LUIZ F. O. CHAMON

luiz.chamon@polytechnique.edu luizchamon.com

PUBLICATION LIST

Total number: 65 Citations: 1937 h-index: 22 Google Scholar 0000-0001-7731-6650

(**Note:** highlighted publications are marked with a ★)

Preprints

[1] **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Trust but verify: Assigning prediction credibility by counterfactual constrained learning, 2020. URL: https://arxiv.org/abs/2011.12344.

[2] **L. F. O. Chamon** and C. G. Lopes. Combination of LMS adaptive filters with coefficients feedback, 2016. URL: https://arxiv.org/abs/1608.03248.

Patents

[1] D. Lamb, **L. F. O. Chamon**, V. H. Nascimento, and A. Spirer. Sparse cascaded-integrator-comb filters, 2019. URL: https://patents.google.com/patent/US10367477B2. US10367477B2.

Journals

★ [1] M. Calvo-Fullana, S. Paternain, **L. F. O. Chamon**, and A. Ribeiro. State augmented constrained reinforcement learning: Overcoming the limitations of learning with rewards. *IEEE Trans. on Autom. Control.*, 69[7]:4275–4290, 2024. URL: https://arxiv.org/abs/2102.11941.

[2] C. G. Lopes, V. H. Nascimento, and **L. F. O. Chamon**. Distributed universal adaptive networks. *IEEE Trans. on Signal Process.*, 71:1817–1832, 2023. DOI: 10.1109/TSP.2023.3275812. URL: https://arxiv.org/abs/2307.05746.

[3] S. Paternain, M. Calvo-Fullana, **L. F. O. Chamon**, and A. Ribeiro. Safe policies for reinforcement learning via primal-dual methods. *IEEE Trans. on Autom. Control.*, 68[3]:1321–1336, 2023. DOI: 10.1109/TAC.2022.3152724. URL: https://arxiv.org/abs/1911.09101.

★ [4] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. Transferability properties of graph neural networks. *IEEE Trans. on Signal Process.*, 71:3474–3489, 2023. DOI: 10.1109/TSP.2023.3297848. URL: https://arxiv.org/abs/2112.04629.

★ [5] **L. F. O. Chamon**, S. Paternain, M. Calvo-Fullana, and A. Ribeiro. Constrained learning with non-convex losses. *IEEE Trans. on Inf. Theory*, 69[3]:1739–1760, 2023. DOI: 10.1109/TIT.2022.3187948. URL: https://arxiv.org/abs/2103.05134.

[6] **L. F. O. Chamon**, A. Amice, and A. Ribeiro. Approximately supermodular scheduling subject to matroid constraints. *IEEE Trans. on Autom. Control.*, 67[3]:1384–1396, 2022. DOI: 10.1109/TAC.2021.3071024. URL: https://arxiv.org/abs/2003.08841.

[7] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. Graphon signal processing. *IEEE Trans. on Signal Process.*, 69:4961–4976, 2021. DOI: 10.1109/TSP.2021.3106857. URL: https://arxiv.org/abs/2003.05030.

★ [8] **L. F. O. Chamon**, G. J. Pappas, and A. Ribeiro. Approximate supermodularity of Kalman filter sensor selection. *IEEE Trans. on Autom. Control.*, 66[1]:49–63, 2021. DOI: 10.1109/TAC.2020.2973774. URL: https://arxiv.org/abs/1912.03799.

[9] M. Peifer, **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Sparse multiresolution representations with adaptive kernels. *IEEE Trans. on Signal Process.*,

68[1]:2031–2044, 2020. DOI: 10.1109/TSP.2020.2976577. URL: https://arxiv.org/abs/1905.02797.

[10] **L. F. O. Chamon**, Y. C. Eldar, and A. Ribeiro. Functional nonlinear sparse models. *IEEE Trans. on Signal Process.*, 68[1]:2449–2463, 2020. DOI: 10.1109/TSP.2020.2982834. URL: https://arxiv.org/abs/1811.00577.

★ [11] M. Eisen, C. Zhang, **L. F. O. Chamon**, D. D. Lee, and A. Ribeiro. Learning optimal resource allocations in wireless systems. *IEEE Trans. on Signal Process.*, 67[10]:2775–2790, 2019. DOI: 10.1109/TSP.2019.2908906. URL: https://arxiv.org/abs/1807.08088. **[Top 50 most accessed articles in IEEE TSP: May, July, Sept, Oct 2019]**.

[12] **L. F. O. Chamon** and A. Ribeiro. Greedy sampling of graph signals. *IEEE Trans. on Signal Process.*, 66[1]:34–47, 2018. DOI: 10.1109/TSP.2017.2755586. URL: https://arxiv.org/abs/1704.01223.

[13] D. Lamb, **L. F. O. Chamon**, and V. H. Nascimento. An efficient filtering structure for spline interpolation and decimation. *IET Electronics Letters*, 52[1]:39–41, 2016. DOI: 10.1049/el.2015.1957.

[14] H. F. Ferro, **L. F. O. Chamon**, and C. G. Lopes. FIR-IIR adaptive filters hybrid combination. *IET Electronics Letters*, 50[7]:501–503, 2014. DOI: 10.1049/el.2014.0248.

ML & Systems Conferences

[1] V. Moro and **L. F. O. Chamon**. Solving differential equations with constrained learning. In *International Conference on Learning Representations (ICLR)*, 2025. URL: https://arxiv.org/abs/2410.22796.

[2] J. Elenter, **L. F. O. Chamon**, and A. Ribeiro. Near-optimal solutions of constrained learning problems. In *International Conference on Learning Representations (ICLR)*, 2024. URL: https://arxiv.org/abs/2403.11844.

★ [3] **L. F. O. Chamon**, M. R. K. Jaghargh, and A. Korba. Constrained sampling with primal-dual Langevin Monte Carlo. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2024. URL: https://arxiv.org/abs/2411.00568.

[4] J. Cervino, **L. F. O. Chamon**, B. D. Haeffele, R. Vidal, and A. Ribeiro. Learning globally smooth functions on manifolds. In *International Conference on Machine Learning (ICML)*, 2023. URL: https://arxiv.org/abs/2210.00301.

[5] I. Hounie, A. Ribeiro, and **L. F. O. Chamon**. Resilient constrained learning. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2023. URL: https://arxiv.org/abs/2306.02426.

[6] I. Hounie, **L. F. O. Chamon**, and A. Ribeiro. Automatic data augmentation via invariance-constrained learning. In *International Conference on Machine Learning (ICML)*, 2023. URL: https://arxiv.org/abs/2209.15031.

[7] A. Robey, **L. F. O. Chamon**, G. J. Pappas, and H. Hassani. Probabilistically robust learning: Balancing average- and worst-case performance. In *International Conference on Machine Learning (ICML)*, 2022. URL: https://arxiv.org/abs/2202.01136. **[spotlight]**.

★ [8] A. Robey*, **L. F. O. Chamon***, G. J. Pappas, H. Hassani, and A. Ribeiro. Adversarial robustness with semi-infinite constrained learning. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2021. URL: https://arxiv.org/abs/2110.15767. (* equal contribution).

★ [9] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. Graphon neural networks and the transferability of graph neural networks. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2020. URL: https://arxiv.org/abs/2006.03548.

★ [10] **L. F. O. Chamon** and A. Ribeiro. Probably approximately correct constrained learning. In *Conference on Neural Information Processing Systems (NeurIPS)*, 2020. URL: https://arxiv.org/abs/2006.05487.

★ [11] S. Paternain, **L. F. O. Chamon**, M. Calvo-Fullana, and A. Ribeiro. Constrained reinforcement learning has zero duality gap. In *Conference on Neural Information Processing Systems (NeurIPS)*, pages 7555–7565, 2019. URL: https://arxiv.org/abs/1910.13393.

[12] B. Arzani, S. Ciraci, **L. F. O. Chamon**, Y. Zhu, H. Liu, J. Padhye, B. T. Loo, and G. Outhred. 007: Democratically finding the cause of packet drops. In *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, pages 419–435, 2018. URL: https://arxiv.org/abs/1802.07222.

[13] B. Arzani, S. Ciraci, **L. F. O. Chamon**, Y. Zhu, H. Liu, J. Padhye, G. Outhred, and B. T. Loo. Closing the network diagnostics gap with Vigil. In *SIGCOMM (Poster)*, pages 40–42, 2017.

[14] **L. F. O. Chamon** and A. Ribeiro. Approximate supermodularity bounds for experimental design. In *Conference on Neural Information Processing Systems (NeurIPS)*, pages 5403–5412, 2017. URL: https://arxiv.org/abs/1711.01501.

Control Conferences

[1] B. A. Angélico, **L. F. O. Chamon**, S. Paternain, A. Ribeiro, and G. J. Pappas. Source seeking in unknown environments with convex obstacles. In *American Control Conference*, 2021. URL: https://arxiv.org/abs/1909.07496.

[2] M. Calvo-Fullana, **L. F. O. Chamon**, and S. Paternain. Towards safe continuing task reinforcement learning. In *American Control Conference*, 2021. URL: https://arxiv.org/abs/2102.12585.

[3] **L. F. O. Chamon**, A. Amice, S. Paternain, and A. Ribeiro. Resilient control: Compromising to adapt. In *IEEE Control and Decision Conference*, 2020. URL: https://arxiv.org/abs/2004.03726.

[4] **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Counterfactual programming for optimal control. In *Learning for Dynamics & Control (L4DC)*, 2020.

[5] A. Tsiamis, D. S. Kalogerias, **L. F. O. Chamon**, A. Ribeiro, and G. J. Pappas. Risk-constrained linear-quadratic regulators. In *IEEE Control and Decision Conference*, 2020. URL: https://arxiv.org/abs/2004.04685.

[6] S. Paternain, M. Calvo-Fullana, **L. F. O. Chamon**, and A. Ribeiro. Learning safe policies via primal-dual methods. In *IEEE Control and Decision Conference*, pages 6491–6497, 2019.

[7] V. L. Silva, **L. F. O. Chamon**, and A. Ribeiro. Model predictive selection: A receding horizon scheme for actuator selection. In *American Control Conference*, pages 347–353, 2019.

[8] **L. F. O. Chamon**, A. Amice, and A. Ribeiro. Matroid-constrained approximately supermodular optimization for near-optimal actuator scheduling. In *IEEE Control and Decision Conference*, pages 3391–3398, 2019.

[9] **L. F. O. Chamon**, G. Pappas, and A. Ribeiro. The mean square error in Kalman filtering sensor selection is approximately supermodular. In *IEEE Control and Decision Conference*, pages 343–350, 2017.

Signal Processing Conferences

[1] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. Transferable graph neural networks on large-scale stochastic graphs. In *Asilomar Conference on Signals, Systems and Computers*, 2021.

[2] D. S. Kalogerias, **L. F. O. Chamon**, G. J. Pappas, and A. Ribeiro. Better safe than sorry: Risk-aware nonlinear Bayesian estimation. In *IEEE International*

Conference in Acoustic, Speech, and Signal Processing (ICASSP), 2020. URL: https://arxiv.org/abs/1912.02933. **[Best paper award]**.

[3] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. Graphon filters: Signal processing in very large graphs. In *European Signal Processing Conference (EUSIPCO)*, pages 1050–1054, 2020.

[4] L. Ruiz, **L. F. O. Chamon**, and A. Ribeiro. The graphon Fourier transform. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, 2020. URL: https://arxiv.org/abs/1910.10195.

[5] **L. F. O. Chamon**, S. Paternain, M. Calvo-Fullana, and A. Ribeiro. The empirical duality gap of constrained statistical learning. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, 2020. URL: https://arxiv.org/abs/2002.05183. **[Best student paper award]**.

[6] M. Eisen, C. Zhang, **L. F. O. Chamon**, D. D. Lee, and A. Ribeiro. Dual domain learning of optimal resource allocations in wireless systems. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 4729–4733, 2019.

[7] M. Peifer, **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Sparse learning of parsimonious reproducing kernel Hilbert space models. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 3292–3296, 2019.

[8] **L. F. O. Chamon**, Y. C. Eldar, and A. Ribeiro. Sparse recovery over nonlinear dictionaries. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 4878–4882, 2019.

[9] **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Learning Gaussian processes with Bayesian posterior optimization. In *Asilomar Conference on Signals, Systems and Computers*, pages 482–486, 2019.

[10] M. Eisen, C. Zhang, **L. F. O. Chamon**, D. D. Lee, and A. Ribeiro. Online deep learning in wireless communication systems. In *Asilomar Conference on Signals, Systems and Computers*, pages 1289–1293, 2018.

[11] M. Peifer, **L. F. O. Chamon**, S. Paternain, and A. Ribeiro. Locally adaptive kernel estimation using sparse functional programming. In *Asilomar Conference on Signals, Systems and Computers*, pages 2022–2026, 2018.

[12] **L. F. O. Chamon**, Y. C. Eldar, and A. Ribeiro. Strong duality of sparse functional optimization. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 4739–4743, 2018.

[13] **L. F. O. Chamon** and A. Ribeiro. Finite-precision effects on graph filters. In *IEEE Global Conference on Signal and Information Processing (GlobalSip)*, pages 603–607, 2017.

[14] **L. F. O. Chamon** and A. Ribeiro. Universal bounds for the sampling of graph signals. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 3899–3903, 2017.

[15] **L. F. O. Chamon** and A. Ribeiro. Near-optimality of greedy set selection in the sampling of graph signals. In *IEEE Global Conference on Signal and Information Processing (GlobalSip)*, pages 1265–1269, 2016.

[16] C. G. Lopes, **L. F. O. Chamon**, and V. H. Nascimento. Towards spatially universal adaptive networks. In *IEEE Global Conference on Signal and Information Processing (GlobalSip)*, pages 803–807, 2014.

[17] **L. F. O. Chamon** and C. G. Lopes. There's plenty of room at the bottom: Incremental combinations of sign-error LMS filters. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 7248–7252, 2014.

[18] **L. F. O. Chamon** and A. M. P. de Lucena. Determination of the minimum distance between symbols of the two non-orthogonal M-QAM carriers. In *Brazilian Telecommunication Symposium (SBrT)*, 2013.

[19] **L. F. O. Chamon** and C. G. Lopes. On parallel-incremental combinations of LMS filters that outperform the Affine Projection Algorithm. In *Brazilian Telecommunication Symposium (SBrT)*, 2013.

[20] **L. F. O. Chamon** and C. G. Lopes. Transient performance of an incremental combination of LMS filters. In *European Signal Processing Conference (EUSIPCO)*, pages 7298–7302, 2013.

[21] R. F. Bittencourt, **L. F. O. Chamon**, S. Futatsugui, J. I. Yanagihara, and S. N. Y. Gerges. Preliminary results on the modeling of aircraft vibroacoustic comfort. In *INTERNOISE*, 2012.

[22] **L. F. O. Chamon**, H. F. Ferro, and C. G. Lopes. A data reusage algorithm based on incremental combination of LMS filters. In *Asilomar Conference on Signals, Systems and Computers*, pages 406–410, 2012.

[23] **L. F. O. Chamon**, W. B. Lopes, and C. G. Lopes. Combination of adaptive filters with coefficients feedback. In *IEEE International Conference in Acoustic, Speech, and Signal Processing (ICASSP)*, pages 3785–3788, 2012.

[24] **L. F. O. Chamon** and C. G. Lopes. Combination of adaptive filters for relative navigation. In *European Signal Processing Conference (EUSIPCO)*, pages 1771–1775, 2011.

[25] **L. F. O. Chamon**, G. S. Quiqueto, S. R. Bistafa, and V. H. Nascimento. An SVD-based MIMO equalizer applied to the auralization of aircraft noise in a cabin simulator. In *18th International Congress on Sound and Vibration (ICSV)*, 2011.

[26] G. S. Quiqueto, **L. F. O. Chamon**, and S. R. Bistafa. Preliminary results on the development of an aircraft cabin N&V simulator. In *II SAE Brazil International Noise and Vibration Congress*, 2010.

[27] **L. F. O. Chamon**, G. S. Quiqueto, and S. R. Bistafa. The application of the Singular Value Decomposition for the decoupling of the vibratory reproduction system of an aircraft cabin simulator. In *II SAE Brazil International Noise and Vibration Congress*, 2010.