 11, August 2021 (working draft).
- [J39] B. Marengo, P. Bermolen, M. Fiori, F. Larroca, and **G. Mateos**, “Online change-point detection for weighted and directed random dot product graphs,” *IEEE Trans. Signal Inf. Process. Netw.*, vol. 7, September 2021 (submitted) [code].
- [J38] Y. Li, **G. Mateos**, and Z. Zhang, “Learning to model the relationship between brain structural and functional connectomes,” *IEEE Trans. Signal Inf. Process. Netw.*, vol. 7, December 2021 (submitted) [pdf][code].
- [J37] R. Shafipour, S. Segarra, A. G. Marques, and **G. Mateos**, “Learning directed graphs via graph filter identification,” *IEEE Trans. Signal Process.*, vol. 68, May 2020 (working draft).
- [J36] C. Ye and **G. Mateos**, “Online tensor decomposition and imputation for streaming Poisson data,” *Signal Processing*, vol. 169, December 2019 (working draft).
- [J35] Y. Li and **G. Mateos**, “A network deconvolution approach to identification of structural brain networks from functional connectivity,” *IEEE Trans. Med. Imaging*, vol. 4, September 2019 (working draft).
- [J34] R. Shafipour and **G. Mateos**, “Digraph Fourier transform: Sparse signal-adapted representations and distributed filtering,” *IEEE Trans. Signal Inf. Process. Netw.*, vol. 6, June 2020 (working draft).
- [J33] A. Hashemi, R. Shafipour, H. Vikalo, and **G. Mateos**, “Towards accelerated greedy sampling and reconstruction of bandlimited graph signals,” *Signal Processing*, vol. 187, September 2021 (submitted) [pdf].
- [J32] Y. Li and **G. Mateos**, “Networks of international football: Communities, evolution and globalization of the game,” *Appl. Network Sci.*, April 2019 (extended abstract submitted) [pdf].

Journal papers (published/in press)

- [J31] S. S. Saboksayr and **G. Mateos**, “Accelerated graph learning from smooth signals,” *IEEE Signal Process. Lett.*, vol. 28, pp. 2192–2196, October 2021 [pdf] [code].
- [J30] S. S. Saboksayr, **G. Mateos**, and M. Cetin, “Online discriminative graph learning from multi-class smooth signals,” *Signal Processing*, vol. 186, pp. 1–14, April 2021 [pdf].
- [J29] R. Shafipour, S. Segarra, A. G. Marques, and **G. Mateos**, “Identifying the topology of undirected networks from diffused non-stationary graph signals,” *IEEE Open J. Signal Process.*, vol. 2, pp. 171–189, April 2021 [pdf] [code].
- [J28] A. G. Marques, S. Segarra, and **G. Mateos**, “Signal processing on directed graphs,” *IEEE Signal Process. Mag.*, vol. 37, November 2020 [pdf].
- [J27] R. Shafipour and **G. Mateos**, “Online topology inference from streaming stationary graph signals with partial connectivity information,” *Algorithms*, vol. 13, pp. 1–19, September 2020 [pdf].
- [J26] F. Gama, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Rethinking sketching as sampling: A graph signal processing approach,” *Signal Processing*, vol. 169, pp. 1–15, December 2019 [pdf].
- [J25] **G. Mateos**, S. Segarra, A. G. Marques, and A. Ribeiro, “Connecting the dots: Identifying network structure via graph signal processing,” *IEEE Signal Process. Mag.*, vol. 36, pp. 16–43, May 2019 [pdf].
- [J24] R. Shafipour, A. Khodabakhsh, **G. Mateos**, and E. Nikolova, “A directed graph Fourier transform with spread frequency components,” *IEEE Trans. Signal Process.*, vol. 67, pp. 946–960, February 2019 [pdf] [code].
- [J23] R. Shafipour, R. A. Baten, M. K. Hasan, G. Ghoshal, **G. Mateos**, and M. E. Hoque, “Buildup of speaking skills in an online learning community: A network-analytic exploration,” *Palgrave Communications*, vol. 4, June 2018 [pdf] [code].

- [J22] S. Segarra, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Network topology inference from spectral templates,” *IEEE Trans. Signal Inf. Process. Netw.*, vol. 3, pp. 467–483, August 2017 (**2020 IEEE Signal Processing Society Young Author Best Paper Award**) [[pdf](#)].
- [J21] S. Segarra, **G. Mateos**, A. G. Marques, and A. Ribeiro, “Blind identification of graph filters,” *IEEE Trans. Signal Process.*, vol. 65, pp. 1146–1159, January 2017 [[pdf](#)].
- [J20] A. Shoari and **G. Mateos**, “On the definition and existence of a minimum variance unbiased estimator for target localization,” *IEEE Signal Process. Lett.*, vol. 23, pp. 964–968, July 2016 [[pdf](#)].
- [J19] A. Shoari, **G. Mateos**, and A. Seyedi, “Analysis of target localization with ideal binary detectors via likelihood function smoothing,” *IEEE Signal Process. Lett.*, vol. 23, pp. 737–741, May 2016 [[pdf](#)].
- [J18] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Subspace learning and imputation for streaming Big Data matrices and tensors,” *IEEE Trans. Signal Process.*, vol. 63, pp. 2663–2677, March 2015 (**2017 IEEE Signal Processing Society Young Author Best Paper Award**) [[pdf](#)].
- [J17] K. Slavakis, S. J. Kim, **G. Mateos**, and G. B. Giannakis, “Stochastic approximation vis-à-vis online learning for Big Data,” *IEEE Signal Process. Mag.*, vol. 31, pp. 124–129, November 2014 [[pdf](#)].
- [J16] K. Slavakis, G. B. Giannakis, and **G. Mateos**, “Modeling and optimization for Big Data analytics,” *IEEE Signal Process. Mag.*, vol. 31, pp. 18–31, September 2014 [[pdf](#)].
- [J15] B. Baingana, **G. Mateos**, and G. B. Giannakis, “Proximal-gradient algorithms for tracking cascades over social networks,” *IEEE J. Sel. Topics Signal Process.*, vol. 8, pp. 563–575, August 2014 [[pdf](#)].
- [J14] **G. Mateos** and G. B. Giannakis, “Load curve data cleansing and imputation via sparsity and low rank,” *IEEE Trans. Smart Grid*, vol. 4, pp. 2347–2355, December 2013 [[pdf](#)].
- [J13] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Decentralized sparsity-regularized rank minimization: Algorithms and applications,” *IEEE Trans. Signal Process.*, vol. 61, pp. 5374–5388, November 2013 [[pdf](#)].
- [J12] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Rank regularization and Bayesian inference for tensor completion and extrapolation,” *IEEE Trans. Signal Process.*, vol. 61, pp. 5689–5703, November 2013 [[pdf](#)].
- [J11] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Recovery of low-rank plus compressed sparse matrices with application to unveiling traffic anomalies,” *IEEE Trans. Inf. Theory*, vol. 59, pp. 5186–5205, August 2013 [[pdf](#)].
- [J10] **G. Mateos** and K. Rajawat, “Dynamic network cartography,” *IEEE Signal Process. Mag.*, vol. 30, pp. 129–143, May 2013 [[pdf](#)].
- [J9] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Dynamic anomalography: Tracking network anomalies via sparsity and low rank,” *IEEE J. Sel. Topics Signal Process.*, vol. 7, pp. 50–66, February 2013 [[pdf](#)].
- [J8] **G. Mateos** and G. B. Giannakis, “Robust PCA as bilinear decomposition with outlier sparsity regularization,” *IEEE Trans. Signal Process.*, vol. 60, pp. 5176–5190, October 2012 [[pdf](#)].
- [J7] **G. Mateos** and G. B. Giannakis, “Distributed recursive least-squares: Stability and performance analysis,” *IEEE Trans. Signal Process.*, vol. 60, pp. 1571–1584, July 2012 [[pdf](#)].
- [J6] **G. Mateos** and G. B. Giannakis, “Robust nonparametric regression via sparsity control with application to load curve data cleansing,” *IEEE Trans. Signal Process.*, vol. 60, pp. 1571–1584, April 2012 [[pdf](#)].
- [J5] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Group-Lasso on splines for spectrum cartography,” *IEEE Trans. Signal Process.*, vol. 59, pp. 4648–4663, October 2011 [[pdf](#)].
- [J4] **G. Mateos**, J. A. Bazerque, and G. B. Giannakis, “Distributed sparse linear regression,” *IEEE Trans. Signal Process.*, vol. 58, pp. 5262–5276, October 2010 [[pdf](#)].
- [J3] **G. Mateos**, I. D. Schizas, and G. B. Giannakis, “Performance analysis of the consensus-based distributed LMS algorithm,” *EURASIP J. Advances Signal Process.*, vol. 2009, December 2009 [[pdf](#)].
- [J2] **G. Mateos**, I. D. Schizas, and G. B. Giannakis, “Distributed recursive least-squares for consensus-based in-network adaptive estimation,” *IEEE Trans. Signal Process.*, vol. 57, pp. 4583–4588, November 2009 [[pdf](#)].

- [J1] I. D. Schizas, **G. Mateos**, and G. B. Giannakis, “Distributed LMS for consensus-based in-network adaptive processing,” *IEEE Trans. Signal Process.*, vol. 57, pp. 2365–2381, June 2009 [pdf].

Conference papers

- [C66] C. Ye and **G. Mateos**, “A supervised learning approach to blind deconvolution on graphs,” in *Proc. of European Signal Process. Conf.*, Belgrade, Serbia, August 29-September 2, 2022 (submitted).
- [C65] M. Fiori, P. Bermolen, F. Larroca, B. Marenco, and **G. Mateos**, “Tracking adjacency spectral embeddings of dynamic and directed networks,” in *Proc. of European Signal Process. Conf.*, Belgrade, Serbia, August 29-September 2, 2022 (submitted).
- [C64] Y. Li and **G. Mateos**, “Learning graph-level, distance-preserving representations of brain structure-function coupling,” in *Proc. of European Signal Process. Conf.*, Belgrade, Serbia, August 29-September 2, 2022 (submitted).
- [C63] M. Fiori, P. Bermolen, F. Larroca, B. Marenco, and **G. Mateos**, “Algorithmic advances for the adjacency spectral embedding,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Singapore, May 22-27, 2022 (submitted).
- [C62] B. Marenco, F. Larroca, P. Bermolen, M. Fiori, and **G. Mateos**, “Online change-point detection for random dot product graphs,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, Pacific Grove, CA, November 1-3, 2021 (**Best student paper contest third place**).
- [C61] S. S. Saboksayr, **G. Mateos**, and M. Cetin, “Fast topology identification from smooth graph signals,” in *Proc. Balkan Conference on Commun. and Networking*, Novi Sad, Serbia, September 20-22, 2021 [pdf] [slides] [video].
- [C60] F. Larroca, P. Bermolen, M. Fiori, and **G. Mateos**, “Change-point detection and localization in weighted and directed random dot product graphs,” in *Proc. of European Signal Process. Conf.*, Dublin, Ireland, August 23-27, 2021 [pdf] [slides] [video].
- [C59] S. S. Saboksayr, **G. Mateos**, and M. Cetin, “Online graph learning under smoothness priors,” in *Proc. of European Signal Process. Conf.*, Dublin, Ireland, August 23-27, 2021 [pdf] [slides].
- [C58] Y. Li and **G. Mateos**, “Graph frequency analysis of COVID-19 incidence to identify county-level contagion patterns in the United States,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Toronto, ON, June 6-11, 2021 [pdf] [slides] [poster] [video].
- [C57] S. S. Saboksayr, **G. Mateos**, and M. Cetin, “EEG-based emotion classification using graph signal processing,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Toronto, ON, June 6-11, 2021 [pdf] [slides] [poster] [video].
- [C56] R. Shafipour and **G. Mateos**, “Online proximal gradient for learning graphs from streaming signals,” in *Proc. of European Signal Process. Conf.*, Amsterdam, Netherlands, January 18-22, 2021 [pdf] [slides] [video].
- [C55] C. Lassance, V. Gripon, and **G. Mateos**, “Graph topology inference benchmarks for machine learning,” in *Proc. IEEE Int. Workshop on Machine Learning for Signal Process.*, Espoo, Finland, September 21-24, 2020 [pdf] [slides] [video] [code].
- [C54] Y. Li and **G. Mateos**, “Graph frequency analysis of COVID-19 prevalence in the United States,” in *Proc. KDD Workshop on Mining and Learning with Graphs*, San Diego, CA, August 24, 2020 [pdf] [video].
- [C53] Y. Li, R. Shafipour, **G. Mateos**, and Z. Zhang, “Supervised graph representation learning for modeling the relationship between structural and functional brain connectivity,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Barcelona, Spain, May 4-8, 2020 [pdf] [slides] [video].
- [C52] R. Shafipour and **G. Mateos**, “Online network topology inference with partial connectivity information,” in *Proc. IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Process.*, Guadeloupe, West Indies, December 15-18, 2019 [pdf] [slides].
- [C51] Y. Li, R. Shafipour, **G. Mateos**, and Z. Zhang, “Mapping brain structural connectivities to functional networks via graph encoder-decoder with interpretable latent embeddings,” in *Proc. IEEE Global Conf. on Signal and*

- Information Process.*, Ottawa, Canada, November 11-14, 2019 [[pdf](#)] [[slides](#)].
- [C50] C. Ye and **G. Mateos**, “Online tensor decomposition and imputation for count data,” in *Proc. IEEE Data Science Workshop*, Minneapolis, MN, June 2-5, 2019 [[pdf](#)] [[poster](#)].
- [C49] R. Shafipour, A. Hashemi, **G. Mateos**, and H. Vikalo, “Online topology inference from streaming graph signals,” in *Proc. IEEE Data Science Workshop*, Minneapolis, MN, June 2-5, 2019 [[pdf](#)] [[slides](#)].
- [C48] Y. Li and **G. Mateos**, “Identifying structural brain networks from functional connectivity: A network deconvolution approach,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Brighton, UK, May 12-17, 2019 (**Best student paper award**) [[pdf](#)] [[poster](#)].
- [C47] R. Shafipour, A. Khodabakhsh, and **G. Mateos**, “A windowed digraph Fourier transform,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Brighton, UK, May 12-17, 2019 [[pdf](#)] [[poster](#)].
- [C46] A. Hashemi, R. Shafipour, H. Vikalo, and **G. Mateos**, “A novel scheme for support identification and iterative sampling of bandlimited graph signals,” in *Proc. IEEE Global Conf. on Signal and Information Process.*, Anaheim, CA, November 26-28, 2018 [[pdf](#)] [[poster](#)].
- [C45] R. Shafipour and **G. Mateos**, “Spread and sparse: Learning interpretable transforms for bandlimited signals on directed graphs,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, Pacific Grove, CA, October 28-31, 2018 [[pdf](#)] [[slides](#)].
- [C44] C. Ye, R. Shafipour, and **G. Mateos**, “Blind identification of invertible graph filters with multiple sparse inputs,” in *Proc. of European Signal Process. Conf.*, Rome, Italy, September 3-7, 2018 [[pdf](#)] [[slides](#)].
- [C43] R. Shafipour, S. Segarra, A. G. Marques, and **G. Mateos**, “Directed network topology inference via graph filter identification,” in *Proc. IEEE Data Science Workshop*, Lausanne, Switzerland, June 4-6, 2018 [[pdf](#)] [[slides](#)].
- [C42] A. Hashemi, R. Shafipour, H. Vikalo, and **G. Mateos**, “Sampling and reconstruction of graph signals via weak submodularity and semidefinite relaxation,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Calgary, Canada, April 15-20, 2018 [[pdf](#)] [[poster](#)].
- [C41] R. Shafipour, A. Khodabakhsh, **G. Mateos**, and E. Nikolova, “Digraph Fourier transform via spectral dispersion minimization,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Calgary, Canada, April 15-20, 2018 (**Best student paper award**) [[pdf](#)] [[slides](#)].
- [C40] R. Shafipour, S. Segarra, A. G. Marques, and **G. Mateos**, “Identifying undirected network structure via semidefinite relaxation,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Calgary, Canada, April 15-20, 2018 [[pdf](#)] [[slides](#)].
- [C39] R. Magu and **G. Mateos**, “United Nations General Assembly vote similarity networks,” in *Proc. Int. Conf. on Complex Networks and their Applications*, Lyon, France, November 29-30, 2017 [[pdf](#)] [[slides](#)].
- [C38] R. Shafipour, A. Khodabakhsh, **G. Mateos**, and E. Nikolova, “A digraph Fourier transform with spread frequency components,” in *Proc. IEEE Global Conf. on Signal and Information Process.*, Montreal, Canada, November 14-16, 2017 [[pdf](#)] [[slides](#)].
- [C37] R. Shafipour, S. Segarra, A. G. Marques, and **G. Mateos**, “Network topology inference from non-stationary graph signals,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, New Orleans, LA, March 5-9, 2017 [[pdf](#)] [[slides](#)].
- [C36] S. Segarra, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Robust network topology inference,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, New Orleans, LA, March 5-9, 2017 [[pdf](#)] [[slides](#)].
- [C35] F. Gama, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Rethinking sketching as sampling: Efficient approximate solution to linear inverse problems,” in *Proc. IEEE Global Conf. on Signal and Information Process.*, Washington, DC, December 7-9, 2016 [[pdf](#)].
- [C34] S. Segarra, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Network topology identification from imperfect spectral templates,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, Pacific Grove, CA, November 6-9, 2016 [[pdf](#)] [[slides](#)].
- [C33] F. Gama, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Rethinking sketching as sampling: Linear transforms

- of graph signals,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, Pacific Grove, CA, November 6-9, 2016 [pdf].
- [C32] A. G. Marques, **G. Mateos**, and Y. Eldar, “SIGIBE: Solving random bilinear equations via gradient descent with spectral initialization,” in *Proc. of European Signal Process. Conf.*, Budapest, Hungary, August 29-31, 2016 [pdf] [poster].
- [C31] S. Segarra, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Network topology identification from spectral templates,” in *Proc. IEEE Workshop on Statistical Signal Process.*, Palma de Mallorca, Spain, June 26-29, 2016 (**Best student paper award**) [pdf] [poster].
- [C30] S. Segarra, A. G. Marques, **G. Mateos**, and A. Ribeiro, “Blind identification of graph filters with multiple sparse inputs,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, Shanghai, China, March 20-25, 2016 [pdf] [slides].
- [C29] S. Segarra, **G. Mateos**, A. G. Marques, and A. Ribeiro, “Blind identification of graph filters with sparse inputs,” in *Proc. IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Process.*, Cancun, Mexico, December 13-16, 2015 [pdf] [poster].
- [C28] B. Baingana, E. Dall’Anese, **G. Mateos**, and G. B. Giannakis, “Robust kriged Kalman filtering,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, Pacific Grove, CA, November 8-11, 2015 (invited) [pdf] [slides].
- [C27] M. Hassanalieragh, A. Page, T. Soyata, G. Sharma, M. Aktas, **G. Mateos**, B. Kantarci, and S. Andreescu, “Health monitoring and management using internet-of-things (IOT) sensing with cloud-based processing: Opportunities and challenges,” in *Proc. IEEE Int. Conf. on Services Computing*, pp. 285–292, New York, NY, June 27-30, 2015 [pdf].
- [C26] M. Araujo, **G. Mateos**, S. Günnemann, and C. Faloutsos, “Beyond blocks: hyperbolic community detection,” in *Proc. European Conf. on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, Nancy, France, September 15-19, 2014 [pdf] [poster] [code].
- [C25] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Imputation of streaming low-rank tensor data,” in *Proc. IEEE Sensor Array and Multichannel Signal Process. Workshop*, pp. 433–436, A Coruña, Spain, June 22-25, 2014 [pdf] [slides].
- [C24] B. Baingana, **G. Mateos**, and G. B. Giannakis, “A proximal gradient algorithm for tracking cascades over networks,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 4811–4815, Florence, Italy, May 4-9, 2014 [pdf] [slides].
- [C23] B. Baingana, **G. Mateos**, and G. B. Giannakis, “Dynamic structural equation models for tracking topologies of social networks,” in *Proc. IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Process.*, pp. 292–295, St. Martin, December 15-18, 2013 [pdf] [slides].
- [C22] B. Baingana, **G. Mateos**, and G. B. Giannakis, “Dynamic structural equation models for tracking cascades over social networks,” in *Proc. NIPS Workshop on Frontiers of Network Analysis: Methods, Models, and Applications*, Lake Tahoe, NV, December 9, 2013 [pdf] [poster].
- [C21] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Rank minimization for subspace tracking from incomplete data,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 5681–5685, Vancouver, Canada, May 26-31, 2013 [pdf] [slides].
- [C20] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Inference of Poisson count processes using low-rank tensor data,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 5989–5993, Vancouver, Canada, May 26-31, 2013 [pdf] [slides].
- [C19] **G. Mateos** and G. B. Giannakis, “Spatiotemporal load curve data cleansing and imputation via sparsity and low rank,” in *Proc. IEEE Int. Conf. Smart Grid Commun.*, pp. 653–658, Tainan City, Taiwan, November 5-8, 2012 (invited) [pdf] [slides].
- [C18] **G. Mateos** and G. B. Giannakis, “Steady-state performance analysis of the distributed RLS algorithm,” in *Proc. IEEE Int. Workshop on Machine Learning for Signal Process.*, pp. 1–6, Santander, Spain, September 23-26, 2012 [pdf].

- [C17] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Nonparametric low-rank tensor imputation,” in *Proc. IEEE Workshop on Statistical Signal Process.*, pp. 888–891, Ann Arbor, MI, August 5-8, 2012 [[pdf](#)] [[slides](#)].
- [C16] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Exact recovery of low-rank plus compressed sparse matrices,” in *Proc. IEEE Workshop on Statistical Signal Process.*, pp. 49–52, Ann Arbor, MI, August 5-8, 2012 [[pdf](#)] [[slides](#)].
- [C15] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Distributed nuclear norm minimization for matrix completion,” in *Proc. IEEE Workshop on Signal Process. Advances in Wireless Commun.*, pp. 354–358, Çeşme, Turkey, June 17-20, 2012 (**Best student paper award**) [[pdf](#)] [[slides](#)].
- [C14] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Unveiling anomalies in large-scale networks via sparsity and low rank,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, pp. 403–407, Pacific Grove, CA, November 6-9, 2011 (invited) [[pdf](#)] [[slides](#)].
- [C13] **G. Mateos** and G. B. Giannakis, “Robust conjoint analysis by controlling outlier sparsity,” in *Proc. of European Signal Process. Conf.*, pp. 1914–1918, Barcelona, Spain, August 29 - September 2, 2011 (invited) [[pdf](#)] [[slides](#)].
- [C12] G. B. Giannakis, **G. Mateos**, S. Farahmand, V. Kekatos, and H. Zhu, “USPACOR: Universal sparsity-controlling outlier rejection,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 1952–1955, Prague, Czech Republic, May 22-27, 2011 [[pdf](#)] [[slides](#)].
- [C11] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Basis pursuit for spectrum cartography,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 2992–2995, Prague, Czech Republic, May 22-27, 2011 [[pdf](#)] [[slides](#)].
- [C10] **G. Mateos** and G. B. Giannakis, “Robust nonparametric regression by controlling sparsity,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 3880–3883, Prague, Czech Republic, May 22-27, 2011 [[pdf](#)] [[slides](#)].
- [C9] **G. Mateos**, J. A. Bazerque, and G. B. Giannakis, “Parallelizable algorithms for the selection of grouped variables,” in *Proc. DSP Workshop*, pp. 295–300, Sedona, AZ, January 4-7, 2011 (**Best student paper contest finalist**) [[pdf](#)] [[slides](#)].
- [C8] **G. Mateos** and G. B. Giannakis, “Sparsity control for robust principal component analysis,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, pp. 1925–1929, Pacific Grove, CA, November 7-10, 2010 (invited) [[pdf](#)] [[slides](#)].
- [C7] J. A. Bazerque, **G. Mateos**, and G. B. Giannakis, “Distributed Lasso for in-network linear regression,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 2978–2981, Dallas, TX, March 14-19, 2010 [[pdf](#)] [[slides](#)].
- [C6] H. Zhu, **G. Mateos**, G. B. Giannakis, N. D. Sidiropoulos, and A. Banerjee, “Sparsity-cognizant overlapping co-clustering for behavior inference in social networks,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 3534–3537, Dallas, TX, March 14-19, 2010 [[pdf](#)] [[slides](#)].
- [C5] **G. Mateos**, J. A. Bazerque, and G. B. Giannakis, “Spline-based spectrum cartography for cognitive radios,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, pp. 1025–1029, Pacific Grove, CA, November 1-4, 2009 [[pdf](#)] [[slides](#)].
- [C4] **G. Mateos**, I. D. Schizas, and G. B. Giannakis, “Closed-form MSE performance of the distributed LMS algorithm,” in *Proc. DSP Workshop*, pp. 66–71, Marco Island, FL, January 4-7, 2009 [[pdf](#)] [[slides](#)].
- [C3] I. D. Schizas, **G. Mateos**, and G. B. Giannakis, “Stability analysis of the consensus-based distributed LMS algorithm,” in *Proc. Int. Conf. Acoustics, Speech, Signal Process.*, pp. 3289–3292, Las Vegas, NV, March 30 - April 4, 2008 [[pdf](#)].
- [C2] I. D. Schizas, **G. Mateos**, and G. B. Giannakis, “Consensus-based distributed recursive least-squares estimation in ad hoc wireless sensor networks,” in *Proc. Asilomar Conf. on Signals, Systems, Computers*, pp. 386–390, Pacific Grove, CA, November 4-7, 2007 [[pdf](#)].
- [C1] **G. Mateos**, I. D. Schizas, and G. B. Giannakis, “Consensus-based distributed least-mean square algorithm using wireless ad hoc networks,” in *Proc. Allerton Conf.*, vol. 2, pp. 568–574, Monticello, IL, September 26-28, 2007 [[pdf](#)] [[slides](#)].

Book chapters

- [B5] **G. Mateos**, S. Segarra, and A. G. Marques, “Inference of graph topology,” in *Cooperative and Graph Signal Processing: Principles and Applications* (P. M. Djurić and C. Richard, eds.), Amsterdam, Netherlands: Elsevier, 2018 [[pdf](#)].
- [B4] M. Mardani, **G. Mateos**, and G. B. Giannakis, “Big data,” in *Cooperative and Graph Signal Processing: Principles and Applications* (P. M. Djurić and C. Richard, eds.), Amsterdam, Netherlands: Elsevier, 2018 [[pdf](#)].
- [B3] **G. Mateos** and G. B. Giannakis, “Robust PCA by controlling sparsity in model residuals,” in *Robust Decomposition in Low Rank and Sparse Matrices and its Applications in Image and Video Processing* (E. Z. T. Bouwmans and N. Aybat, eds.), Boca Raton: CRC Press, 2016 [[pdf](#)].
- [B2] G. B. Giannakis, Q. Ling, **G. Mateos**, I. D. Schizas, and H. Zhu, “Decentralized learning for wireless communications and networking,” in *Splitting Methods in Communication and Imaging, Science and Engineering* (R. Glowinsky, S. Osher, and W. Yin, eds.), New York: Springer, 2016 [[pdf](#)].
- [B1] B. Baingana, P. Traganitis, **G. Mateos**, and G. B. Giannakis, “Big Data analytics for social networks,” in *Graph Analysis for Social Media* (I. Pitas, ed.), Boca Raton: CRC Press, 2015 [[pdf](#)].

Theses

- [T2] **G. Mateos**, *Sparsity Control for Robustness and Social Data Analysis*. PhD thesis, University of Minnesota, Twin Cities, May 2012 (**University of Minnesota’s Best Dissertation Award honorable mention**) [[pdf](#)] [[slides](#)].
- [T1] **G. Mateos**, “Distributed Adaptive Estimation and Tracking using Ad Hoc Wireless Sensor Networks,” Master’s thesis, University of Minnesota, Twin Cities, July 2009 [[pdf](#)] [[slides](#)].

Patents

- [P2] G. B. Giannakis, E. Dall’Anese, J. A. Bazerque, H. Zhu, and **G. Mateos**, “Robust parametric power spectral density (PSD) map construction.” US Patent No. 9,363,679, June 2016 [[pdf](#)].
- [P1] G. B. Giannakis, J. A. Bazerque, and **G. Mateos**, “Non-parametric power spectral density (PSD) map construction.” US Patent No. 9,191,831, November 2015 [[pdf](#)].

FUNDING EXPERIENCE

- Senior Personnel (Data Scientist, Informatics Core): “The University of Rochester Clinical and Translational Science Institute,” National Institutes of Health (NIH): National Center for Advancing Translational Sciences (NCATS) program on Clinical and Translational Science Award (CTSA) hubs, PIs: Martin Zand and Nancy Bennett, \$ 19,107,870, 2020-2025.
- Senior Personnel: “Collaborative Research: HDR TRIPODS: Foundations of Greater Data Science,” National Science Foundation (NSF) program on Harnessing the Data Revolution: Transdisciplinary Research in Principles of Data Science (HDR TRIPODS) Phase I, PI: Mujdat Cetin, \$ 814,165 (\$ 1,500,000 total with Cornell University), 2020-2023.
- PI: “Workshop: Student Travel Support for the 2019 IEEE Data Science Workshop to be Held in Minneapolis, MN June 2-5, 2019,” NSF program on Energy, Power, Control, and Networks (EPCN), \$ 15,000, 2019-2020.
- PI: “Conference Support for the 2019 IEEE Data Science Workshop,” Army Research Office (ARO) program on Intelligent Information Networks, \$ 15,000, 2019.
- PI: “Localizing Sources of Network Diffusion via Graph Signal Processing,” NSF program on Communications, Circuits and Sensing Systems (CCSS), \$ 245,229, 2018-2021.
- PI: “CAREER: Inferring Graph Structure via Spectral Representations of Network Processes,” NSF Faculty Early Career Development Program (CAREER), \$ 407,944, 2018-2023.
- Co-PI: “Epilepsy Diagnosis 360,” Goergen Institute for Data Science Collaborative Pilot Award Program in Health Analytics, \$ 50,000, 2016-2017.

- Co-PI: “Laboratory for Interactional Dynamics: Using Real-Time Avatars to Manipulate Social Cues,” University of Rochester Research Awards, \$ 50,000, 2015-2016.
- Contributed parts of the proposal “Modeling, Monitoring, and Optimization of Cognitive Networks,” NSF program on Communications, Circuits and Sensing Systems (CCSS), PI: Georgios B. Giannakis, \$ 370,567, 2012-2015.
- Drafted sections of the proposal “Sparsity-Aware RF Cartography for Cognitive Networks,” NSF program on Integrative, Hybrid and Complex Systems (IHCS), PI: Georgios B. Giannakis, \$ 391,707, 2010-2013.
- Prepared yearly proposals and quarterly reports for the Army Research Lab Collaborative Technology Alliance (ARL-CTA) program sponsored by the Communications and Networking Consortium, 2007-2009.

TEACHING EXPERIENCE

University of Rochester

Associate Professor, Dept. of Electrical and Computer Engineering

Rochester, New York

July 2014 - present

- *Network Science Analytics (ECE 442)*, Spring 2022. Course rating: TBD/5, instructor rating: TBD/5, enrollment: 5.
- *Introduction to Random Processes (ECE 440)*, Fall 2021. Course rating: 4.88/5, instructor rating: 5/5, enrollment: 11.
- *Network Science Analytics (ECE 442)*, Spring 2021. Course rating: 4.5/5, instructor rating: 4.83/5, enrollment: 17.
- *Introduction to Random Processes (ECE 440)*, Fall 2020. Course rating: 4.55/5, instructor rating: 4.73/5, enrollment: 26.
- *Network Science Analytics (ECE 442)*, Spring 2020. Course rating: 4.57/5, instructor rating: 4.72/5, enrollment: 20.
- *Introduction to Random Processes (ECE 440)*, Fall 2019. Course rating: 4.42/5, instructor rating: 4.58/5, enrollment: 34.
- *Network Science Analytics (ECE 442)*, Spring 2019. Course rating: 4.81/5, instructor rating: 4.94/5, enrollment: 19.
- *Introduction to Random Processes (ECE 440)*, Fall 2018. Course rating: 4.57/5, instructor rating: 4.62/5, enrollment: 58.
- *Network Science Analytics (ECE 442)*, Spring 2018. Course rating: 4.73/5, instructor rating: 4.87/5, enrollment: 20.
- *Introduction to Random Processes (ECE 440)*, Fall 2017. Course rating: 4.72/5, instructor rating: 4.83/5, enrollment: 30.
- *Network Science Analytics (ECE 442)*, Spring 2017. Course rating: 4.81/5, instructor rating: 4.90/5, enrollment: 13.
- *Introduction to Random Processes (ECE 440)*, Fall 2016. Course rating: 4.50/5, instructor rating: 4.70/5, enrollment: 47.
- *Network Science Analytics (ECE 442)*, Spring 2016. Course rating: 4.81/5, instructor rating: 4.90/5, enrollment: 15.
- *Introduction to Random Processes (ECE 440)*, Fall 2015. Course rating: 4.71/5, instructor rating: 4.71/5, enrollment: 24.
- *Network Science Analytics in the Big Data Era (ECE 492)*, Spring 2015. Enrollment: 7.
- *Introduction to Random Processes (ECE 440)*, Fall 2014. Course rating: 4.65/5, instructor rating: 4.71/5, enrollment: 23.

Universidad de la República

Invited Lecturer, Dept. of Mathematics and Statistics

Montevideo, Uruguay

February 2021

- Instructor for *Machine Learning for Graph Data*, February 1-5, 2021 (~ 45 students).

IEEE SPS/EURASIP Summer School on Network- and Data-driven Learning

General co-Chair and Lecturer

Lecce, Italy

May 2019

- Instructor for *Statistical Analysis of Network Data*, May 20, 2019 (~ 25 students).

Universidad de la República Montevideo, Uruguay
Invited Lecturer, Dept. of Mathematics and Statistics June 2016

- Instructor for *Statistical Analysis of Network Data*, June 16-24, 2016 (~ 20 students).

University of Minnesota Twin Cities, Minnesota
Invited Lecturer, Digital Technology Center June 2015 - July 2015

- Instructor for *Statistical Analysis of Network Data*, June 24-July 15, 2015 (~ 20 students).

University of Minnesota Twin Cities, Minnesota
Research Assistant, Dept. of Electrical and Computer Engineering August 2006 - December 2012

- Coordinator of *Communications Seminar (EE 8500)*, Fall 2009, 2010 and 2012.
- Guest lecturer for *Adaptive Digital Signal Processing (EE 5542)*, Spring 2007 (~ 20 students).

Universidad de la República Montevideo, Uruguay
Instructor, Dept. of Electrical Engineering March 2005 - July 2006

- Instructor for *Circuits and Electrical Machines I*, Chemical and Industrial Engineering (~ 200 students).
- Instructor for *Linear Systems II*, Electrical Engineering (~ 100 students).

Universidad de la República Montevideo, Uruguay
Teaching Assistant, Dept. of Electrical Engineering February 2003 - July 2006

- Office hours, grading, and recitations for *Linear Systems I and II* (~ 100 students).

CURRENT DOCTORAL STUDENTS

Yang Li University of Rochester
Ph. D. in Electrical Engineering January 2017 - 2022 (expected)
Research topic: “Graph Signal Processing for Neuroimaging Data Analysis”

- Best student paper award at the 2019 IEEE Intl. Conference on Acoustics, Speech and Signal Processing.

Chang Ye University of Rochester
Ph. D. in Electrical Engineering January 2017 - 2022 (expected)
Research topic: “Deconvolution and Inverse Problems on Graphs with Applications to Source Localization”

- NSF student travel grant to attend the 2019 IEEE Data Science Workshop.

Max Wasserman University of Rochester
Ph. D. in Computer Science August 2018 - 2023 (expected)
Research topic: “Learning to identify graph structure”

- NSF research traineeship in data-enabled science and engineering class of 2018.

Seyed Saman Saboksayr University of Rochester
Ph. D. in Electrical Engineering August 2018 - 2023 (expected)
Research topic: “TBD”

Bernardo Marengo Universidad de la República
Ph. D. in Mathematics December 2020 - 2024 (expected)

Co-advised with Prof. Paola Bermolen

Research topic: “Online graph representation learning for dynamic network data”

- Best student paper contest third place at the 2021 Asilomar Conference on Signals, Systems, and Computers.
- Doctoral fellowship from the Academic Commission for Graduate Studies, Universidad de la República.

PHD THESES SUPERVISED

Rasoul Shafipour

Ph. D. in Electrical Engineering

University of Rochester

August 2015 - March 2020

Research topic: “Learning Representations for Signal and Information Processing on Directed Networks”

- University of Rochester’s 2018 Donald M. and Janet C. Barnard Fellowship.
- Best student paper award at the 2018 IEEE Intl. Conference on Acoustics, Speech and Signal Processing.
- NSF student travel grant to attend the 2016 Graph Signal Processing Workshop.

DIVERSITY, EQUITY, AND INCLUSION

- Mentor at the virtual Khipu Mentoring Event, 2021.
- Moderator of the *Hispanic Heritage Month Panel* organized by the Diversity, Equity, and Inclusion Committee of the Dept. of Electrical and Computer Engineering, University of Rochester, 2021.
- Inaugural faculty advisor for the University of Rochester’s Society for Advancing Chicanos/Hispanics & Native Americans in Science (SACNAS) Chapter since July 2020.
- Judge for the Engineering Science Symposium Poster Competition, 2019 Society of Hispanic Professional Engineers (SHPE) National Convention.
- Reviewer for the 2019 Great Minds in STEM (GMiS) Research Poster Competition.
- Reviewer of applications submitted to KHIPU – Latin American Meeting in Artificial Intelligence, 2019.

PLENARY AND KEYNOTE LECTURES

Digraph signal processing: Orthonormal transforms and network inference

- Graph Signal Processing Workshop, University of Minnesota, Minneapolis, MN June 6, 2019

Network topology inference from spectral templates

- EURASIP Statistics, Optimization, and Signal Processing Workshop, Rome, Italy September 7, 2018

TUTORIAL LECTURES

Connecting the Dots: Identifying Network Structure of Complex Data via Graph Signal Processing

- IEEE Statistical Signal Processing Workshop (SSP) July 12, 2021
- IEEE Workshop on Comp. Advances in Multi-Sensor Adaptive Processing (CAMSAP) December 15, 2019
- European Signal Processing Conference (EUSIPCO) September 2, 2019
- Bellairs Workshop on Machine Learning and Signal Processing for Data on Graphs February 10, 2019

Graph Signal Processing: Fundamentals and Applications to Diffusion Processes

- IEEE Global Conference on Signal and Information Processing (GlobalSIP) December 6, 2016
- IEEE Sensor Array and Multichannel Signal Processing (SAM) Workshop July 10, 2016

Signal Processing Tools for Big Network Data Analytics

- IEEE Workshop on Signal Processing Advances in Wireless Communications (SPAWC) July 3, 2016
- Dept. of Electrical Engineering, Universidad de la República, Montevideo, Uruguay December 13, 2015
- European Signal Processing Conference (EUSIPCO) August 31, 2015
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) April 19, 2015

Signal Processing for Big Data

- European Signal Processing Conference (EUSIPCO) September 1, 2014
- IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP) May 5, 2014

Cartography for Cognitive Networks

- IEEE Global Communications Conference (GLOBECOM) December 13, 2013
- IEEE International Conference on Communications (ICC) June 9, 2013

SELECTED INVITED TALKS AND SEMINARS

Network streams, embeddings, and topology learning

- McGill Bellairs Research Institute, Holetown, Barbados December 15, 2021
- Dept. of Electrical and Computer Engineering, Rice University, Houston, NY October 27, 2021

Accelerated graph learning from smooth signals

- HDR-TRIPODS PI Meeting, National Science Foundation, Alexandria, VA December 7, 2021
- Intl. Balkan Conf. on Comms. and Networking, Novi Sad, Serbia September 21, 2021

Online graph learning from streaming signals

- Dept. of Electrical, Computer, and Systems Eng., Rensselaer Polytechnic Institute, Troy, NY March 10, 2021

Digraph signal processing: Orthonormal transforms and network inference

- Intl. Conf. on Signal Processing and Comms., Indian Institute of Science, Bangalore, India July 20, 2020
- Dept. of Electrical and Computer Engineering, Stony Brook University, Stony Brook, NY February 18, 2020
- McGill Bellairs Research Institute, Holetown, Barbados February 11, 2019

Graph signal processing: Foundational advances for learning from network data

- Western New York Image and Signal Processing Workshop, Rochester, NY October 4, 2019
- Open Data Science Conference (ODSC) Europe, London, United Kingdom September 21, 2018

Network topology inference from spectral templates

- Institute of Advanced Computational Science, Stony Brook University, Stony Brook, NY February 17, 2020
- Dept. of Electrical, Computer and Energy Engineering, University of Colorado, Boulder, CO October 28, 2019
- Gleason College of Engineering, Rochester Institute of Technology, Rochester, NY March 23, 2018
- Electrical Engineering and Computer Science Dept., Syracuse University, Syracuse, NY January 31, 2018
- Dept. of Electrical Engineering, Universidad de la República, Montevideo, Uruguay December 19, 2017
- Dept. of Electrical Engineering, University of Texas at Arlington, Arlington, TX September 29, 2017
- Modeling and Optimization: Theory and Applications, Lehigh University, Bethlehem, PA August 18, 2016

Network topology inference from non-stationary graph signals

- Graph Signal Processing Workshop, Carnegie Mellon University, Pittsburgh, PA June 2, 2017

Blind identification of graph filters

- Graph Signal Processing Meeting, McGill Bellairs Research Institute, Holetown, Barbados February 12, 2017
- Graph Signal Processing Workshop, University of Pennsylvania, Philadelphia, PA May 26, 2016
- Gleason College of Engineering, Rochester Institute of Technology, Rochester, NY October 9, 2015
- Information Initiative at Duke, Duke University, Durham, NC August 12, 2015

Sparsity and low rank for social data analytics and networking

- School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, AZ April 15, 2014
- Dept. of Computer and Electrical Engineering Florida Atlantic University, Boca Raton, FL March 31, 2014
- Dept. of Electrical and Computer Engineering, University of Rochester, Rochester, NY March 28, 2014
- Electrical Engineering Dept., University of Southern California, Los Angeles, CA March 24, 2014
- Dept. of Electrical and Computer Engineering, University of Pittsburgh, Pittsburgh, PA March 19, 2014
- Dept. of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT March 3, 2014
- Dept. of Electrical and Computer Engineering, University of Iowa, Iowa City, IA February 27, 2014
- Dept. of Electrical and Computer Engineering, University of Virginia, Charlottesville, VA February 24, 2014
- Dept. of Electrical and Computer Engineering, New Jersey Institute of Tech., Newark, NJ February 17, 2014
- Institute for CyberScience, The Pennsylvania State University, University Park, PA May 20, 2013
- Dept. of Electrical and Computer Engineering, Duke University, Durham, NC May 9, 2013
- Dept. of Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD Feb. 12, 2013

Dynamic structural equation models for tracking cascades over social networks

- Information Theory and Applications Workshop, San Diego, CA February 12, 2014

Sparsity control for robustness and social data analysis

- Dept. of Electrical and Systems Engineering, University of Pennsylvania, Philadelphia, PA May 9, 2013
- Dept. of Electrical Engineering, Universidad de la República, Montevideo, Uruguay December 23, 2011

Spline-based spectrum cartography for cognitive radios

- Digital Technology Center, University of Minnesota, Minneapolis, MN

December 18, 2009

PANELS AND COMMUNITY OUTREACH TALKS

- *Hispanic Heritage Month Panel* organized by the Diversity, Equity, and Inclusion Committee of the Dept. of Electrical and Computer Engineering, University of Rochester, Rochester, NY, September 28, 2021.
- *NSF Graduate Research Fellowship Program Panel* organized by Arts, Sciences and Engineering, University of Rochester, Rochester, NY, September 15, 2021.
- *NSF Graduate Research Fellowship Program Panel* organized by Arts, Sciences and Engineering, University of Rochester, Rochester, NY, September 18, 2020.
- *Hajim NSF CAREER Bootcamp* organized by the Hajim School of Engineering and Applied Sciences, University of Rochester, Rochester, NY, June 7, 2018.
- *Discussions on Hispanic and Latino Culture*, organized by the Spencerport High School, Spencerport, NY, December 7, 2017.
- *Careers in STEM*, organized by the Hispanic Heritage Committee of Rochester, Rochester, NY, October 21, 2016.
- *New Faculty Orientation and Welcome* organized by Arts, Sciences and Engineering, University of Rochester, Rochester, NY, August 20, 2015.
- *Career Transitioning into Academia* organized by the Postdoctoral Association, University of Rochester, Rochester, NY, February 19, 2015.

PROFESSIONAL AFFILIATIONS AND SERVICES

- NSF panelist in 2017-2020 and 2022 (CISE, ENG, MPS, GRFP and SBIR).
- Elected member of the IEEE Signal Processing Theory and Methods Technical Committee since January 2016. Re-elected for a second term in December 2018. Chair of the Publications subcommittee.
- Elected member of the IEEE Sensor Array and Multichannel Technical Committee since January 2016. Re-elected for a second term in December 2018.
- Affiliate member of the IEEE Signal Processing Society Big Data Special Interest Group, June 2015-2017.
- Reviewer for IEEE Transactions on Signal Processing, IEEE Journal of Selected Topics in Signal Processing, IEEE Signal Processing Magazine, IEEE Open Journal of Signal Processing, IEEE Signal Processing Letters, IEEE Transactions on Signal and Information Processing over Networks, Elsevier Signal Processing, EURASIP Journal on Advances in Signal Processing, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technologies, IEEE Transactions on Image Processing, ACM/IEEE Transactions on Networking, IEEE Transactions on Network Science and Engineering, IEEE Transactions on Automatic Control, IEEE Transactions on Aerospace and Electronic Systems, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Information Theory, Entropy, Applied Network Science, Proceedings of the Royal Society A, and PLOS ONE.
- Regular reviewer of conference papers submitted to ICASSP, GlobalSIP, EUSIPCO, ISIT, ICC, GLOBECOM, and Workshops technically sponsored by the IEEE Signal Processing Society.
- Reviewer of book proposals submitted to the Cambridge University Press, CRC Press, and Springer Nature.
- Faculty advisor for the University of Rochester's Society for Advancing Chicanos/Hispanics & Native Americans in Science (SACNAS) Chapter since July 2020.
- Judge for the Engineering Science Symposium Poster Competition, 2019 Society of Hispanic Professional Engineers (SHPE) National Convention.
- Reviewer for the 2019 Great Minds in STEM (GMiS) Research Poster Competition.
- Elected member of the Uruguayan National System of Researchers since November 2010.
- EURASIP member.
- IEEE Signal Processing Society and IEEE Communications Society member.
- IEEE Senior member since April 2017.
- University of Minnesota Alumni Association (UMAA) member.

EDITORIAL BOARD DUTIES

IEEE Transactions on Signal and Information Processing over Networks

- Associate Editor August 2018 - present
- Lead Guest Editor for the special issue *Network Topology Inference* 2019

IEEE Transactions on Signal Processing

- Senior Area Editor 2020 - present
- Associate Editor 2015 - 2019
- Recipient of the IEEE Signal Processing Society Outstanding Editorial Board Award 2019

IEEE Signal Processing Repository (SigPort)

- Editorial Board member 2018 - 2020

EURASIP Journal on Advances in Signal Processing

- Associate Editor 2012 - 2018
- Best Paper Award Committee member 2018, 2019
- Guest Editor for the special issue *Signal Processing over Higher Order Networks* 2021
- Guest Editor for the special issue *Optimization, Learning, and Adaptation over Networks* 2018
- Lead Guest Editor for the special issue *Signal Processing for Big Data* 2016

EURASIP Journal on Information Security

- Guest Editor for the special issue *Signal Processing for Network Forensics and Security* 2017

TECHNICAL PROGRAM COMMITTEE MEMBERSHIPS

- 2021 IEEE Statistical Signal Processing Workshop, Rio de Janeiro, Brazil.
- 2020 European Signal Processing Conference, Amsterdam, The Netherlands.
- 2020 IEEE Sensor Array and Multichannel Signal Processing Workshop, Hangzhou, China.
- 2019 IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing, Guadeloupe, West Indies.
- 2019 IEEE Global Conference on Signal and Information Processing, Ottawa, Canada.
- 2019 European Signal Processing Conference, A Coruña, Spain.
- 2019 IEEE Data Science Workshop, Minneapolis, MN.
- 2018 European Signal Processing Conference “Signal Processing for Big Data” Track Chair, Rome, Italy.
- 2018 IEEE Sensor Array and Multichannel Signal Processing Workshop, Sheffield, United Kingdom.
- 2018 IEEE Statistical Signal Processing Workshop, Freiburg, Germany.
- 2017 IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing, Curaçao, Dutch Antilles.
- 2016 IEEE Sensor Array and Multichannel Signal Processing Workshop, Rio de Janeiro, Brazil.
- 2016 IEEE Statistical Signal Processing Workshop, Palma de Mallorca, Spain.
- 2015 International Joint Conference on Artificial Intelligence, Buenos Aires, Argentina.
- 2015 Iberoamerican Congress on Pattern Recognition, Montevideo, Uruguay.

ORGANIZATION OF TECHNICAL EVENTS, SEASONAL SCHOOLS AND SPECIAL SESSIONS

IEEE Statistical Signal Processing (SSP) Workshop

- Organizer of the special session *Learning from network data* 2021
- IEEE Signal Processing Society Liaison 2021

Graph Signal Processing (GSP) Workshop

- Technical Program co-Chair 2020

IEEE Data Science Workshop (DSW)

• Finance Chair	2019
IEEE SPS/EURASIP Summer School on Network- and Data-driven Learning	
• General co-Chair and Lecturer	2019
IEEE Global Conference on Signal and Information Processing (GlobalSIP)	
• General Chair of the <i>Symposium on Graph Signal Processing</i>	2018, 2019
• Technical Program Chair of the <i>Symposium on Graph Signal Processing</i>	2017
• Technical Program Chair of the <i>Symposium on Signal and Information Processing over Networks</i>	2016
Asilomar Conference on Signals, Systems, and Computers	
• Organizer of the special session <i>Learning with Brain Connectomes</i>	2021
• Organizer of the special session <i>Graph Signal Processing</i>	2018
• Organizer of the special session <i>Sketching and Optimizing for Big Data</i>	2016
• Organizer of the special session <i>Signal Processing for Smart Grids</i>	2014
IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP)	
• Chair of the Student Paper Award committee	2019
• Organizer of the special session <i>Information Processing for Big Data Analytics</i>	2017
IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)	
• Organizer of the special session <i>Social Nets: Learning and Optimization</i>	2014

UNIVERSITY SERVICE

Department of Electrical and Computer Engineering, University of Rochester

• Graduate Committee chair	2020 - present
• Graduate Admissions Committee member	2014 - 2020
• Faculty Search Committee member	2016, 2017
• Undergraduate advisor for the Electrical and Computer Engineering class of 2020	2016 - 2020
• M. Sc. in Electrical Engineering student advisor	2016 - present
• Dept. of Electrical and Computer Engineering Colloquia Series coordinator	2016 - 2020
• M. Sc. in Electrical Engineering Plan B Exam Committee member	2015 - present

University Council on Graduate Education, University of Rochester

• Representative from Electrical and Computer Engineering	2020 - present
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University Research Awards, University of Rochester

• Reviewer of proposals submitted to the annual seed funding competition	2021
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Del Monte Institute for Neuroscience, University of Rochester

• Reviewer of proposals submitted to the annual pilot project competition	2019
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Goergen Institute for Data Science, University of Rochester

• Faculty Search Committee member	2021
• M. Sc. in Data Science student advisor	2017 - present
• M. Sc. in Data Science Admissions Committee member	2017, 2019 - present

Undergraduate Research Exposition, University of Rochester

• Judge for the Engineering Area	April 2017
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THESIS COMMITTEE MEMBERSHIPS

Raiyan Baten

Ph. D. in Electrical Engineering University of Rochester
2022 (expected)

Thesis: "Study of Network Dynamics in Creativity-centric Complex Systems"

Advisor: Prof. Ehsan Hoque

Li Ding

Ph. D. in Electrical Engineering University of Rochester
December 2021

Thesis: "Symbiotic Registration and Deep Learning for Retinal Image Analysis"

Advisor: Prof. Gaurav Sharma

Hanlin Tang

Ph. D. in Computer Science

University of Rochester

July 2021

Thesis: “Communication Efficient Machine Learning Algorithms towards Large Scale Parallel Training”

Advisor: Prof. Ji Liu

Carlos Rodríguez

Ph. D. in Electrical Engineering

University of Rochester

July 2021

Thesis: “Gamut and Color Control for Multiprimary Displays: Theory and Applications”

Advisor: Prof. Gaurav Sharma

Surendra Hazarie

Ph. D. in Physics

University of Rochester

June 2021

Thesis: “Human Mobility in Physical and Virtual Environments: Understanding How We Choose to Move”

Advisor: Prof. Gourab Ghoshal

Jiani Liu

Ph. D.

Delft University of Technology

June 2021

Thesis: “Graph Filter Designs and Implementations”

Advisor: Prof. Geert Leus

Shupeng Gui

Ph. D. in Computer Science

University of Rochester

June 2021

Thesis: “Neural Embedding: Compact, Robust, and Non-Euclidean Solutions”

Advisor: Prof. Ji Liu

Fabiana Richter

Ph. D. in Geosciences

University of Rochester

December 2020

Thesis: “Interplay between Tectonics and Climate on the Tibetan Plateau Margins during the Late Cenozoic”

Advisors: Prof. Carmala Garziona

Richard Lange

Ph. D. in Brain and Cognitive Science/Computer Science

University of Rochester

August 2020

Thesis: “Signatures of Approximate Bayesian Inference in Early Visual Perception”

Advisors: Profs. Ralf Haefner and Henry Kautz

Utku Demir

Ph. D. in Electrical Engineering

University of Rochester

August 2020

Thesis: “Automatic Creation and Maintenance of Dynamic WiFi Direct Networks”

Advisor: Prof. Wendi Heinzelman

Aaron Michalko

Ph. D. in Optics

University of Rochester

August 2020

Thesis: “Advances in Optical Surface Metrology by Phase and Prescription Retrieval”

Advisor: Prof. James Fienup

Yuchuan Zhuang

Ph. D. in Electrical Engineering

University of Rochester

August 2020

Thesis: “Integration of Structural and Functional Connectivity of Brain, and Clinical Applications”

Advisor: Prof. Jianhui Zhong

Haichuan Yang

Ph. D. in Computer Science

University of Rochester

July 2020

Thesis: “Sparse Learning for Model Optimization”

Advisor: Prof. Ji Liu

Nadir Adam

Ph. D. in Electrical Engineering

University of Rochester

July 2020

Thesis: “Performance Analysis and Optimization of Infrastructure, Aerial and Multi-Hop Ad-Hoc Networks”

Advisor: Prof. Wendi Heinzelman

Fernando Gama

University of Pennsylvania

- Ph. D. in Electrical and Systems Engineering June 2020
Thesis: “Graph Neural Networks”
Advisor: Prof. Alejandro Ribeiro
- Fernando Zvietcovich** University of Rochester
 Ph. D. in Electrical Engineering December 2019
Thesis: “Dynamic Optical Coherence Elastography”
Advisors: Profs. Kevin Parker and Jannick Rolland
- Scott Paine** University of Rochester
 Ph. D. in Optics August 2019
Thesis: “Expanding the Capture Range of Image-Based Wavefront Sensing Problems”
Advisor: Prof. James Fienup
- Xiangru Lian** University of Rochester
 Ph. D. in Computer Science August 2019
Thesis: “Large Scale Optimization for Deep Learning”
Advisor: Prof. Ji Liu
- Nicolas Riquelme** University of Rochester
 Ph. D. in Economics May 2019
Thesis: “Essays on Mechanism Design and Multiple Privately Informed Principals”
Advisors: Profs. Paulo Barelli and Srihari Govindan
- Adora M. D’Souza** University of Rochester
 Ph. D. in Electrical Engineering March 2019
Thesis: “Directed Network Recovery from Large Systems with Applications in Functional MRI”
Advisor: Prof. Axel Wismüller
- Iftekhar Tanveer** University of Rochester
 Ph. D. in Electrical Engineering October 2018
Thesis: “Behavioral Prediction using Data-Scientific Approaches: A Case Study on Public Speaking”
Advisor: Prof. Ehsan Hoque
- Quanzeng You** University of Rochester
 Ph. D. in Computer Science August 2017
Thesis: “Sentiment and Emotion Analysis for Visual and Multimedia Content: Methodologies and Applications”
Advisor: Prof. Jiebo Luo
- Swetha George** University of Rochester
 Ph. D. in Electrical Engineering May 2017
Thesis: “Sub-Wavelength Imaging Methodology for Medical Ultrasound Applications”
Advisor: Prof. Zeljko Ignjatovic
- Colin Funai** University of Rochester
 Ph. D. in Electrical Engineering April 2017
Thesis: “Enabling and Optimizing Resource Constrained Ad-Hoc Mobile Clouds”
Advisor: Prof. Wendi Heinzelman
- Arian Shoari** University of Rochester
 Ph. D. in Electrical Engineering October 2016
Thesis: “Localization of Non-Cooperative Target with Distributed Binary Observations”
Advisors: Profs. Alireza Seyedi and Mark Bocko
- Jonathan Downing** University of Rochester
 M. Sc. in Electrical Engineering October 2016
Thesis: “Joint Source Separation and Dereverberation of Single-Channel Drum Kit Recordings”
Advisor: Prof. Zhiyao Duan
- Walter Checefsky** University of Rochester
 M. Sc. in Electrical Engineering February 2016
Thesis: “Detecting Clinically Isolated Syndrome (CIS) Using Brain Networks”

Advisor: Prof. Axel Wismüller

Marcelo Fiori

Ph. D. in Electrical Engineering

Universidad de la República

May 2015

Thesis: “Graph Inference and Graph Matching Problems: Theory and Algorithms”

Advisors: Profs. Guillermo Sapiro and Pablo Musé

Chantel Gaudet

M. Sc. in Chemical Engineering

University of Rochester

April 2015

Thesis: “Characterizing and Scaling Stochastic Network Dynamics”

Advisor: Prof. Eldred H. Chimowitz

PERSONAL

- Date of birth: April 14th, 1982.
- Citizenship: Uruguay (US Permanent Resident)
- Languages: Fluent in Spanish and English, conversational in Portuguese.
- Sports: Member of the Uruguayan national junior tennis team, competing in more than 15 international tournaments held all over South America in 1996-2000.
- Other interests: International travel, music, professional sports.