

Selected works indexed by DBLP

Frank Nielsen

2023

Books

- [1] Frank Nielsen. *A Concise and Practical Introduction to Programming Algorithms in Java*. Undergraduate Topics in Computer Science. Springer, 2009. ISBN: 978-1-84882-338-9. DOI: 10.1007/978-1-84882-339-6. URL: <https://doi.org/10.1007/978-1-84882-339-6>.
- [2] Frank Nielsen. *Introduction to HPC with MPI for Data Science*. Undergraduate Topics in Computer Science. Springer, 2016. ISBN: 978-3-319-21902-8. DOI: 10.1007/978-3-319-21903-5. URL: <https://doi.org/10.1007/978-3-319-21903-5>.
- [3] Frank Nielsen. *Visual computing: Geometry, graphics, and vision (graphics series)*. Charles River Media, Inc., 2005.

Next: Edited proceedings, journals, and conferences

Proceedings

- [4] Frédéric Barbaresco and Frank Nielsen, eds. *Geometric Structures of Statistical Physics, Information Geometry, and Learning - SPIGL'20, Les Houches, France, July 27-31*. Vol. 361. Springer, 2021. ISBN: 978-3-030-77956-6. DOI: 10.1007/978-3-030-77957-3. URL: <https://doi.org/10.1007/978-3-030-77957-3>.
- [5] Frank Nielsen, ed. *Emerging Trends in Visual Computing, LIX Fall Colloquium, ETVIC 2008, Palaiseau, France, November 18-20, 2008. Revised Invited Papers*. Vol. 5416. Lecture Notes in Computer Science. Springer, 2009. ISBN: 978-3-642-00825-2. DOI: 10.1007/978-3-642-00826-9. URL: <https://doi.org/10.1007/978-3-642-00826-9>.
- [6] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - 4th International Conference, GSI 2019, Toulouse, France, August 27-29, 2019, Proceedings*. Vol. 11712. Lecture Notes in Computer Science. Springer, 2019. ISBN: 978-3-030-26979-1. DOI: 10.1007/978-3-030-26980-7. URL: <https://doi.org/10.1007/978-3-030-26980-7>.
- [7] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - 5th International Conference, GSI 2021, Paris, France, July 21-23, 2021, Proceedings*. Vol. 12829. Lecture Notes in Computer Science. Springer, 2021. ISBN: 978-3-030-80208-0. DOI: 10.1007/978-3-030-80209-7. URL: <https://doi.org/10.1007/978-3-030-80209-7>.
- [8] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - 6th International Conference, GSI 2023, St. Malo, France, August 30 - September 1, 2023, Proceedings, Part I*. Vol. 14071. Lecture Notes in Computer Science. Springer, 2023. ISBN: 978-3-031-38270-3. DOI: 10.1007/978-3-031-38271-0. URL: <https://doi.org/10.1007/978-3-031-38271-0>.
- [9] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - 6th International Conference, GSI 2023, St. Malo, France, August 30 - September 1, 2023, Proceedings, Part II*. Vol. 14072. Lecture Notes in Computer Science. Springer, 2023. ISBN: 978-3-031-38298-7. DOI: 10.1007/978-3-031-38299-4. URL: <https://doi.org/10.1007/978-3-031-38299-4>.
- [10] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - First International Conference, GSI 2013, Paris, France, August 28-30, 2013. Proceedings*. Vol. 8085. Lecture Notes in Computer Science. Springer, 2013. ISBN: 978-3-642-40019-3. DOI: 10.1007/978-3-642-40020-9. URL: <https://doi.org/10.1007/978-3-642-40020-9>.

- [11] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - Second International Conference, GSI 2015, Palaiseau, France, October 28-30, 2015, Proceedings*. Vol. 9389. Lecture Notes in Computer Science. Springer, 2015. ISBN: 978-3-319-25039-7. DOI: 10.1007/978-3-319-25040-3. URL: <https://doi.org/10.1007/978-3-319-25040-3>.
- [12] Frank Nielsen and Frédéric Barbaresco, eds. *Geometric Science of Information - Third International Conference, GSI 2017, Paris, France, November 7-9, 2017, Proceedings*. Vol. 10589. Lecture Notes in Computer Science. Springer, 2017. ISBN: 978-3-319-68444-4. DOI: 10.1007/978-3-319-68445-1. URL: <https://doi.org/10.1007/978-3-319-68445-1>.

Journals

- [13] Ehsan Amid et al. “Optimal Transport with Tempered Exponential Measures”. In: *CoRR* abs/2309.04015 (2023). DOI: 10.48550/ARXIV.2309.04015. arXiv: 2309.04015. URL: <https://doi.org/10.48550/arXiv.2309.04015>.
- [14] Ehsan Amid et al. “The Tempered Hilbert Simplex Distance and Its Application To Non-linear Embeddings of TEMs”. In: *CoRR* abs/2311.13459 (2023). DOI: 10.48550/ARXIV.2311.13459. arXiv: 2311.13459. URL: <https://doi.org/10.48550/arXiv.2311.13459>.
- [15] Marc Arnaudon and Frank Nielsen. “Medians and means in Finsler geometry”. In: *CoRR* abs/1011.6076 (2010). arXiv: 1011.6076. URL: <http://arxiv.org/abs/1011.6076>.
- [16] Marc Arnaudon and Frank Nielsen. “On Approximating the Riemannian 1-Center”. In: *CoRR* abs/1101.4718 (2011). arXiv: 1101.4718. URL: <http://arxiv.org/abs/1101.4718>.
- [17] Marc Arnaudon and Frank Nielsen. “On approximating the Riemannian 1-center”. In: *Comput. Geom.* 46.1 (2013), pp. 93–104. DOI: 10.1016/J.COMGEO.2012.04.007. URL: <https://doi.org/10.1016/j.comgeo.2012.04.007>.
- [18] Jean-Daniel Boissonnat, Frank Nielsen, and Richard Nock. “Bregman Voronoi Diagrams”. In: *Discret. Comput. Geom.* 44.2 (2010), pp. 281–307. DOI: 10.1007/S00454-010-9256-1. URL: <https://doi.org/10.1007/s00454-010-9256-1>.
- [19] Rob Brekelmans and Frank Nielsen. “Rho-Tau Bregman Information and the Geometry of Annealing Paths”. In: *CoRR* abs/2209.07481 (2022). DOI: 10.48550/ARXIV.2209.07481. arXiv: 2209.07481. URL: <https://doi.org/10.48550/arXiv.2209.07481>.
- [20] Rob Brekelmans et al. “Annealed Importance Sampling with q-Paths”. In: *CoRR* abs/2012.07823 (2020). arXiv: 2012.07823. URL: <https://arxiv.org/abs/2012.07823>.
- [21] Rob Brekelmans et al. “Likelihood Ratio Exponential Families”. In: *CoRR* abs/2012.15480 (2020). arXiv: 2012.15480. URL: <https://arxiv.org/abs/2012.15480>.
- [22] Patrice Calégari et al. “Combinatorial optimization algorithms for radio network planning”. In: *Theor. Comput. Sci.* 263.1-2 (2001), pp. 235–245. DOI: 10.1016/S0304-3975(00)00245-0. URL: [https://doi.org/10.1016/S0304-3975\(00\)00245-0](https://doi.org/10.1016/S0304-3975(00)00245-0).

- [23] Frédéric Chyzak and Frank Nielsen. “A closed-form formula for the Kullback-Leibler divergence between Cauchy distributions”. In: *CoRR* abs/1905.10965 (2019). arXiv: 1905.10965. URL: <http://arxiv.org/abs/1905.10965>.
- [24] Nicolas Dupin and Frank Nielsen. “Partial k-means to avoid outliers, mathematical programming formulations, complexity results”. In: *CoRR* abs/2302.05644 (2023). DOI: 10.48550/ARXIV.2302.05644. arXiv: 2302.05644. URL: <https://doi.org/10.48550/arXiv.2302.05644>.
- [25] Nicolas Dupin, Frank Nielsen, and El-Ghazali Talbi. “Planar p-center problems are solvable in polynomial time when clustering a Pareto Front”. In: *CoRR* abs/1908.09648 (2019). arXiv: 1908.09648. URL: <http://arxiv.org/abs/1908.09648>.
- [26] Alon Efrat et al. “Dynamic data structures for fat objects and their applications”. In: *Comput. Geom.* 15.4 (2000), pp. 215–227. DOI: 10.1016/S0925-7721(99)00059-0. URL: [https://doi.org/10.1016/S0925-7721\(99\)00059-0](https://doi.org/10.1016/S0925-7721(99)00059-0).
- [27] Pascal Mattia Esser and Frank Nielsen. “On the Influence of Enforcing Model Identifiability on Learning dynamics of Gaussian Mixture Models”. In: *CoRR* abs/2206.08598 (2022). DOI: 10.48550/ARXIV.2206.08598. arXiv: 2206.08598. URL: <https://doi.org/10.48550/arXiv.2206.08598>.
- [28] Pascal Mattia Esser and Frank Nielsen. “Towards Modeling and Resolving Singular Parameter Spaces using Stratifolds”. In: *CoRR* abs/2112.03734 (2021). arXiv: 2112.03734. URL: <https://arxiv.org/abs/2112.03734>.
- [29] Vincent Garcia and Frank Nielsen. “Simplification and hierarchical representations of mixtures of exponential families”. In: *Signal Process.* 90.12 (2010), pp. 3197–3212. DOI: 10.1016/J.SIGPRO.2010.05.024. URL: <https://doi.org/10.1016/j.sigpro.2010.05.024>.
- [30] Erika Gomes-Gonçalves, Henryk Gzyl, and Frank Nielsen. “Geometry and clustering with metrics derived from separable Bregman divergences”. In: *CoRR* abs/1810.10770 (2018). arXiv: 1810.10770. URL: <http://arxiv.org/abs/1810.10770>.
- [31] Gaëtan Hadjeres and Frank Nielsen. “Anticipation-RNN: enforcing unary constraints in sequence generation, with application to interactive music generation”. In: *Neural Comput. Appl.* 32.4 (2020), pp. 995–1005. DOI: 10.1007/S00521-018-3868-4. URL: <https://doi.org/10.1007/s00521-018-3868-4>.
- [32] Gaëtan Hadjeres and Frank Nielsen. “Deep rank-based transposition-invariant distances on musical sequences”. In: *CoRR* abs/1709.00740 (2017). arXiv: 1709.00740. URL: <http://arxiv.org/abs/1709.00740>.

- [33] Gaëtan Hadjeres and Frank Nielsen. “Interactive Music Generation with Positional Constraints using Anticipation-RNNs”. In: *CoRR* abs/1709.06404 (2017). arXiv: 1709.06404. URL: <http://arxiv.org/abs/1709.06404>.
- [34] Gaëtan Hadjeres, Frank Nielsen, and François Pachet. “GLSR-VAE: Geodesic Latent Space Regularization for Variational AutoEncoder Architectures”. In: *CoRR* abs/1707.04588 (2017). arXiv: 1707.04588. URL: <http://arxiv.org/abs/1707.04588>.
- [35] Thomas Houit and Frank Nielsen. “Video Stippling”. In: *CoRR* abs/1011.6049 (2010). arXiv: 1011.6049. URL: <http://arxiv.org/abs/1011.6049>.
- [36] Matthew J. Katz, Frank Nielsen, and Michael Segal. “Maintenance of a Piercing Set for Intervals with Applications”. In: *Algorithmica* 36.1 (2003), pp. 59–73. DOI: 10.1007/S00453-002-1006-1. URL: <https://doi.org/10.1007/s00453-002-1006-1>.
- [37] Wu Lin et al. “Simplifying Momentum-based Riemannian Submanifold Optimization”. In: *CoRR* abs/2302.09738 (2023). DOI: 10.48550/ARXIV.2302.09738. arXiv: 2302.09738. URL: <https://doi.org/10.48550/arXiv.2302.09738>.
- [38] Wu Lin et al. “Structured second-order methods via natural gradient descent”. In: *CoRR* abs/2107.10884 (2021). arXiv: 2107.10884. URL: <https://arxiv.org/abs/2107.10884>.
- [39] Wu Lin et al. “Tractable structured natural gradient descent using local parameterizations”. In: *CoRR* abs/2102.07405 (2021). arXiv: 2102.07405. URL: <https://arxiv.org/abs/2102.07405>.
- [40] Meizhu Liu et al. “Shape Retrieval Using Hierarchical Total Bregman Soft Clustering”. In: *IEEE Trans. Pattern Anal. Mach. Intell.* 34.12 (2012), pp. 2407–2419. DOI: 10.1109/TPAMI.2012.44. URL: <https://doi.org/10.1109/TPAMI.2012.44>.
- [41] Gautier Marti, Victor Goubet, and Frank Nielsen. “cCorrGAN: Conditional Correlation GAN for Learning Empirical Conditional Distributions in the Elliptope”. In: *CoRR* abs/2107.10606 (2021). arXiv: 2107.10606. URL: <https://arxiv.org/abs/2107.10606>.
- [42] Gautier Marti, Frank Nielsen, and Philippe Donnat. “Optimal Copula Transport for Clustering Multivariate Time Series”. In: *CoRR* abs/1509.08144 (2015). arXiv: 1509.08144. URL: <http://arxiv.org/abs/1509.08144>.

- [43] Gautier Marti et al. “A proposal of a methodological framework with experimental guidelines to investigate clustering stability on financial time series”. In: *CoRR* abs/1509.05475 (2015). arXiv: 1509.05475. URL: <http://arxiv.org/abs/1509.05475>.
- [44] Gautier Marti et al. “Comment partitionner automatiquement des marches aléatoires ? Avec application à la finance quantitative”. In: *CoRR* abs/1506.09163 (2015). arXiv: 1506.09163. URL: <http://arxiv.org/abs/1506.09163>.
- [45] Gautier Marti et al. “HCMapper: An interactive visualization tool to compare partition-based flat clustering extracted from pairs of dendrograms”. In: *CoRR* abs/1507.08137 (2015). arXiv: 1507.08137. URL: <http://arxiv.org/abs/1507.08137>.
- [46] Vaden Masrani et al. “q-Paths: Generalizing the Geometric Annealing Path using Power Means”. In: *CoRR* abs/2107.00745 (2021). arXiv: 2107.00745. URL: <https://arxiv.org/abs/2107.00745>.
- [47] Boris Muzellec et al. “Tsallis Regularized Optimal Transport and Ecological Inference”. In: *CoRR* abs/1609.04495 (2016). arXiv: 1609.04495. URL: <http://arxiv.org/abs/1609.04495>.
- [48] Frank Nielsen. “ k -MLE: A fast algorithm for learning statistical mixture models”. In: *CoRR* abs/1203.5181 (2012). arXiv: 1203.5181. URL: <http://arxiv.org/abs/1203.5181>.
- [49] Frank Nielsen. “A family of statistical symmetric divergences based on Jensen’s inequality”. In: *CoRR* abs/1009.4004 (2010). arXiv: 1009.4004. URL: <http://arxiv.org/abs/1009.4004>.
- [50] Frank Nielsen. “A generalization of the α -divergences based on comparable and distinct weighted means”. In: *CoRR* abs/2001.09660 (2020). arXiv: 2001.09660. URL: <https://arxiv.org/abs/2001.09660>.
- [51] Frank Nielsen. “A generalization of the Jensen divergence: The chord gap divergence”. In: *CoRR* abs/1709.10498 (2017). arXiv: 1709.10498. URL: <http://arxiv.org/abs/1709.10498>.
- [52] Frank Nielsen. “A note on Onicescu’s informational energy and correlation coefficient in exponential families”. In: *CoRR* abs/2003.13199 (2020). arXiv: 2003.13199. URL: <https://arxiv.org/abs/2003.13199>.
- [53] Frank Nielsen. “A note on some information-theoretic divergences between Zeta distributions”. In: *CoRR* abs/2104.10548 (2021). arXiv: 2104.10548. URL: <https://arxiv.org/abs/2104.10548>.

- [54] Frank Nielsen. “A numerical approximation method for the Fisher-Rao distance between multivariate normal distributions”. In: *CoRR* abs/2302.08175 (2023). DOI: 10.48550/ARXIV.2302.08175. arXiv: 2302.08175. URL: <https://doi.org/10.48550/arXiv.2302.08175>.
- [55] Frank Nielsen. “A Simple Approximation Method for the Fisher-Rao Distance between Multivariate Normal Distributions”. In: *Entropy* 25.4 (2023), p. 654. DOI: 10.3390/E25040654. URL: <https://doi.org/10.3390/e25040654>.
- [56] Frank Nielsen. “An Elementary Introduction to Information Geometry”. In: *Entropy* 22.10 (2020), p. 1100. DOI: 10.3390/E22101100. URL: <https://doi.org/10.3390/e22101100>.
- [57] Frank Nielsen. “An elementary introduction to information geometry”. In: *CoRR* abs/1808.08271 (2018). arXiv: 1808.08271. URL: <http://arxiv.org/abs/1808.08271>.
- [58] Frank Nielsen. “An Information-Geometric Characterization of Chernoff Information”. In: *IEEE Signal Process. Lett.* 20.3 (2013), pp. 269–272. DOI: 10.1109/LSP.2013.2243726. URL: <https://doi.org/10.1109/LSP.2013.2243726>.
- [59] Frank Nielsen. “Beyond scalar quasi-arithmetic means: Quasi-arithmetic averages and quasi-arithmetic mixtures in information geometry”. In: *CoRR* abs/2301.10980 (2023). DOI: 10.48550/ARXIV.2301.10980. arXiv: 2301.10980. URL: <https://doi.org/10.48550/arXiv.2301.10980>.
- [60] Frank Nielsen. “Chernoff information of exponential families”. In: *CoRR* abs/1102.2684 (2011). arXiv: 1102.2684. URL: <http://arxiv.org/abs/1102.2684>.
- [61] Frank Nielsen. “Cramer-Rao Lower Bound and Information Geometry”. In: *CoRR* abs/1301.3578 (2013). arXiv: 1301.3578. URL: <http://arxiv.org/abs/1301.3578>.
- [62] Frank Nielsen. “Fast approximations of the Jeffreys divergence between univariate Gaussian mixture models via exponential polynomial densities”. In: *CoRR* abs/2107.05901 (2021). arXiv: 2107.05901. URL: <https://arxiv.org/abs/2107.05901>.
- [63] Frank Nielsen. “Fast Approximations of the Jeffreys Divergence between Univariate Gaussian Mixtures via Mixture Conversions to Exponential-Polynomial Distributions”. In: *Entropy* 23.11 (2021), p. 1417. DOI: 10.3390/E23111417. URL: <https://doi.org/10.3390/e23111417>.
- [64] Frank Nielsen. “Fast stabbing of boxes in high dimensions”. In: *Theor. Comput. Sci.* 246.1-2 (2000), pp. 53–72. DOI: 10.1016/S0304-3975(98)00336-3. URL: [https://doi.org/10.1016/S0304-3975\(98\)00336-3](https://doi.org/10.1016/S0304-3975(98)00336-3).

- [65] Frank Nielsen. “Fisher-Rao distance and pullback SPD cone distances between multivariate normal distributions”. In: *CoRR* abs/2307.10644 (2023). DOI: 10.48550/ARXIV.2307.10644. arXiv: 2307.10644. URL: <https://doi.org/10.48550/arXiv.2307.10644>.
- [66] Frank Nielsen. “Generalized Bhattacharyya and Chernoff upper bounds on Bayes error using quasi-arithmetic means”. In: *Pattern Recognit. Lett.* 42 (2014), pp. 25–34. DOI: 10.1016/J.PATREC.2014.01.002. URL: <https://doi.org/10.1016/j.patrec.2014.01.002>.
- [67] Frank Nielsen. “Generalized Bhattacharyya and Chernoff upper bounds on Bayes error using quasi-arithmetic means”. In: *CoRR* abs/1401.4788 (2014). arXiv: 1401.4788. URL: <http://arxiv.org/abs/1401.4788>.
- [68] Frank Nielsen. “Generalizing the Alpha-Divergences and the Oriented Kullback-Leibler Divergences with Quasi-Arithmetic Means”. In: *Algorithms* 15.11 (2022), p. 435. DOI: 10.3390/A15110435. URL: <https://doi.org/10.3390/a15110435>.
- [69] Frank Nielsen. “Hilbert geometry of the Siegel disk: The Siegel-Klein disk model”. In: *CoRR* abs/2004.08160 (2020). arXiv: 2004.08160. URL: <https://arxiv.org/abs/2004.08160>.
- [70] Frank Nielsen. “Image and Information”. In: *CoRR* abs/1602.01228 (2016). arXiv: 1602.01228. URL: <http://arxiv.org/abs/1602.01228>.
- [71] Frank Nielsen. “Jeffreys Centroids: A Closed-Form Expression for Positive Histograms and a Guaranteed Tight Approximation for Frequency Histograms”. In: *IEEE Signal Process. Lett.* 20.7 (2013), pp. 657–660. DOI: 10.1109/LSP.2013.2260538. URL: <https://doi.org/10.1109/LSP.2013.2260538>.
- [72] Frank Nielsen. “Logging safely in public spaces using color PINs”. In: *CoRR* abs/1304.6499 (2013). arXiv: 1304.6499. URL: <http://arxiv.org/abs/1304.6499>.
- [73] Frank Nielsen. “On a generalization of the Jensen-Shannon divergence”. In: *CoRR* abs/1912.00610 (2019). arXiv: 1912.00610. URL: <http://arxiv.org/abs/1912.00610>.
- [74] Frank Nielsen. “On a Generalization of the Jensen-Shannon Divergence and the Jensen-Shannon Centroid”. In: *Entropy* 22.2 (2020), p. 221. DOI: 10.3390/E22020221. URL: <https://doi.org/10.3390/e22020221>.
- [75] Frank Nielsen. “On a generalization of the Jensen-Shannon divergence and the JS-symmetrization of distances relying on abstract means”. In: *CoRR* abs/1904.04017 (2019). arXiv: 1904.04017. URL: <http://arxiv.org/abs/1904.04017>.

- [76] Frank Nielsen. “On a Variational Definition for the Jensen-Shannon Symmetrization of Distances Based on the Information Radius”. In: *Entropy* 23.4 (2021), p. 464. DOI: 10.3390/E23040464. URL: <https://doi.org/10.3390/e23040464>.
- [77] Frank Nielsen. “On a Variational Definition for the Jensen-Shannon Symmetrization of Distances based on the Information Radius”. In: *CoRR* abs/2102.09728 (2021). arXiv: 2102.09728. URL: <https://arxiv.org/abs/2102.09728>.
- [78] Frank Nielsen. “On geodesic triangles with right angles in a dually flat space”. In: *CoRR* abs/1910.03935 (2019). arXiv: 1910.03935. URL: <http://arxiv.org/abs/1910.03935>.
- [79] Frank Nielsen. “On information projections between multivariate elliptical and location-scale families”. In: *CoRR* abs/2101.03839 (2021). arXiv: 2101.03839. URL: <https://arxiv.org/abs/2101.03839>.
- [80] Frank Nielsen. “On point covers of c-oriented polygons”. In: *Theor. Comput. Sci.* 263.1-2 (2001), pp. 17–29. DOI: 10.1016/S0304-3975(00)00227-9. URL: [https://doi.org/10.1016/S0304-3975\(00\)00227-9](https://doi.org/10.1016/S0304-3975(00)00227-9).
- [81] Frank Nielsen. “On the Jensen-Shannon Symmetrization of Distances Relying on Abstract Means”. In: *Entropy* 21.5 (2019), p. 485. DOI: 10.3390/E21050485. URL: <https://doi.org/10.3390/e21050485>.
- [82] Frank Nielsen. “On the Kullback-Leibler divergence between discrete normal distributions”. In: *CoRR* abs/2109.14920 (2021). arXiv: 2109.14920. URL: <https://arxiv.org/abs/2109.14920>.
- [83] Frank Nielsen. “On the Kullback-Leibler divergence between location-scale densities”. In: *CoRR* abs/1904.10428 (2019). arXiv: 1904.10428. URL: <http://arxiv.org/abs/1904.10428>.
- [84] Frank Nielsen. “On the symmetrical Kullback-Leibler Jeffreys centroids”. In: *CoRR* abs/1303.7286 (2013). arXiv: 1303.7286. URL: <http://arxiv.org/abs/1303.7286>.
- [85] Frank Nielsen. “On Voronoi diagrams and dual Delaunay complexes on the information-geometric Cauchy manifolds”. In: *CoRR* abs/2006.07020 (2020). arXiv: 2006.07020. URL: <https://arxiv.org/abs/2006.07020>.
- [86] Frank Nielsen. “On Voronoi Diagrams on the Information-Geometric Cauchy Manifolds”. In: *Entropy* 22.7 (2020), p. 713. DOI: 10.3390/E22070713. URL: <https://doi.org/10.3390/e22070713>.
- [87] Frank Nielsen. “Output-Sensitive Peeling of Convex and Maximal Layers”. In: *Inf. Process. Lett.* 59.5 (1996), pp. 255–259. DOI: 10.1016/0020-0190(96)00116-0. URL: [https://doi.org/10.1016/0020-0190\(96\)00116-0](https://doi.org/10.1016/0020-0190(96)00116-0).

- [88] Frank Nielsen. “Revisiting Chernoff Information with Likelihood Ratio Exponential Families”. In: *Entropy* 24.10 (2022), p. 1400. DOI: 10.3390/E24101400. URL: <https://doi.org/10.3390/e24101400>.
- [89] Frank Nielsen. “Revisiting Chernoff Information with Likelihood Ratio Exponential Families”. In: *CoRR* abs/2207.03745 (2022). DOI: 10.48550/ARXIV.2207.03745. arXiv: 2207.03745. URL: <https://doi.org/10.48550/arXiv.2207.03745>.
- [90] Frank Nielsen. “Statistical Divergences between Densities of Truncated Exponential Families with Nested Supports: Duo Bregman and Duo Jensen Divergences”. In: *Entropy* 24.3 (2022), p. 421. DOI: 10.3390/E24030421. URL: <https://doi.org/10.3390/e24030421>.
- [91] Frank Nielsen. “Surround video: a multihead camera approach”. In: *Vis. Comput.* 21.1-2 (2005), pp. 92–103. DOI: 10.1007/S00371-004-0273-Z. URL: <https://doi.org/10.1007/s00371-004-0273-z>.
- [92] Frank Nielsen. “Technical opinion - Steering self-learning distance algorithms”. In: *Commun. ACM* 52.11 (2009), pp. 150–152. DOI: 10.1145/1592761.1592796. URL: <https://doi.org/10.1145/1592761.1592796>.
- [93] Frank Nielsen. “The Digital Chameleon Principle: Computing Invisibility by Rendering Transparency”. In: *IEEE Computer Graphics and Applications* 27.1 (2007), pp. 90–96. DOI: 10.1109/MCG.2007.21. URL: <https://doi.org/10.1109/MCG.2007.21>.
- [94] Frank Nielsen. “The dually flat information geometry of the mixture family of two prescribed Cauchy components”. In: *CoRR* abs/2104.13801 (2021). arXiv: 2104.13801. URL: <https://arxiv.org/abs/2104.13801>.
- [95] Frank Nielsen. “The duo Fenchel-Young divergence”. In: *CoRR* abs/2202.10726 (2022). arXiv: 2202.10726. URL: <https://arxiv.org/abs/2202.10726>.
- [96] Frank Nielsen. “The Siegel-Klein Disk: Hilbert Geometry of the Siegel Disk Domain”. In: *Entropy* 22.9 (2020), p. 1019. DOI: 10.3390/E22091019. URL: <https://doi.org/10.3390/e22091019>.
- [97] Frank Nielsen. “The statistical Minkowski distances: Closed-form formula for Gaussian Mixture Models”. In: *CoRR* abs/1901.03732 (2019). arXiv: 1901.03732. URL: <http://arxiv.org/abs/1901.03732>.
- [98] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. “Bregman Voronoi Diagrams: Properties, Algorithms and Applications”. In: *CoRR* abs/0709.2196 (2007). arXiv: 0709.2196. URL: <http://arxiv.org/abs/0709.2196>.

- [99] Frank Nielsen and Sylvain Boltz. “The Burbea-Rao and Bhattacharyya Centroids”. In: *IEEE Trans. Inf. Theory* 57.8 (2011), pp. 5455–5466. DOI: 10.1109/TIT.2011.2159046. URL: <https://doi.org/10.1109/TIT.2011.2159046>.
- [100] Frank Nielsen and Sylvain Boltz. “The Burbea-Rao and Bhattacharyya centroids”. In: *CoRR* abs/1004.5049 (2010). arXiv: 1004.5049. URL: <http://arxiv.org/abs/1004.5049>.
- [101] Frank Nielsen and Vincent Garcia. “Statistical exponential families: A digest with flash cards”. In: *CoRR* abs/0911.4863 (2009). arXiv: 0911.4863. URL: <http://arxiv.org/abs/0911.4863>.
- [102] Frank Nielsen and Gaëtan Hadjeres. “A note on the quasiconvex Jensen divergences and the quasiconvex Bregman divergences derived thereof”. In: *CoRR* abs/1909.08857 (2019). arXiv: 1909.08857. URL: <http://arxiv.org/abs/1909.08857>.
- [103] Frank Nielsen and Gaëtan Hadjeres. “Monte Carlo Information Geometry: The dually flat case”. In: *CoRR* abs/1803.07225 (2018). arXiv: 1803.07225. URL: <http://arxiv.org/abs/1803.07225>.
- [104] Frank Nielsen and Gaëtan Hadjeres. “On power chi expansions of f-divergences”. In: *CoRR* abs/1903.05818 (2019). arXiv: 1903.05818. URL: <http://arxiv.org/abs/1903.05818>.
- [105] Frank Nielsen, Boris Muzellec, and Richard Nock. “Large Margin Nearest Neighbor Classification using Curved Mahalanobis Distances”. In: *CoRR* abs/1609.07082 (2016). arXiv: 1609.07082. URL: <http://arxiv.org/abs/1609.07082>.
- [106] Frank Nielsen and Richard Nock. “A closed-form expression for the Sharma-Mittal entropy of exponential families”. In: *CoRR* abs/1112.4221 (2011). arXiv: 1112.4221. URL: <http://arxiv.org/abs/1112.4221>.
- [107] Frank Nielsen and Richard Nock. “A fast deterministic smallest enclosing disk approximation algorithm”. In: *Inf. Process. Lett.* 93.6 (2005), pp. 263–268. DOI: 10.1016/J.IPL.2004.12.006. URL: <https://doi.org/10.1016/j.ipl.2004.12.006>.
- [108] Frank Nielsen and Richard Nock. “A note on the optimal scalar Bregman k-means clustering with an application to learning best statistical mixtures”. In: *CoRR* abs/1403.2485 (2014). arXiv: 1403.2485. URL: <http://arxiv.org/abs/1403.2485>.
- [109] Frank Nielsen and Richard Nock. “A series of maximum entropy upper bounds of the differential entropy”. In: *CoRR* abs/1612.02954 (2016). arXiv: 1612.02954. URL: <http://arxiv.org/abs/1612.02954>.

- [110] Frank Nielsen and Richard Nock. “Approximating Smallest Enclosing Balls with Applications to Machine Learning”. In: *Int. J. Comput. Geom. Appl.* 19.5 (2009), pp. 389–414. DOI: 10.1142/S0218195909003039. URL: <https://doi.org/10.1142/S0218195909003039>.
- [111] Frank Nielsen and Richard Nock. “Cumulant-free closed-form formulas for some common (dis)similarities between densities of an exponential family”. In: *CoRR* abs/2003.02469 (2020). arXiv: 2003.02469. URL: <https://arxiv.org/abs/2003.02469>.
- [112] Frank Nielsen and Richard Nock. “Fast $(1+\epsilon)$ -approximation of the Löwner extremal matrices of dimensionalsymmetric matrices”. In: *CoRR* abs/1604.01592 (2016). arXiv: 1604.01592. URL: <http://arxiv.org/abs/1604.01592>.
- [113] Frank Nielsen and Richard Nock. “Further heuristics for k -means: The merge-and-split heuristic and the (k, l) -means”. In: *CoRR* abs/1406.6314 (2014). arXiv: 1406.6314. URL: <http://arxiv.org/abs/1406.6314>.
- [114] Frank Nielsen and Richard Nock. “Further results on the hyperbolic Voronoi diagrams”. In: *CoRR* abs/1410.1036 (2014). arXiv: 1410.1036. URL: <http://arxiv.org/abs/1410.1036>.
- [115] Frank Nielsen and Richard Nock. “Generalizing Jensen and Bregman divergences with comparative convexity and the statistical Bhattacharyya distances with comparable means”. In: *CoRR* abs/1702.04877 (2017). arXiv: 1702.04877. URL: <http://arxiv.org/abs/1702.04877>.
- [116] Frank Nielsen and Richard Nock. “Generalizing Skew Jensen Divergences and Bregman Divergences With Comparative Convexity”. In: *IEEE Signal Process. Lett.* 24.8 (2017), pp. 1123–1127. DOI: 10.1109/LSP.2017.2712195. URL: <https://doi.org/10.1109/LSP.2017.2712195>.
- [117] Frank Nielsen and Richard Nock. “Hyperbolic Voronoi diagrams made easy”. In: *CoRR* abs/0903.3287 (2009). arXiv: 0903.3287. URL: <http://arxiv.org/abs/0903.3287>.
- [118] Frank Nielsen and Richard Nock. “MaxEnt Upper Bounds for the Differential Entropy of Univariate Continuous Distributions”. In: *IEEE Signal Process. Lett.* 24.4 (2017), pp. 402–406. DOI: 10.1109/LSP.2017.2666792. URL: <https://doi.org/10.1109/LSP.2017.2666792>.
- [119] Frank Nielsen and Richard Nock. “On Rényi and Tsallis entropies and divergences for exponential families”. In: *CoRR* abs/1105.3259 (2011). arXiv: 1105.3259. URL: <http://arxiv.org/abs/1105.3259>.

- [120] Frank Nielsen and Richard Nock. “On the Centroids of Symmetrized Bregman Divergences”. In: *CoRR* abs/0711.3242 (2007). arXiv: 0711.3242. URL: <http://arxiv.org/abs/0711.3242>.
- [121] Frank Nielsen and Richard Nock. “On the Chi Square and Higher-Order Chi Distances for Approximating f -Divergences”. In: *IEEE Signal Process. Lett.* 21.1 (2014), pp. 10–13. DOI: 10.1109/LSP.2013.2288355. URL: <https://doi.org/10.1109/LSP.2013.2288355>.
- [122] Frank Nielsen and Richard Nock. “On the Chi square and higher-order Chi distances for approximating f-divergences”. In: *CoRR* abs/1309.3029 (2013). arXiv: 1309.3029. URL: <http://arxiv.org/abs/1309.3029>.
- [123] Frank Nielsen and Richard Nock. “On the smallest enclosing information disk”. In: *Inf. Process. Lett.* 105.3 (2008), pp. 93–97. DOI: 10.1016/J.IPL.2007.08.007. URL: <https://doi.org/10.1016/j.ipl.2007.08.007>.
- [124] Frank Nielsen and Richard Nock. “On w-mixtures: Finite convex combinations of prescribed component distributions”. In: *CoRR* abs/1708.00568 (2017). arXiv: 1708.00568. URL: <http://arxiv.org/abs/1708.00568>.
- [125] Frank Nielsen and Richard Nock. “Optimal Interval Clustering: Application to Bregman Clustering and Statistical Mixture Learning”. In: *IEEE Signal Process. Lett.* 21.10 (2014), pp. 1289–1292. DOI: 10.1109/LSP.2014.2333001. URL: <https://doi.org/10.1109/LSP.2014.2333001>.
- [126] Frank Nielsen and Richard Nock. “Sided and symmetrized Bregman centroids”. In: *IEEE Trans. Inf. Theory* 55.6 (2009), pp. 2882–2904. DOI: 10.1109/TIT.2009.2018176. URL: <https://doi.org/10.1109/TIT.2009.2018176>.
- [127] Frank Nielsen and Richard Nock. “Skew Jensen-Bregman Voronoi Diagrams”. In: *Trans. Comput. Sci.* 14 (2011), pp. 102–128. DOI: 10.1007/978-3-642-25249-5_4. URL: https://doi.org/10.1007/978-3-642-25249-5_4.
- [128] Frank Nielsen and Richard Nock. “The Bregman chord divergence”. In: *CoRR* abs/1810.09113 (2018). arXiv: 1810.09113. URL: <http://arxiv.org/abs/1810.09113>.
- [129] Frank Nielsen and Richard Nock. “The hyperbolic Voronoi diagram in arbitrary dimension”. In: *CoRR* abs/1210.8234 (2012). arXiv: 1210.8234. URL: <http://arxiv.org/abs/1210.8234>.
- [130] Frank Nielsen and Richard Nock. “Total Jensen divergences: Definition, Properties and k-Means++ Clustering”. In: *CoRR* abs/1309.7109 (2013). arXiv: 1309.7109. URL: <http://arxiv.org/abs/1309.7109>.

- [131] Frank Nielsen, Richard Nock, and Shun-ichi Amari. “On Clustering Histograms with k -Means by Using Mixed α -Divergences”. In: *Entropy* 16.6 (2014), pp. 3273–3301. DOI: 10.3390/E16063273. URL: <https://doi.org/10.3390/e16063273>.
- [132] Frank Nielsen and Kazuki Okamura. “A note on the f -divergences between multivariate location-scale families with either prescribed scale matrices or location parameters”. In: *CoRR* abs/2204.10952 (2022). DOI: 10.48550/ARXIV.2204.10952. arXiv: 2204.10952. URL: <https://doi.org/10.48550/arXiv.2204.10952>.
- [133] Frank Nielsen and Kazuki Okamura. “Information geometry of the Tojo-Yoshino’s exponential family on the Poincaré upper plane”. In: *CoRR* abs/2205.13984 (2022). DOI: 10.48550/ARXIV.2205.13984. arXiv: 2205.13984. URL: <https://doi.org/10.48550/arXiv.2205.13984>.
- [134] Frank Nielsen and Kazuki Okamura. “On f -divergences between Cauchy distributions”. In: *CoRR* abs/2101.12459 (2021). arXiv: 2101.12459. URL: <https://arxiv.org/abs/2101.12459>.
- [135] Frank Nielsen and Kazuki Okamura. “On f -Divergences Between Cauchy Distributions”. In: *IEEE Trans. Inf. Theory* 69.5 (2023), pp. 3150–3171. DOI: 10.1109/TIT.2022.3231645. URL: <https://doi.org/10.1109/TIT.2022.3231645>.
- [136] Frank Nielsen and Ke Sun. “Clustering in Hilbert simplex geometry”. In: *CoRR* abs/1704.00454 (2017). arXiv: 1704.00454. URL: <http://arxiv.org/abs/1704.00454>.
- [137] Frank Nielsen and Ke Sun. “Guaranteed Bounds on Information-Theoretic Measures of Univariate Mixtures Using Piecewise Log-Sum-Exp Inequalities”. In: *Entropy* 18.12 (2016), p. 442. DOI: 10.3390/E18120442. URL: <https://doi.org/10.3390/e18120442>.
- [138] Frank Nielsen and Ke Sun. “Guaranteed Bounds on the Kullback-Leibler Divergence of Univariate Mixtures”. In: *IEEE Signal Process. Lett.* 23.11 (2016), pp. 1543–1546. DOI: 10.1109/LSP.2016.2606661. URL: <https://doi.org/10.1109/LSP.2016.2606661>.
- [139] Frank Nielsen and Ke Sun. “Guaranteed bounds on the Kullback-Leibler divergence of univariate mixtures using piecewise log-sum-exp inequalities”. In: *CoRR* abs/1606.05850 (2016). arXiv: 1606.05850. URL: <http://arxiv.org/abs/1606.05850>.
- [140] Frank Nielsen and Ke Sun. “Guaranteed Deterministic Bounds on the Total Variation Distance between Univariate Mixtures”. In: *CoRR* abs/1806.11311 (2018). arXiv: 1806.11311. URL: <http://arxiv.org/abs/1806.11311>.

- [141] Frank Nielsen and Ke Sun. “Non-linear Embeddings in Hilbert Simplex Geometry”. In: *CoRR* abs/2203.11434 (2022). DOI: 10.48550/ARXIV.2203.11434. arXiv: 2203.11434. URL: <https://doi.org/10.48550/arXiv.2203.11434>.
- [142] Frank Nielsen and Ke Sun. “On The Chain Rule Optimal Transport Distance”. In: *CoRR* abs/1812.08113 (2018). arXiv: 1812.08113. URL: <http://arxiv.org/abs/1812.08113>.
- [143] Frank Nielsen and Ke Sun. “q-Neurons: Neuron Activations Based on Stochastic Jackson’s Derivative Operators”. In: *IEEE Trans. Neural Networks Learn. Syst.* 32.6 (2021), pp. 2782–2789. DOI: 10.1109/TNNLS.2020.3005167. URL: <https://doi.org/10.1109/TNNLS.2020.3005167>.
- [144] Frank Nielsen and Ke Sun. “q-Neurons: Neuron Activations based on Stochastic Jackson’s Derivative Operators”. In: *CoRR* abs/1806.00149 (2018). arXiv: 1806.00149. URL: <http://arxiv.org/abs/1806.00149>.
- [145] Frank Nielsen, Ke Sun, and Stéphane Marchand-Maillet. “On Hölder Projective Divergences”. In: *Entropy* 19.3 (2017), p. 122. DOI: 10.3390/E19030122. URL: <https://doi.org/10.3390/e19030122>.
- [146] Frank Nielsen, Ke Sun, and Stéphane Marchand-Maillet. “On Hölder projective divergences”. In: *CoRR* abs/1701.03916 (2017). arXiv: 1701.03916. URL: <http://arxiv.org/abs/1701.03916>.
- [147] Frank Nielsen and Mariette Yvinec. “Output-Sensitive Convex Hull Algorithms of Planar Convex Objects”. In: *Int. J. Comput. Geom. Appl.* 8.1 (1998), pp. 39–66. DOI: 10.1142/S0218195998000047. URL: <https://doi.org/10.1142/S0218195998000047>.
- [148] Richard Nock and Frank Nielsen. “A Real generalization of discrete AdaBoost”. In: *Artif. Intell.* 171.1 (2007), pp. 25–41. DOI: 10.1016/J.ARTINT.2006.10.014. URL: <https://doi.org/10.1016/j.artint.2006.10.014>.
- [149] Richard Nock and Frank Nielsen. “Bregman Divergences and Surrogates for Learning”. In: *IEEE Trans. Pattern Anal. Mach. Intell.* 31.11 (2009), pp. 2048–2059. DOI: 10.1109/TPAMI.2008.225. URL: <https://doi.org/10.1109/TPAMI.2008.225>.
- [150] Richard Nock and Frank Nielsen. “Distribution-free Evolvability of Vector Spaces: All it takes is a Generating Set”. In: *CoRR* abs/1704.02708 (2017). arXiv: 1704.02708. URL: <http://arxiv.org/abs/1704.02708>.
- [151] Richard Nock and Frank Nielsen. “On domain-partitioning induction criteria: worst-case bounds for the worst-case based”. In: *Theor. Comput. Sci.* 321.2-3 (2004), pp. 371–382. DOI: 10.1016/J.TCS.2004.05.004. URL: <https://doi.org/10.1016/j.tcs.2004.05.004>.

- [152] Richard Nock and Frank Nielsen. “On Weighting Clustering”. In: *IEEE Trans. Pattern Anal. Mach. Intell.* 28.8 (2006), pp. 1223–1235. DOI: 10.1109/TPAMI.2006.168. URL: <https://doi.org/10.1109/TPAMI.2006.168>.
- [153] Richard Nock and Frank Nielsen. “Self-improved gaps almost everywhere for the agnostic approximation of monomials”. In: *Theor. Comput. Sci.* 377.1–3 (2007), pp. 139–150. DOI: 10.1016/J.TCS.2007.02.023. URL: <https://doi.org/10.1016/j.tcs.2007.02.023>.
- [154] Richard Nock and Frank Nielsen. “Semi-supervised statistical region refinement for color image segmentation”. In: *Pattern Recognit.* 38.6 (2005), pp. 835–846. DOI: 10.1016/J.PATCOG.2004.11.009. URL: <https://doi.org/10.1016/j.patcog.2004.11.009>.
- [155] Richard Nock and Frank Nielsen. “Statistical Region Merging”. In: *IEEE Trans. Pattern Anal. Mach. Intell.* 26.11 (2004), pp. 1452–1458. DOI: 10.1109/TPAMI.2004.110. URL: <https://doi.org/10.1109/TPAMI.2004.110>.
- [156] Richard Nock, Frank Nielsen, and Shun-ichi Amari. “On Conformal Divergences and Their Population Minimizers”. In: *IEEE Trans. Inf. Theory* 62.1 (2016), pp. 527–538. DOI: 10.1109/TIT.2015.2448072. URL: <https://doi.org/10.1109/TIT.2015.2448072>.
- [157] Richard Nock, Frank Nielsen, and Shun-ichi Amari. “On conformal divergences and their population minimizers”. In: *CoRR* abs/1311.5125 (2013). arXiv: 1311.5125. URL: <http://arxiv.org/abs/1311.5125>.
- [158] Richard Nock et al. “Boosting k-NN for Categorization of Natural Scenes”. In: *Int. J. Comput. Vis.* 100.3 (2012), pp. 294–314. DOI: 10.1007/S11263-012-0539-2. URL: <https://doi.org/10.1007/s11263-012-0539-2>.
- [159] Richard Nock et al. “Gentle Nearest Neighbors Boosting over Proper Scoring Rules”. In: *IEEE Trans. Pattern Anal. Mach. Intell.* 37.1 (2015), pp. 80–93. DOI: 10.1109/TPAMI.2014.2307877. URL: <https://doi.org/10.1109/TPAMI.2014.2307877>.
- [160] Richard Nock et al. “Information geometries and Microeconomic Theories”. In: *CoRR* abs/0901.2586 (2009). arXiv: 0901.2586. URL: <http://arxiv.org/abs/0901.2586>.
- [161] Richard Nock et al. “k-variates++: more pluses in the k-means++”. In: *CoRR* abs/1602.01198 (2016). arXiv: 1602.01198. URL: <http://arxiv.org/abs/1602.01198>.

- [162] Richard Nock et al. “Soft memberships for spectral clustering, with application to permeable language distinction”. In: *Pattern Recognit.* 42.1 (2009), pp. 43–53. DOI: 10.1016/J.PATCOG.2008.06.024. URL: <https://doi.org/10.1016/j.patcog.2008.06.024>.
- [163] Richard Nock et al. “Soft Uncoupling of Markov Chains for Permeable Language Distinction: A New Algorithm”. In: *CoRR* abs/0810.1261 (2008). arXiv: 0810.1261. URL: <http://arxiv.org/abs/0810.1261>.
- [164] Richard Nock et al. “Staring at Economic Aggregators through Information Lenses”. In: *CoRR* abs/0801.0390 (2008). arXiv: 0801.0390. URL: <http://arxiv.org/abs/0801.0390>.
- [165] Shigeru Owada, Yoshihisa Shinagawa, and Frank Nielsen. “Enumeration of Contour Correspondence”. In: *Int. J. Image Graph.* 3.4 (2003), pp. 609–628. DOI: 10.1142/S0219467803001214. URL: <https://doi.org/10.1142/S0219467803001214>.
- [166] Shigeru Owada et al. “Volumetric illustration: designing 3D models with internal textures”. In: *ACM Trans. Graph.* 23.3 (2004), pp. 322–328. DOI: 10.1145/1015706.1015723. URL: <https://doi.org/10.1145/1015706.1015723>.
- [167] Andrea Di Pasquale et al. “Product Jacobi-Theta Boltzmann machines with score matching”. In: *CoRR* abs/2303.05910 (2023). DOI: 10.48550/ARXIV.2303.05910. arXiv: 2303.05910. URL: <https://doi.org/10.48550/arXiv.2303.05910>.
- [168] Giorgio Patrini et al. “Loss factorization, weakly supervised learning and label noise robustness”. In: *CoRR* abs/1602.02450 (2016). arXiv: 1602.02450. URL: <http://arxiv.org/abs/1602.02450>.
- [169] Giorgio Patrini et al. “Sinkhorn AutoEncoders”. In: *CoRR* abs/1810.01118 (2018). arXiv: 1810.01118. URL: <http://arxiv.org/abs/1810.01118>.
- [170] Gia-Thuy Pham, Rémy Boyer, and Frank Nielsen. “Computational Information Geometry for Binary Classification of High-Dimensional Random Tensors”. In: *Entropy* 20.3 (2018), p. 203. DOI: 10.3390/E20030203. URL: <https://doi.org/10.3390/e20030203>.
- [171] Paolo Piro et al. “Boosting k-NN for categorization of natural scenes”. In: *CoRR* abs/1001.1221 (2010). arXiv: 1001.1221. URL: <http://arxiv.org/abs/1001.1221>.
- [172] Paolo Piro et al. “Leveraging k-NN for generic classification boosting”. In: *Neurocomputing* 80 (2012), pp. 3–9. DOI: 10.1016/J.NEUCOM.2011.07.026. URL: <https://doi.org/10.1016/j.neucom.2011.07.026>.

- [173] Ke Sun and Frank Nielsen. “Information-Geometric Set Embeddings (IGSE): From Sets to Probability Distributions”. In: *CoRR* abs/1911.12463 (2019). arXiv: 1911.12463. URL: <http://arxiv.org/abs/1911.12463>.
- [174] Ke Sun and Frank Nielsen. “Lightlike Neuromanifolds, Occam’s Razor and Deep Learning”. In: *CoRR* abs/1905.11027 (2019). arXiv: 1905.11027. URL: <http://arxiv.org/abs/1905.11027>.
- [175] Ke Sun and Frank Nielsen. “Relative Natural Gradient for Learning Large Complex Models”. In: *CoRR* abs/1606.06069 (2016). arXiv: 1606.06069. URL: <http://arxiv.org/abs/1606.06069>.
- [176] Baba C. Vemuri et al. “Total Bregman Divergence and Its Applications to DTI Analysis”. In: *IEEE Trans. Medical Imaging* 30.2 (2011), pp. 475–483. DOI: 10.1109/TMI.2010.2086464. URL: <https://doi.org/10.1109/TMI.2010.2086464>.
- [177] Junlin Yao and Frank Nielsen. “SSSC-AM: A Unified Framework for Video Co-Segmentation by Structured Sparse Subspace Clustering with Appearance and Motion Features”. In: *CoRR* abs/1603.04139 (2016). arXiv: 1603.04139. URL: <http://arxiv.org/abs/1603.04139>.
- [178] Tatsuo Yotsukura et al. “HyperMask - projecting a talking head onto a real object”. In: *Vis. Comput.* 18.2 (2002), pp. 111–120. DOI: 10.1007/S003710100140. URL: <https://doi.org/10.1007/s003710100140>.

Conferences

- [179] Paul Agron, Leo Bachmair, and Frank Nielsen. “A Visual Interactive Framework for Formal Derivation”. In: *Computational Science - ICCS 2005, 5th International Conference, Atlanta, GA, USA, May 22-25, 2005, Proceedings, Part I*. Ed. by Vaidy S. Sunderam et al. Vol. 3514. Lecture Notes in Computer Science. Springer, 2005, pp. 1019–1026. DOI: 10.1007/11428831_127. URL: https://doi.org/10.1007/11428831%5C_127.
- [180] Sylvain Boltz and Frank Nielsen. “Randomized motion estimation”. In: *Proceedings of the International Conference on Image Processing, ICIP 2010, September 26-29, Hong Kong, China*. IEEE, 2010, pp. 781–784. DOI: 10.1109/ICIP.2010.5652514. URL: <https://doi.org/10.1109/ICIP.2010.5652514>.
- [181] Sylvain Boltz, Frank Nielsen, and Stefano Soatto. “Earth Mover Distance on superpixels”. In: *Proceedings of the International Conference on Image Processing, ICIP 2010, September 26-29, Hong Kong, China*. IEEE, 2010, pp. 4597–4600. DOI: 10.1109/ICIP.2010.5651708. URL: <https://doi.org/10.1109/ICIP.2010.5651708>.
- [182] Sylvain Boltz, Frank Nielsen, and Stefano Soatto. “Texture Regimes for Entropy-Based Multiscale Image Analysis”. In: *Computer Vision - ECCV 2010, 11th European Conference on Computer Vision, Heraklion, Crete, Greece, September 5-11, 2010, Proceedings, Part III*. Ed. by Kostas Daniilidis, Petros Maragos, and Nikos Paragios. Vol. 6313. Lecture Notes in Computer Science. Springer, 2010, pp. 692–705. DOI: 10.1007/978-3-642-15558-1_50. URL: https://doi.org/10.1007/978-3-642-15558-1%5C_50.
- [183] Rémy Boyer and Frank Nielsen. “Information geometry metric for random signal detection in large random sensing systems”. In: *2017 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2017, New Orleans, LA, USA, March 5-9, 2017*. IEEE, 2017, pp. 4471–4475. DOI: 10.1109/ICASSP.2017.7953002. URL: <https://doi.org/10.1109/ICASSP.2017.7953002>.
- [184] Rémy Boyer and Frank Nielsen. “On the Error Exponent of a Random Tensor with Orthonormal Factor Matrices”. In: *Geometric Science of Information - Third International Conference, GSI 2017, Paris, France, November 7-9, 2017, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 10589. Lecture Notes in Computer Science. Springer, 2017, pp. 657–664. DOI: 10.1007/978-3-319-68445-1_76. URL: https://doi.org/10.1007/978-3-319-68445-1%5C_76.

- [185] Yann Cabanes and Frank Nielsen. “Classification in the Siegel Space for Vectorial Autoregressive Data”. In: *Geometric Science of Information - 5th International Conference, GSI 2021, Paris, France, July 21-23, 2021, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 12829. Lecture Notes in Computer Science. Springer, 2021, pp. 693–700. DOI: 10.1007/978-3-030-80209-7_74. URL: https://doi.org/10.1007/978-3-030-80209-7%5C_74.
- [186] Roberto D’Ambrosio et al. “Biomedical Images Classification by Universal Nearest Neighbours Classifier Using Posterior Probability”. In: *Machine Learning in Medical Imaging - Third International Workshop, MLMI 2012, Held in Conjunction with MICCAI 2012, Nice, France, October 1, 2012, Revised Selected Papers*. Ed. by Fei Wang et al. Vol. 7588. Lecture Notes in Computer Science. Springer, 2012, pp. 119–127. DOI: 10.1007/978-3-642-35428-1_15. URL: https://doi.org/10.1007/978-3-642-35428-1%5C_15.
- [187] Roberto D’Ambrosio et al. “Boosting Nearest Neighbors for the Efficient Estimation of Posteriors”. In: *Machine Learning and Knowledge Discovery in Databases - European Conference, ECML PKDD 2012, Bristol, UK, September 24-28, 2012. Proceedings, Part I*. Ed. by Peter A. Flach, Tijl De Bie, and Nello Cristianini. Vol. 7523. Lecture Notes in Computer Science. Springer, 2012, pp. 314–329. DOI: 10.1007/978-3-642-33460-3_26. URL: https://doi.org/10.1007/978-3-642-33460-3%5C_26.
- [188] Nicolas Dupin and Frank Nielsen. “Partial K-Means with M Outliers: Mathematical Programs and Complexity Results”. In: *Optimization and Learning - 6th International Conference, OLA 2023, Malaga, Spain, May 3-5, 2023, Proceedings*. Ed. by Bernabé Dorronsoro et al. Vol. 1824. Communications in Computer and Information Science. Springer, 2023, pp. 287–303. DOI: 10.1007/978-3-031-34020-8_22. URL: https://doi.org/10.1007/978-3-031-34020-8%5C_22.
- [189] Nicolas Dupin, Frank Nielsen, and El-Ghazali Talbi. “Clustering a 2d Pareto Front: P-center Problems Are Solvable in Polynomial Time”. In: *Optimization and Learning - Third International Conference, OLA 2020, Cádiz, Spain, February 17-19, 2020, Proceedings*. Ed. by Bernabé Dorronsoro et al. Vol. 1173. Communications in Computer and Information Science. Springer, 2020, pp. 179–191. DOI: 10.1007/978-3-030-41913-4_15. URL: https://doi.org/10.1007/978-3-030-41913-4%5C_15.
- [190] Nicolas Dupin, Frank Nielsen, and El-Ghazali Talbi. “K-Medoids Clustering Is Solvable in Polynomial Time for a 2d Pareto Front”. In: *Optimization of Complex Systems: Theory, Models, Algorithms and Applications, WCGO 2019, World Congress on Global Optimization, Metz, France, 8-10 July, 2019*. Ed.

- by Hoai An Le Thi, Hoai Minh Le, and Tao Pham Dinh. Vol. 991. *Advances in Intelligent Systems and Computing*. Springer, 2019, pp. 790–799. DOI: 10.1007/978-3-030-21803-4_79. URL: https://doi.org/10.1007/978-3-030-21803-4_79.
- [191] Alon Efrat et al. “Dynamic Data Structures for Fat Objects and Their Applications”. In: *Algorithms and Data Structures, 5th International Workshop, WADS ’97, Halifax, Nova Scotia, Canada, August 6-8, 1997, Proceedings*. Ed. by Frank K. H. A. Dehne et al. Vol. 1272. *Lecture Notes in Computer Science*. Springer, 1997, pp. 297–306. DOI: 10.1007/3-540-63307-3_69. URL: https://doi.org/10.1007/3-540-63307-3_69.
- [192] Vincent Garcia and Frank Nielsen. “Searching High-Dimensional Neighbours: CPU-Based Tailored Data-Structures Versus GPU-Based Brute-Force Method”. In: *Computer Vision/Computer Graphics Collaboration Techniques, 4th International Conference, MIRAGE 2009, Rocquencourt, France, May 4-6, 2009. Proceedings*. Ed. by André Gagalowicz and Wilfried Philips. Vol. 5496. *Lecture Notes in Computer Science*. Springer, 2009, pp. 425–436. DOI: 10.1007/978-3-642-01811-4_38. URL: https://doi.org/10.1007/978-3-642-01811-4_38.
- [193] Vincent Garcia, Frank Nielsen, and Richard Nock. “Hierarchical Gaussian Mixture Model”. In: *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2010, 14-19 March 2010, Sheraton Dallas Hotel, Dallas, Texas, USA*. IEEE, 2010, pp. 4070–4073.
- [194] Vincent Garcia, Frank Nielsen, and Richard Nock. “Levels of Details for Gaussian Mixture Models”. In: *Computer Vision - ACCV 2009, 9th Asian Conference on Computer Vision, Xi’an, China, September 23-27, 2009, Revised Selected Papers, Part II*. Ed. by Hongbin Zha, Rin-ichiro Taniguchi, and Stephen J. Maybank. Vol. 5995. *Lecture Notes in Computer Science*. Springer, 2009, pp. 514–525. DOI: 10.1007/978-3-642-12304-7_48. URL: https://doi.org/10.1007/978-3-642-12304-7_48.
- [195] Vincent Garcia et al. “K-nearest neighbor search: Fast GPU-based implementations and application to high-dimensional feature matching”. In: *Proceedings of the International Conference on Image Processing, ICIP 2010, September 26-29, Hong Kong, China*. IEEE, 2010, pp. 3757–3760. DOI: 10.1109/ICIP.2010.5654017. URL: <https://doi.org/10.1109/ICIP.2010.5654017>.
- [196] Erika Gomes-Gonçalves, Henryk Gzyl, and Frank Nielsen. “Geometry and Fixed-Rate Quantization in Riemannian Metric Spaces Induced by Separable Bregman Divergences”. In: *Geometric Science of Information - 4th International Conference, GSI 2019, Toulouse, France, August 27-29, 2019, Proceed-*

- ings. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 11712. Lecture Notes in Computer Science. Springer, 2019, pp. 351–358. DOI: 10.1007/978-3-030-26980-7\36. URL: https://doi.org/10.1007/978-3-030-26980-7%5C_36.
- [197] Maria S. Greco, Rémy Boyer, and Frank Nielsen. “On the Angular Resolution Limit Uncertainty”. In: *26th European Signal Processing Conference, EUSIPCO 2018, Roma, Italy, September 3-7, 2018*. IEEE, 2018, pp. 623–626. DOI: 10.23919/EUSIPCO.2018.8553603. URL: <https://doi.org/10.23919/EUSIPCO.2018.8553603>.
- [198] Gaëtan Hadjeres, Frank Nielsen, and François Pachet. “GLSR-VAE: Geodesic latent space regularization for variational autoencoder architectures”. In: *2017 IEEE Symposium Series on Computational Intelligence, SSCI 2017, Honolulu, HI, USA, November 27 - Dec. 1, 2017*. IEEE, 2017, pp. 1–7. DOI: 10.1109/SSCI.2017.8280895. URL: <https://doi.org/10.1109/SSCI.2017.8280895>.
- [199] Gaëtan Hadjeres, François Pachet, and Frank Nielsen. “DeepBach: a Steerable Model for Bach Chorales Generation”. In: *Proceedings of the 34th International Conference on Machine Learning, ICML 2017, Sydney, NSW, Australia, 6-11 August 2017*. Ed. by Doina Precup and Yee Whye Teh. Vol. 70. Proceedings of Machine Learning Research. PMLR, 2017, pp. 1362–1371. URL: <http://proceedings.mlr.press/v70/hadjeres17a.html>.
- [200] Claudia Henry, Richard Nock, and Frank Nielsen. “Real Boosting a la Carte with an Application to Boosting Oblique Decision Tree”. In: *IJCAI 2007, Proceedings of the 20th International Joint Conference on Artificial Intelligence, Hyderabad, India, January 6-12, 2007*. Ed. by Manuela M. Veloso. 2007, pp. 842–847. URL: <http://ijcai.org/Proceedings/07/Papers/135.pdf>.
- [201] Thomas Houit and Frank Nielsen. “Video Stippling”. In: *Advances Concepts for Intelligent Vision Systems - 13th International Conference, ACIVS 2011, Ghent, Belgium, August 22-25, 2011. Proceedings*. Ed. by Jacques Blanc-Talon et al. Vol. 6915. Lecture Notes in Computer Science. Springer, 2011, pp. 384–395. DOI: 10.1007/978-3-642-23687-7\35. URL: https://doi.org/10.1007/978-3-642-23687-7%5C_35.
- [202] Matthew J. Katz and Frank Nielsen. “On Piercing Sets of Objects”. In: *Proceedings of the Twelfth Annual Symposium on Computational Geometry, Philadelphia, PA, USA, May 24-26, 1996*. Ed. by Sue Whitesides. ACM, 1996, pp. 113–121. DOI: 10.1145/237218.237253. URL: <https://doi.org/10.1145/237218.237253>.

- [203] Matthew J. Katz, Frank Nielsen, and Michael Segal. “Maintenance of a Piercing Set for Intervals with Applications”. In: *Algorithms and Computation, 11th International Conference, ISAAC 2000, Taipei, Taiwan, December 18-20, 2000, Proceedings*. Ed. by D. T. Lee and Shang-Hua Teng. Vol. 1969. Lecture Notes in Computer Science. Springer, 2000, pp. 552–563. DOI: 10.1007/3-540-40996-3_47. URL: https://doi.org/10.1007/3-540-40996-3%5C_47.
- [204] Matthew J. Katz, Frank Nielsen, and Michael Segal. “Shooter Location through Piercing Sets”. In: *EuroCG. 2000*, pp. 55–58.
- [205] Wu Lin et al. “Simplifying Momentum-based Positive-definite Submanifold Optimization with Applications to Deep Learning”. In: *International Conference on Machine Learning, ICML 2023, 23-29 July 2023, Honolulu, Hawaii, USA*. Ed. by Andreas Krause et al. Vol. 202. Proceedings of Machine Learning Research. PMLR, 2023, pp. 21026–21050. URL: <https://proceedings.mlr.press/v202/lin23c.html>.
- [206] Wu Lin et al. “Tractable structured natural-gradient descent using local parameterizations”. In: *Proceedings of the 38th International Conference on Machine Learning, ICML 2021, 18-24 July 2021, Virtual Event*. Ed. by Marina Meila and Tong Zhang. Vol. 139. Proceedings of Machine Learning Research. PMLR, 2021, pp. 6680–6691. URL: <http://proceedings.mlr.press/v139/lin21e.html>.
- [207] Meizhu Liu et al. “Total Bregman divergence and its applications to shape retrieval”. In: *The Twenty-Third IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2010, San Francisco, CA, USA, 13-18 June 2010*. IEEE Computer Society, 2010, pp. 3463–3468. DOI: 10.1109/CVPR.2010.5539979. URL: <https://doi.org/10.1109/CVPR.2010.5539979>.
- [208] Stéphane Marchand-Maillet et al. “Quantifying the Invariance and Robustness of Permutation-Based Indexing Schemes”. In: *Similarity Search and Applications - 9th International Conference, SISAP 2016, Tokyo, Japan, October 24-26, 2016. Proceedings*. Ed. by Laurent Amsaleg, Michael E. Houle, and Erich Schubert. Vol. 9939. Lecture Notes in Computer Science. 2016, pp. 79–92. DOI: 10.1007/978-3-319-46759-7_6. URL: https://doi.org/10.1007/978-3-319-46759-7%5C_6.
- [209] Gautier Marti, Victor Goubet, and Frank Nielsen. “cCorrGAN: Conditional Correlation GAN for Learning Empirical Conditional Distributions in the Elliptope”. In: *Geometric Science of Information - 5th International Conference, GSI 2021, Paris, France, July 21-23, 2021, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 12829. Lecture Notes in Computer Sci-

- ence. Springer, 2021, pp. 613–620. DOI: 10.1007/978-3-030-80209-7_66. URL: https://doi.org/10.1007/978-3-030-80209-7%5C_66.
- [210] Gautier Marti, Frank Nielsen, and Philippe Donnat. “Optimal copula transport for clustering multivariate time series”. In: *2016 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2016, Shanghai, China, March 20-25, 2016*. IEEE, 2016, pp. 2379–2383. DOI: 10.1109/ICASSP.2016.7472103. URL: <https://doi.org/10.1109/ICASSP.2016.7472103>.
 - [211] Gautier Marti et al. “A Proposal of a Methodological Framework with Experimental Guidelines to Investigate Clustering Stability on Financial Time Series”. In: *14th IEEE International Conference on Machine Learning and Applications, ICMLA 2015, Miami, FL, USA, December 9-11, 2015*. Ed. by Tao Li et al. IEEE, 2015, pp. 32–37. DOI: 10.1109/ICMLA.2015.11. URL: <https://doi.org/10.1109/ICMLA.2015.11>.
 - [212] Gautier Marti et al. “Clustering Financial Time Series: How Long Is Enough?”. In: *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence, IJCAI 2016, New York, NY, USA, 9-15 July 2016*. Ed. by Subbarao Kambhampati. IJCAI/AAAI Press, 2016, pp. 2583–2589. URL: <http://www.ijcai.org/Abstract/16/367>.
 - [213] Gautier Marti et al. “Clustering Random Walk Time Series”. In: *Geometric Science of Information - Second International Conference, GSI 2015, Palaiseau, France, October 28-30, 2015, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 9389. Lecture Notes in Computer Science. Springer, 2015, pp. 675–684. DOI: 10.1007/978-3-319-25040-3_72. URL: https://doi.org/10.1007/978-3-319-25040-3%5C_72.
 - [214] Gautier Marti et al. “Exploring and measuring non-linear correlations: Copulas, Lightspeed Transportation and Clustering”. In: *Proceedings of the NIPS 2016 Time Series Workshop, co-located with the 30th Annual Conference on Neural Information Processing Systems (NIPS 2016), Barcelona, Spain, December 9, 2016*. Ed. by Oren Anava et al. Vol. 55. JMLR Workshop and Conference Proceedings. JMLR.org, 2016, pp. 59–69. URL: <http://proceedings.mlr.press/v55/marti16.html>.
 - [215] Gautier Marti et al. “Optimal transport vs. Fisher-Rao distance between copulas for clustering multivariate time series”. In: *IEEE Statistical Signal Processing Workshop, SSP 2016, Palma de Mallorca, Spain, June 26-29, 2016*. IEEE, 2016, pp. 1–5. DOI: 10.1109/SSP.2016.7551770. URL: <https://doi.org/10.1109/SSP.2016.7551770>.

- [216] Vaden Masrani et al. “q-Paths: Generalizing the geometric annealing path using power means”. In: *Proceedings of the Thirty-Seventh Conference on Uncertainty in Artificial Intelligence, UAI 2021, Virtual Event, 27-30 July 2021*. Ed. by Cassio P. de Campos, Marloes H. Maathuis, and Erik Quaeghebeur. Vol. 161. Proceedings of Machine Learning Research. AUAI Press, 2021, pp. 1938–1947. URL: <https://proceedings.mlr.press/v161/masrani21a.html>.
- [217] Shigeo Morishima et al. “HYPER MASK - Projecting a Virtual Face onto a Moving Real Object”. In: *22nd Annual Conference of the European Association for Computer Graphics, Eurographics 2001 - Short Presentations, Manchester, UK, September 3-7, 2001*. Ed. by Jonathan C. Roberts. Eurographics Association, 2001. DOI: 10.2312/EGS.20011014. URL: <https://doi.org/10.2312/egs.20011014>.
- [218] Boris Muzellec et al. “Tsallis Regularized Optimal Transport and Ecological Inference”. In: *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence, February 4-9, 2017, San Francisco, California, USA*. Ed. by Satinder Singh and Shaul Markovitch. AAAI Press, 2017, pp. 2387–2393. DOI: 10.1609/AAAI.V31I1.10854. URL: <https://doi.org/10.1609/aaai.v31i1.10854>.
- [219] Frank Nielsen. “Abstracts of the LIX Fall Colloquium 2008: Emerging Trends in Visual Computing”. In: *Emerging Trends in Visual Computing, LIX Fall Colloquium, ETVC 2008, Palaiseau, France, November 18-20, 2008. Revised Invited Papers*. Ed. by Frank Nielsen. Vol. 5416. Lecture Notes in Computer Science. Springer, 2008, pp. 1–12. DOI: 10.1007/978-3-642-00826-9_1. URL: https://doi.org/10.1007/978-3-642-00826-9_1.
- [220] Frank Nielsen. “Closed-form information-theoretic divergences for statistical mixtures”. In: *Proceedings of the 21st International Conference on Pattern Recognition, ICPR 2012, Tsukuba, Japan, November 11-15, 2012*. IEEE Computer Society, 2012, pp. 1723–1726. URL: <https://ieeexplore.ieee.org/document/6460482/>.
- [221] Frank Nielsen. “Fast Stabbing of Boxes in High Dimensions”. In: *Proceedings of the 8th Canadian Conference on Computational Geometry, Carleton University, Ottawa, Canada, August 12-15, 1996*. Ed. by Frank Fiala, Evangelos Kranakis, and Jörg-Rüdiger Sack. Carleton University Press, 1996, pp. 87–92. URL: http://www.cccg.ca/proceedings/1996/cccg1996%5C_0015.pdf.
- [222] Frank Nielsen. “Fisher-Rao and pullback Hilbert cone distances on the multivariate Gaussian manifold with applications to simplification and quantization of mixtures”. In: *Topological, Algebraic and Geometric Learning Workshops*

- 2023, 28 July 2023, Honolulu, HI, USA. Ed. by Timothy Doster et al. Vol. 221. Proceedings of Machine Learning Research. PMLR, 2023, pp. 488–504. URL: <https://proceedings.mlr.press/v221/nielsen23b.html>.
- [223] Frank Nielsen. “Grouping and Querying: A Paradigm to Get Output-Sensitive Algorithms”. In: *Discrete and Computational Geometry, Japanese Conference, JCDCG’98, Tokyo, Japan, December 9-12, 1998, Revised Papers*. Ed. by Jin Akiyama, Mikio Kano, and Masatsugu Urabe. Vol. 1763. Lecture Notes in Computer Science. Springer, 1998, pp. 250–257. DOI: 10.1007/978-3-540-46515-7_21. URL: https://doi.org/10.1007/978-3-540-46515-7%5C_21.
 - [224] Frank Nielsen. “High Resolution Full Spherical Videos”. In: *2002 International Symposium on Information Technology (ITCC 2002), 8-10 April 2002, Las Vegas, NV, USA*. IEEE Computer Society, 2002, pp. 260–267. DOI: 10.1109/ITCC.2002.1000397. URL: <https://doi.org/10.1109/ITCC.2002.1000397>.
 - [225] Frank Nielsen. “Hypothesis Testing, Information Divergence and Computational Geometry”. In: *Geometric Science of Information - First International Conference, GSI 2013, Paris, France, August 28-30, 2013. Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 8085. Lecture Notes in Computer Science. Springer, 2013, pp. 241–248. DOI: 10.1007/978-3-642-40020-9_25. URL: https://doi.org/10.1007/978-3-642-40020-9%5C_25.
 - [226] Frank Nielsen. “K-MLE: A fast algorithm for learning statistical mixture models”. In: *2012 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2012, Kyoto, Japan, March 25-30, 2012*. IEEE, 2012, pp. 869–872. DOI: 10.1109/ICASSP.2012.6288022. URL: <https://doi.org/10.1109/ICASSP.2012.6288022>.
 - [227] Frank Nielsen. “On point covers of c-oriented polygons”. In: *Proceedings of the 10th Canadian Conference on Computational Geometry, McGill University, Montréal, Québec, Canada, August 10-12, 1998*. 1998. URL: <http://cgm.cs.mcgill.ca/cccg98/proceedings/cccg98-nielsen-point.ps.gz>.
 - [228] Frank Nielsen. “Pattern Learning and Recognition on Statistical Manifolds: An Information-Geometric Review”. In: *Similarity-Based Pattern Recognition - Second International Workshop, SIMBAD 2013, York, UK, July 3-5, 2013. Proceedings*. Ed. by Edwin R. Hancock and Marcello Pelillo. Vol. 7953. Lecture Notes in Computer Science. Springer, 2013, pp. 1–25. DOI: 10.1007/978-3-642-39140-8_1. URL: https://doi.org/10.1007/978-3-642-39140-8%5C_1.

- [229] Frank Nielsen. “Perspective click-and-drag area selections in pictures”. In: *Proceedings of the 13. IAPR International Conference on Machine Vision Applications, MVA 2013, Kyoto, Japan, May 20-23, 2013*. 2013, pp. 29–32. URL: <http://www.mva-org.jp/Proceedings/2013USB/papers/03-03.pdf>.
- [230] Frank Nielsen. “Perspective dragging: quick area selection in photos”. In: *SIG-GRAPH Asia 2012 Poster Proceedings, Singapore, Singapore, November 28 - December 01, 2012*. Ed. by Qunsheng Peng and Haizhou Li. ACM, 2012, p. 18. DOI: 10.1145/2407156.2407177. URL: <https://doi.org/10.1145/2407156.2407177>.
- [231] Frank Nielsen. “Plenoptic path and its applications”. In: *Proceedings of the 2003 International Conference on Image Processing, ICIP 2003, Barcelona, Catalonia, Spain, September 14-18, 2003*. IEEE, 2003, pp. 793–796. DOI: 10.1109/ICIP.2003.1247081. URL: <https://doi.org/10.1109/ICIP.2003.1247081>.
- [232] Frank Nielsen. “Quasi-arithmetic Centers, Quasi-arithmetic Mixtures, and the Jensen-Shannon ∇ -Divergences”. In: *Geometric Science of Information - 6th International Conference, GSI 2023, St. Malo, France, August 30 - September 1, 2023, Proceedings, Part I*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 14071. Lecture Notes in Computer Science. Springer, 2023, pp. 147–156. DOI: 10.1007/978-3-031-38271-0_15. URL: https://doi.org/10.1007/978-3-031-38271-0_15.
- [233] Frank Nielsen. “Randomized Adaptive Algorithms for Mosaicing Systems”. In: *Proceedings of IAPR Workshop on Machine Vision Applications, MVA 1998, November 17-19, 1998, Chiba, Japan*. 1998, pp. 11–14. URL: <http://b2.cvl.iis.u-tokyo.ac.jp/mva/proceedings/CommemorativeDVD/1998/papers/1998011.pdf>.
- [234] Frank Nielsen. “The Chord Gap Divergence and a Generalization of the Bhattacharyya Distance”. In: *2018 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2018, Calgary, AB, Canada, April 15-20, 2018*. IEEE, 2018, pp. 2276–2280. DOI: 10.1109/ICASSP.2018.8462244. URL: <https://doi.org/10.1109/ICASSP.2018.8462244>.
- [235] Frank Nielsen. “The Statistical Minkowski Distances: Closed-Form Formula for Gaussian Mixture Models”. In: *Geometric Science of Information - 4th International Conference, GSI 2019, Toulouse, France, August 27-29, 2019, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 11712. Lecture Notes in Computer Science. Springer, 2019, pp. 359–367. DOI: 10.1007/978-3-030-26980-7_37. URL: https://doi.org/10.1007/978-3-030-26980-7_37.

- [236] Frank Nielsen, Alexis André, and Shigeru Tajima. “Real-Time Spherical Videos from a Fast Rotating Camera”. In: *Image Analysis and Recognition, 5th International Conference, ICIAR 2008, Póvoa de Varzim, Portugal, June 25-27, 2008. Proceedings*. Ed. by Aurélio C. Campilho and Mohamed S. Kamel. Vol. 5112. Lecture Notes in Computer Science. Springer, 2008, pp. 326–335. DOI: 10.1007/978-3-540-69812-8_32. URL: https://doi.org/10.1007/978-3-540-69812-8%5C_32.
- [237] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. “On Bregman Voronoi diagrams”. In: *Proceedings of the Eighteenth Annual ACM-SIAM Symposium on Discrete Algorithms, SODA 2007, New Orleans, Louisiana, USA, January 7-9, 2007*. Ed. by Nikhil Bansal, Kirk Pruhs, and Clifford Stein. SIAM, 2007, pp. 746–755. URL: <http://dl.acm.org/citation.cfm?id=1283383.1283463>.
- [238] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. “Visualizing bregman voronoi diagrams”. In: *Proceedings of the 23rd ACM Symposium on Computational Geometry, Gyeongju, South Korea, June 6-8, 2007*. Ed. by Jeff Erickson. ACM, 2007, pp. 121–122. DOI: 10.1145/1247069.1247089. URL: <https://doi.org/10.1145/1247069.1247089>.
- [239] Frank Nielsen, Sylvain Boltz, and Olivier Schwander. “Bhattacharyya Clustering with Applications to Mixture Simplifications”. In: *20th International Conference on Pattern Recognition, ICPR 2010, Istanbul, Turkey, 23-26 August 2010*. IEEE Computer Society, 2010, pp. 1437–1440. DOI: 10.1109/ICPR.2010.355. URL: <https://doi.org/10.1109/ICPR.2010.355>.
- [240] Frank Nielsen, Vincent Garcia, and Richard Nock. “Simplifying Gaussian mixture models via entropic quantization”. In: *17th European Signal Processing Conference, EUSIPCO 2009, Glasgow, Scotland, UK, August 24-28, 2009*. IEEE, 2009, pp. 2012–2016. URL: <https://ieeexplore.ieee.org/document/7077426/>.
- [241] Frank Nielsen and Gaëtan Hadjeres. “Approximating Covering and Minimum Enclosing Balls in Hyperbolic Geometry”. In: *Geometric Science of Information - Second International Conference, GSI 2015, Palaiseau, France, October 28-30, 2015, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 9389. Lecture Notes in Computer Science. Springer, 2015, pp. 586–594. DOI: 10.1007/978-3-319-25040-3_63. URL: https://doi.org/10.1007/978-3-319-25040-3%5C_63.
- [242] Frank Nielsen and Gaëtan Hadjeres. “Quasiconvex Jensen Divergences and Quasiconvex Bregman Divergences”. In: *Geometric Structures of Statistical Physics, Information Geometry, and Learning - SPIGL’20, Les Houches, France,*

- July 27-31. Ed. by Frédéric Barbaresco and Frank Nielsen. Vol. 361. Springer, 2020, pp. 196–218. DOI: 10.1007/978-3-030-77957-3_11. URL: https://doi.org/10.1007/978-3-030-77957-3%5C_11.
- [243] Frank Nielsen and Nicolas de Mauroy. “On the Precision of Textures”. In: *Proceedings of the IAPR Conference on Machine Vision Applications (IAPR MVA 2000)*, November 28-30, 2000, Tokyo, Japan. 2000, pp. 31–34. URL: <http://b2.cvl.iis.u-tokyo.ac.jp/mva/proceedings/CommemorativeDVD/2000/papers/2000031.pdf>.
 - [244] Frank Nielsen, Boris Muzellec, and Richard Nock. “Classification with mixtures of curved mahalanobis metrics”. In: *2016 IEEE International Conference on Image Processing, ICIP 2016, Phoenix, AZ, USA, September 25-28, 2016*. IEEE, 2016, pp. 241–245. DOI: 10.1109/ICIP.2016.7532355. URL: <https://doi.org/10.1109/ICIP.2016.7532355>.
 - [245] Frank Nielsen and Richard Nock. “Approximating Smallest Enclosing Balls”. In: *Computational Science and Its Applications - ICCSA 2004, International Conference, Assisi, Italy, May 14-17, 2004, Proceedings, Part III*. Ed. by Antonio Laganà et al. Vol. 3045. Lecture Notes in Computer Science. Springer, 2004, pp. 147–157. DOI: 10.1007/978-3-540-24767-8_16. URL: https://doi.org/10.1007/978-3-540-24767-8%5C_16.
 - [246] Frank Nielsen and Richard Nock. “Approximating smallest enclosing disks”. In: *Proceedings of the 16th Canadian Conference on Computational Geometry, CCCG’04, Concordia University, Montréal, Québec, Canada, August 9-11, 2004*. 2004, pp. 124–127. URL: <http://www.cccg.ca/proceedings/2004/16.pdf>.
 - [247] Frank Nielsen and Richard Nock. “Bregman Divergences from Comparative Convexity”. In: *Geometric Science of Information - Third International Conference, GSI 2017, Paris, France, November 7-9, 2017, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 10589. Lecture Notes in Computer Science. Springer, 2017, pp. 639–647. DOI: 10.1007/978-3-319-68445-1_74. URL: https://doi.org/10.1007/978-3-319-68445-1%5C_74.
 - [248] Frank Nielsen and Richard Nock. “Bregman sided and symmetrized centroids”. In: *19th International Conference on Pattern Recognition (ICPR 2008)*, December 8-11, 2008, Tampa, Florida, USA. IEEE Computer Society, 2008, pp. 1–4. DOI: 10.1109/ICPR.2008.4761794. URL: <https://doi.org/10.1109/ICPR.2008.4761794>.

- [249] Frank Nielsen and Richard Nock. “ClickRemoval: interactive pinpoint image object removal”. In: *Proceedings of the 13th ACM International Conference on Multimedia, Singapore, November 6-11, 2005*. Ed. by HongJiang Zhang et al. ACM, 2005, pp. 315–318. DOI: 10.1145/1101149.1101214. URL: <https://doi.org/10.1145/1101149.1101214>.
- [250] Frank Nielsen and Richard Nock. “Clustering Multivariate Normal Distributions”. In: *Emerging Trends in Visual Computing, LIX Fall Colloquium, ETVIC 2008, Palaiseau, France, November 18-20, 2008. Revised Invited Papers*. Ed. by Frank Nielsen. Vol. 5416. Lecture Notes in Computer Science. Springer, 2008, pp. 164–174. DOI: 10.1007/978-3-642-00826-9_7. URL: https://doi.org/10.1007/978-3-642-00826-9%5C_7.
- [251] Frank Nielsen and Richard Nock. “Computing Statistical Divergences with Sigma Points”. In: *Geometric Science of Information - 5th International Conference, GSI 2021, Paris, France, July 21-23, 2021, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 12829. Lecture Notes in Computer Science. Springer, 2021, pp. 677–684. DOI: 10.1007/978-3-030-80209-7_72. URL: https://doi.org/10.1007/978-3-030-80209-7%5C_72.
- [252] Frank Nielsen and Richard Nock. “Consensus Region Merging for Image Segmentation”. In: *2nd IAPR Asian Conference on Pattern Recognition, ACPR 2013, Naha, Japan, November 5-8, 2013*. IEEE, 2013, pp. 325–329. DOI: 10.1109/ACPR.2013.142. URL: <https://doi.org/10.1109/ACPR.2013.142>.
- [253] Frank Nielsen and Richard Nock. “Entropies and cross-entropies of exponential families”. In: *Proceedings of the International Conference on Image Processing, ICIP 2010, September 26-29, Hong Kong, China*. IEEE, 2010, pp. 3621–3624. DOI: 10.1109/ICIP.2010.5652054. URL: <https://doi.org/10.1109/ICIP.2010.5652054>.
- [254] Frank Nielsen and Richard Nock. “Fast Graph Segmentation Based on Statistical Aggregation Phenomena”. In: *Proceedings of the IAPR Conference on Machine Vision Applications (IAPR MVA 2007), May 16-18, 2007, Tokyo, Japan*. 2007, pp. 150–153. URL: <http://b2.cvl.iis.u-tokyo.ac.jp/mva/proceedings/2007CD/papers/03-30.pdf>.
- [255] Frank Nielsen and Richard Nock. “Hyperbolic Voronoi Diagrams Made Easy”. In: *Proceedings of the 2010 International Conference on Computational Science and Its Applications, ICCSA 2010, Fukuoka, Japan, March 23-26, 2010*. Ed. by Bernady O. Apduhan et al. IEEE Computer Society, 2010, pp. 74–80. DOI: 10.1109/ICCSA.2010.37. URL: <https://doi.org/10.1109/ICCSA.2010.37>.

- [256] Frank Nielsen and Richard Nock. “Interactive Pinpoint Image Object Removal”. In: *2005 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2005), 20-26 June 2005, San Diego, CA, USA*. IEEE Computer Society, 2005, p. 1191. DOI: 10.1109/CVPR.2005.193. URL: <https://doi.org/10.1109/CVPR.2005.193>.
- [257] Frank Nielsen and Richard Nock. “Interactive Point-and-Click Segmentation for Object Removal in Digital Images”. In: *Computer Vision in Human-Computer Interaction, ICCV 2005 Workshop on HCI, Beijing, China, October 21, 2005, Proceedings*. Ed. by Nicu Sebe, Michael S. Lew, and Thomas S. Huang. Vol. 3766. Lecture Notes in Computer Science. Springer, 2005, pp. 131–140. DOI: 10.1007/11573425_13. URL: https://doi.org/10.1007/11573425_13.
- [258] Frank Nielsen and Richard Nock. “Jensen-Bregman Voronoi Diagrams and Centroidal Tessellations”. In: *Seventh International Symposium on Voronoi Diagrams in Science and Engineering, ISVD 2010, Quebec, Canada, June 28-30, 2010*. Ed. by Mir Abolfazl Mostafavi. IEEE Computer Society, 2010, pp. 56–65. DOI: 10.1109/ISVD.2010.17. URL: <https://doi.org/10.1109/ISVD.2010.17>.
- [259] Frank Nielsen and Richard Nock. “On approximating the smallest enclosing Bregman Balls”. In: *Proceedings of the 22nd ACM Symposium on Computational Geometry, Sedona, Arizona, USA, June 5-7, 2006*. Ed. by Nina Amenta and Otfried Cheong. ACM, 2006, pp. 485–486. DOI: 10.1145/1137856.1137931. URL: <https://doi.org/10.1145/1137856.1137931>.
- [260] Frank Nielsen and Richard Nock. “On Region Merging: The Statistical Soundness of Fast Sorting, with Applications”. In: *2003 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2003), 16-22 June 2003, Madison, WI, USA*. IEEE Computer Society, 2003, pp. 19–26. DOI: 10.1109/CVPR.2003.1211447. URL: <https://doi.org/10.1109/CVPR.2003.1211447>.
- [261] Frank Nielsen and Richard Nock. “On the Geometry of Mixtures of Prescribed Distributions”. In: *2018 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2018, Calgary, AB, Canada, April 15-20, 2018*. IEEE, 2018, pp. 2861–2865. DOI: 10.1109/ICASSP.2018.8461869. URL: <https://doi.org/10.1109/ICASSP.2018.8461869>.
- [262] Frank Nielsen and Richard Nock. “On the Smallest Enclosing Information Disk”. In: *Proceedings of the 18th Annual Canadian Conference on Computational Geometry, CCCG 2006, August 14-16, 2006, Queen’s University, Ontario, Canada*. 2006. URL: <http://www.cs.queensu.ca/cccg/papers/cccg34.pdf>.

- [263] Frank Nielsen and Richard Nock. “Patch Matching with Polynomial Exponential Families and Projective Divergences”. In: *Similarity Search and Applications - 9th International Conference, SISAP 2016, Tokyo, Japan, October 24-26, 2016. Proceedings*. Ed. by Laurent Amsaleg, Michael E. Houle, and Erich Schubert. Vol. 9939. Lecture Notes in Computer Science. 2016, pp. 109–116. DOI: 10.1007/978-3-319-46759-7_8. URL: https://doi.org/10.1007/978-3-319-46759-7%5C_8.
- [264] Frank Nielsen and Richard Nock. “Quantum Voronoi diagrams and Holevo channel capacity for 1-qubit quantum states”. In: *2008 IEEE International Symposium on Information Theory, ISIT 2008, Toronto, ON, Canada, July 6-11, 2008*. Ed. by Frank R. Kschischang and En-Hui Yang. IEEE, 2008, pp. 96–100. DOI: 10.1109/ISIT.2008.4594955. URL: <https://doi.org/10.1109/ISIT.2008.4594955>.
- [265] Frank Nielsen and Richard Nock. “The Bregman Chord Divergence”. In: *Geometric Science of Information - 4th International Conference, GSI 2019, Toulouse, France, August 27-29, 2019, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 11712. Lecture Notes in Computer Science. Springer, 2019, pp. 299–308. DOI: 10.1007/978-3-030-26980-7_31. URL: https://doi.org/10.1007/978-3-030-26980-7%5C_31.
- [266] Frank Nielsen and Richard Nock. “The Dual Voronoi Diagrams with Respect to Representational Bregman Divergences”. In: *Sixth International Symposium on Voronoi Diagrams, ISVD 2009, Copenhagen, Denmark, June 23-26, 2009*. Ed. by Francois Anton. IEEE Computer Society, 2009, pp. 71–78. DOI: 10.1109/ISVD.2009.15. URL: <https://doi.org/10.1109/ISVD.2009.15>.
- [267] Frank Nielsen and Richard Nock. “Total Jensen divergences: Definition, properties and clustering”. In: *2015 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2015, South Brisbane, Queensland, Australia, April 19-24, 2015*. IEEE, 2015, pp. 2016–2020. DOI: 10.1109/ICASSP.2015.7178324. URL: <https://doi.org/10.1109/ICASSP.2015.7178324>.
- [268] Frank Nielsen and Richard Nock. “Visualizing hyperbolic Voronoi diagrams”. In: *30th Annual Symposium on Computational Geometry, SoCG’14, Kyoto, Japan, June 08 - 11, 2014*. Ed. by Siu-Wing Cheng and Olivier Devillers. ACM, 2014, p. 90. DOI: 10.1145/2582112.2595647. URL: <https://doi.org/10.1145/2582112.2595647>.
- [269] Frank Nielsen and Kazuki Okamura. “On f-divergences Between Cauchy Distributions”. In: *Geometric Science of Information - 5th International Conference, GSI 2021, Paris, France, July 21-23, 2021, Proceedings*. Ed. by Frank

- Nielsen and Frédéric Barbaresco. Vol. 12829. Lecture Notes in Computer Science. Springer, 2021, pp. 799–807. DOI: 10.1007/978-3-030-80209-7_86. URL: https://doi.org/10.1007/978-3-030-80209-7%5C_86.
- [270] Frank Nielsen and Kazuki Okamura. “On the f-Divergences Between Hyperboloid and Poincaré Distributions”. In: *Geometric Science of Information - 6th International Conference, GSI 2023, St. Malo, France, August 30 - September 1, 2023, Proceedings, Part I*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 14071. Lecture Notes in Computer Science. Springer, 2023, pp. 176–185. DOI: 10.1007/978-3-031-38271-0_18. URL: https://doi.org/10.1007/978-3-031-38271-0%5C_18.
- [271] Frank Nielsen, Shigeru Owada, and Yuichi Hasegawa. “Autoframing: A Recommendation System for Detecting Undesirable Elements and Cropping Automatically Photos”. In: *Proceedings of the 2006 IEEE International Conference on Multimedia and Expo, ICME 2006, July 9-12 2006, Toronto, Ontario, Canada*. IEEE Computer Society, 2006, pp. 417–420. DOI: 10.1109/ICME.2006.262525. URL: <https://doi.org/10.1109/ICME.2006.262525>.
- [272] Frank Nielsen, Paolo Piro, and Michel Barlaud. “Bregman vantage point trees for efficient nearest Neighbor Queries”. In: *Proceedings of the 2009 IEEE International Conference on Multimedia and Expo, ICME 2009, June 28 - July 2, 2009, New York City, NY, USA*. IEEE, 2009, pp. 878–881. DOI: 10.1109/ICME.2009.5202635. URL: <https://doi.org/10.1109/ICME.2009.5202635>.
- [273] Frank Nielsen and Aurélien Sérandour. “Accuracy of distance metric learning algorithms”. In: *Proceedings of the 2nd ACM SIGKDD Workshop on Data Mining using Matrices and Tensors, Paris, France, June 28, 2009*. Ed. by Chris H. Q. Ding and Tao Li. ACM, 2009. DOI: 10.1145/1581114.1581115. URL: <https://doi.org/10.1145/1581114.1581115>.
- [274] Frank Nielsen and Laëtitia Shao. “On Balls in a Hilbert Polygonal Geometry (Multimedia Contribution)”. In: *33rd International Symposium on Computational Geometry, SoCG 2017, July 4-7, 2017, Brisbane, Australia*. Ed. by Boris Aronov and Matthew J. Katz. Vol. 77. LIPIcs. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2017, 67:1–67:4. DOI: 10.4230/LIPICS.SOCG.2017.67. URL: <https://doi.org/10.4230/LIPICS.SOCG.2017.67>.
- [275] Frank Nielsen and Ke Sun. “Combinatorial bounds on the α -divergence of univariate mixture models”. In: *2017 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2017, New Orleans, LA, USA, March 5-9, 2017*. IEEE, 2017, pp. 4476–4480. DOI: 10.1109/ICASSP.2017.7953003. URL: <https://doi.org/10.1109/ICASSP.2017.7953003>.

- [276] Frank Nielsen and Ke Sun. “Guaranteed Deterministic Bounds on the total variation Distance between univariate mixtures”. In: *28th IEEE International Workshop on Machine Learning for Signal Processing, MLSP 2018, Aalborg, Denmark, September 17-20, 2018*. IEEE, 2018, pp. 1–6. DOI: 10.1109/MLSP.2018.8517093. URL: <https://doi.org/10.1109/MLSP.2018.8517093>.
- [277] Frank Nielsen and Ke Sun. “Non-linear Embeddings in Hilbert Simplex Geometry”. In: *Topological, Algebraic and Geometric Learning Workshops 2023, 28 July 2023, Honolulu, HI, USA*. Ed. by Timothy Doster et al. Vol. 221. Proceedings of Machine Learning Research. PMLR, 2023, pp. 254–266. URL: <https://proceedings.mlr.press/v221/nielsen23a.html>.
- [278] Frank Nielsen, Ke Sun, and Stéphane Marchand-Maillet. “k-Means Clustering with Hölder Divergences”. In: *Geometric Science of Information - Third International Conference, GSI 2017, Paris, France, November 7-9, 2017, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 10589. Lecture Notes in Computer Science. Springer, 2017, pp. 856–863. DOI: 10.1007/978-3-319-68445-1_98. URL: https://doi.org/10.1007/978-3-319-68445-1_98.
- [279] Frank Nielsen et al. “Jensen divergence based SPD matrix means and applications”. In: *Proceedings of the 21st International Conference on Pattern Recognition, ICPR 2012, Tsukuba, Japan, November 11-15, 2012*. IEEE Computer Society, 2012, pp. 2841–2844. URL: <https://ieeexplore.ieee.org/document/6460757/>.
- [280] Richard Nock and Frank Nielsen. “A Real Generalization of Discrete AdaBoost”. In: *ECAI 2006, 17th European Conference on Artificial Intelligence, August 29 - September 1, 2006, Riva del Garda, Italy, Including Prestigious Applications of Intelligent Systems (PAIS 2006), Proceedings*. Ed. by Gerhard Brewka et al. Vol. 141. Frontiers in Artificial Intelligence and Applications. IOS Press, 2006, pp. 509–515.
- [281] Richard Nock and Frank Nielsen. “An Abstract Weighting Framework for Clustering Algorithms”. In: *Proceedings of the Fourth SIAM International Conference on Data Mining, Lake Buena Vista, Florida, USA, April 22-24, 2004*. Ed. by Michael W. Berry et al. SIAM, 2004, pp. 200–209. DOI: 10.1137/1.9781611972740.19. URL: <https://doi.org/10.1137/1.9781611972740.19>.
- [282] Richard Nock and Frank Nielsen. “Fitting the Smallest Enclosing Bregman Ball”. In: *Machine Learning: ECML 2005, 16th European Conference on Machine Learning, Porto, Portugal, October 3-7, 2005, Proceedings*. Ed. by João Gama et al. Vol. 3720. Lecture Notes in Computer Science. Springer, 2005,

- pp. 649–656. DOI: 10.1007/11564096_65. URL: https://doi.org/10.1007/11564096%5C_65.
- [283] Richard Nock and Frank Nielsen. “Grouping with Bias Revisited”. In: *2004 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 2004), with CD-ROM, 27 June - 2 July 2004, Washington, DC, USA*. IEEE Computer Society, 2004, pp. 460–465. DOI: 10.1109/CVPR.2004.120. URL: <https://doi.ieeecomputersociety.org/10.1109/CVPR.2004.120>.
 - [284] Richard Nock and Frank Nielsen. “Improving Clustering Algorithms through Constrained Convex Optimization”. In: *17th International Conference on Pattern Recognition, ICPR 2004, Cambridge, UK, August 23-26, 2004*. IEEE Computer Society, 2004, pp. 557–560. DOI: 10.1109/ICPR.2004.1333833. URL: <https://doi.org/10.1109/ICPR.2004.1333833>.
 - [285] Richard Nock and Frank Nielsen. “Information-geometric lenses for multiple foci+contexts interfaces”. In: *SIGGRAPH Asia 2013, Hong Kong, China, November 19-22, 2013, Technical Briefs*. Ed. by Baoquan Chen and Andrei Sharf. ACM, 2013, 18:1–18:4. DOI: 10.1145/2542355.2542378. URL: <https://doi.org/10.1145/2542355.2542378>.
 - [286] Richard Nock and Frank Nielsen. “Intrinsic Geometries in Learning”. In: *Emerging Trends in Visual Computing, LIX Fall Colloquium, ETVC 2008, Palaiseau, France, November 18-20, 2008. Revised Invited Papers*. Ed. by Frank Nielsen. Vol. 5416. Lecture Notes in Computer Science. Springer, 2008, pp. 175–215. DOI: 10.1007/978-3-642-00826-9_8. URL: https://doi.org/10.1007/978-3-642-00826-9%5C_8.
 - [287] Richard Nock and Frank Nielsen. “On the Efficient Minimization of Classification Calibrated Surrogates”. In: *Advances in Neural Information Processing Systems 21, Proceedings of the Twenty-Second Annual Conference on Neural Information Processing Systems, Vancouver, British Columbia, Canada, December 8-11, 2008*. Ed. by Daphne Koller et al. Curran Associates, Inc., 2008, pp. 1201–1208. URL: <https://proceedings.neurips.cc/paper/2008/hash/077e29b11be80ab57e1a2ecabb7da330-Abstract.html>.
 - [288] Richard Nock and Frank Nielsen. “On the efficient minimization of convex surrogates in supervised learning”. In: *19th International Conference on Pattern Recognition (ICPR 2008), December 8-11, 2008, Tampa, Florida, USA*. IEEE Computer Society, 2008, pp. 1–4. DOI: 10.1109/ICPR.2008.4761667. URL: <https://doi.org/10.1109/ICPR.2008.4761667>.

- [289] Richard Nock, Frank Nielsen, and Eric Briys. “Non-linear book manifolds: learning from associations the dynamic geometry of digital libraries”. In: *13th ACM/IEEE-CS Joint Conference on Digital Libraries, JCDL '13, Indianapolis, IN, USA, July 22 - 26, 2013*. Ed. by J. Stephen Downie et al. ACM, 2013, pp. 313–322. DOI: 10.1145/2467696.2467697. URL: <https://doi.org/10.1145/2467696.2467697>.
- [290] Richard Nock et al. “k-variates++: more pluses in the k-means++”. In: *Proceedings of the 33rd International Conference on Machine Learning, ICML 2016, New York City, NY, USA, June 19-24, 2016*. Ed. by Maria-Florina Balcan and Kilian Q. Weinberger. Vol. 48. JMLR Workshop and Conference Proceedings. JMLR.org, 2016, pp. 145–154. URL: <http://proceedings.mlr.press/v48/nock16.html>.
- [291] Richard Nock et al. “On tracking portfolios with certainty equivalents on a generalization of Markowitz model: the Fool, the Wise and the Adaptive”. In: *Proceedings of the 28th International Conference on Machine Learning, ICML 2011, Bellevue, Washington, USA, June 28 - July 2, 2011*. Ed. by Lise Getoor and Tobias Scheffer. Omnipress, 2011, pp. 73–80. URL: https://icml.cc/2011/papers/63%5C_icmlpaper.pdf.
- [292] Richard Nock et al. “Soft Uncoupling of Markov Chains for Permeable Language Distinction: A New Algorithm”. In: *ECAI 2006, 17th European Conference on Artificial Intelligence, August 29 - September 1, 2006, Riva del Garda, Italy, Including Prestigious Applications of Intelligent Systems (PAIS 2006), Proceedings*. Ed. by Gerhard Brewka et al. Vol. 141. Frontiers in Artificial Intelligence and Applications. IOS Press, 2006, pp. 823–824.
- [293] Shigeru Owada, Frank Nielsen, and Takeo Igarashi. “Copy-Paste Synthesis of 3D Geometry with Repetitive Patterns”. In: *Smart Graphics, 6th International Symposium, SG 2006, Vancouver, Canada, July 23-25, 2006, Proceedings*. Ed. by Andreas Butz et al. Vol. 4073. Lecture Notes in Computer Science. Springer, 2006, pp. 184–193. DOI: 10.1007/11795018_17. URL: https://doi.org/10.1007/11795018%5C_17.
- [294] Shigeru Owada, Frank Nielsen, and Takeo Igarashi. “Volume catcher”. In: *Proceedings of the 2005 Symposium on Interactive 3D Graphics, SI3D 2005, April 3-6, 2005, Washington, DC, USA*. Ed. by Anselmo Lastra et al. ACM, 2005, pp. 111–116. DOI: 10.1145/1053427.1053445. URL: <https://doi.org/10.1145/1053427.1053445>.
- [295] Shigeru Owada et al. “A Sketching Interface for Modeling the Internal Structures of 3D Shapes”. In: *Smart Graphics, Third International Symposium, SG 2003, Heidelberg, Germany, July 2-4, 2003, Proceedings*. Ed. by Andreas Butz,

- Antonio Krüger, and Patrick Olivier. Vol. 2733. Lecture Notes in Computer Science. Springer, 2003, pp. 49–57. DOI: 10.1007/3-540-37620-8_5. URL: https://doi.org/10.1007/3-540-37620-8%5C_5.
- [296] Shigeru Owada et al. “A sketching interface for modeling the internal structures of 3D shapes”. In: *International Conference on Computer Graphics and Interactive Techniques, SIGGRAPH 2006, Boston, Massachusetts, USA, July 30 - August 3, 2006, Courses*. Ed. by John W. Finnegan and Dave Shreiner. ACM, 2006, p. 12. DOI: 10.1145/1185657.1185773. URL: <https://doi.org/10.1145/1185657.1185773>.
- [297] Shigeru Owada et al. “A sketching interface for modeling the internal structures of 3D shapes”. In: *International Conference on Computer Graphics and Interactive Techniques, SIGGRAPH 2007, San Diego, California, USA, August 5-9, 2007, Courses*. Ed. by Sara McMains and Peter-Pike Sloan. ACM, 2007, p. 38. DOI: 10.1145/1281500.1281549. URL: <https://doi.org/10.1145/1281500.1281549>.
- [298] Shigeru Owada et al. “Customized Slider Bars for Adjusting Multi-dimension Parameter Sets”. In: *Smart Graphics, 7th International Symposium, SG 2007, Kyoto, Japan, June 25-27, 2007, Proceedings*. Ed. by Andreas Butz et al. Vol. 4569. Lecture Notes in Computer Science. Springer, 2007, pp. 230–232. DOI: 10.1007/978-3-540-73214-3_26. URL: https://doi.org/10.1007/978-3-540-73214-3%5C_26.
- [299] Shigeru Owada et al. “Projection plane processing for sketch-based volume segmentation”. In: *Proceedings of the 2008 IEEE International Symposium on Biomedical Imaging: From Nano to Macro, Paris, France, May 14-17, 2008*. IEEE, 2008, pp. 117–120. DOI: 10.1109/ISBI.2008.4540946. URL: <https://doi.org/10.1109/ISBI.2008.4540946>.
- [300] Giorgio Patrini et al. “Loss factorization, weakly supervised learning and label noise robustness”. In: *Proceedings of the 33rd International Conference on Machine Learning, ICML 2016, New York City, NY, USA, June 19-24, 2016*. Ed. by Maria-Florina Balcan and Kilian Q. Weinberger. Vol. 48. JMLR Workshop and Conference Proceedings. JMLR.org, 2016, pp. 708–717. URL: <http://proceedings.mlr.press/v48/patrini16.html>.
- [301] Giorgio Patrini et al. “Sinkhorn AutoEncoders”. In: *Proceedings of the Thirty-Fifth Conference on Uncertainty in Artificial Intelligence, UAI 2019, Tel Aviv, Israel, July 22-25, 2019*. Ed. by Amir Globerson and Ricardo Silva. Vol. 115. Proceedings of Machine Learning Research. AUAI Press, 2019, pp. 733–743. URL: <http://proceedings.mlr.press/v115/patrini20a.html>.

- [302] Claudio S. Pinhanez, Frank Nielsen, and Kim Binsted. “Projecting computer graphics on moving surfaces: a simple calibration and tracking method”. In: *Proceedings of the 26th Annual Conference on Computer Graphics and Interactive Techniques, SIGGRAPH 1999, Los Angeles, CA, USA, August 8-13, 1999, Abstracts and Applications*. Ed. by Jodi Giroux, Anne Richardson, and Jill Smolin. ACM, 1999, p. 266. DOI: 10.1145/311625.312166. URL: <https://doi.org/10.1145/311625.312166>.
- [303] Paolo Piro et al. “Boosting Bayesian MAP Classification”. In: *20th International Conference on Pattern Recognition, ICPR 2010, Istanbul, Turkey, 23-26 August 2010*. IEEE Computer Society, 2010, pp. 661–665. DOI: 10.1109/ICPR.2010.167. URL: <https://doi.org/10.1109/ICPR.2010.167>.
- [304] Paolo Piro et al. “K-NN boosting prototype learning for object classification”. In: *11th International Workshop on Image Analysis for Multimedia Interactive Services, WIAMIS 2010, Desenzano del Garda, Italy, April 12-14, 2010*. IEEE, 2010, pp. 1–4. URL: <https://ieeexplore.ieee.org/document/5617684/>.
- [305] Paolo Piro et al. “Multi-class Leveraged κ -NN for Image Classification”. In: *Computer Vision - ACCV 2010 - 10th Asian Conference on Computer Vision, Queenstown, New Zealand, November 8-12, 2010, Revised Selected Papers, Part III*. Ed. by Ron Kimmel, Reinhard Klette, and Akihiro Sugimoto. Vol. 6494. Lecture Notes in Computer Science. Springer, 2010, pp. 67–81. DOI: 10.1007/978-3-642-19318-7_6. URL: https://doi.org/10.1007/978-3-642-19318-7_6.
- [306] Christophe Saint-Jean and Frank Nielsen. “A New Implementation of k-MLE for Mixture Modeling of Wishart Distributions”. In: *Geometric Science of Information - First International Conference, GSI 2013, Paris, France, August 28-30, 2013. Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 8085. Lecture Notes in Computer Science. Springer, 2013, pp. 249–256. DOI: 10.1007/978-3-642-40020-9_26. URL: https://doi.org/10.1007/978-3-642-40020-9_26.
- [307] Christophe Saint-Jean and Frank Nielsen. “Online k-MLE for Mixture Modeling with Exponential Families”. In: *Geometric Science of Information - Second International Conference, GSI 2015, Palaiseau, France, October 28-30, 2015, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 9389. Lecture Notes in Computer Science. Springer, 2015, pp. 340–348. DOI: 10.1007/978-3-319-25040-3_37. URL: https://doi.org/10.1007/978-3-319-25040-3_37.

- [308] Olivier Schwander, Stéphane Marchand-Maillet, and Frank Nielsen. “Comix: Joint estimation and lightspeed comparison of mixture models”. In: *2016 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2016, Shanghai, China, March 20-25, 2016*. IEEE, 2016, pp. 2449–2453. DOI: 10.1109/ICASSP.2016.7472117. URL: <https://doi.org/10.1109/ICASSP.2016.7472117>.
- [309] Olivier Schwander and Frank Nielsen. “Bag-of-Components: An Online Algorithm for Batch Learning of Mixture Models”. In: *Geometric Science of Information - Second International Conference, GSI 2015, Palaiseau, France, October 28-30, 2015, Proceedings*. Ed. by Frank Nielsen and Frédéric Barbaresco. Vol. 9389. Lecture Notes in Computer Science. Springer, 2015, pp. 387–395. DOI: 10.1007/978-3-319-25040-3_42. URL: https://doi.org/10.1007/978-3-319-25040-3_42.
- [310] Olivier Schwander and Frank Nielsen. “Fast Learning of Gamma Mixture Models with k-MLE”. In: *Similarity-Based Pattern Recognition - Second International Workshop, SIMBAD 2013, York, UK, July 3-5, 2013. Proceedings*. Ed. by Edwin R. Hancock and Marcello Pelillo. Vol. 7953. Lecture Notes in Computer Science. Springer, 2013, pp. 235–249. DOI: 10.1007/978-3-642-39140-8_16. URL: https://doi.org/10.1007/978-3-642-39140-8_16.
- [311] Olivier Schwander and Frank Nielsen. “Model centroids for the simplification of Kernel Density estimators”. In: *2012 IEEE International Conference on Acoustics, Speech and Signal Processing, ICASSP 2012, Kyoto, Japan, March 25-30, 2012*. IEEE, 2012, pp. 737–740. DOI: 10.1109/ICASSP.2012.6287989. URL: <https://doi.org/10.1109/ICASSP.2012.6287989>.
- [312] Olivier Schwander and Frank Nielsen. “Non-flat clustering with alpha-divergences”. In: *Proceedings of the IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2011, May 22-27, 2011, Prague Congress Center, Prague, Czech Republic*. IEEE, 2011, pp. 2100–2103. DOI: 10.1109/ICASSP.2011.5946740. URL: <https://doi.org/10.1109/ICASSP.2011.5946740>.
- [313] Olivier Schwander and Frank Nielsen. “Reranking with Contextual Dissimilarity Measures from Representational Bregman k-Means”. In: *VISAPP 2010 - Proceedings of the Fifth International Conference on Computer Vision Theory and Applications, Angers, France, May 17-21, 2010 - Volume 1*. Ed. by Paul Richard and José Braz. INSTICC Press, 2010, pp. 118–123.
- [314] Olivier Schwander et al. “k-MLE for mixtures of generalized Gaussians”. In: *Proceedings of the 21st International Conference on Pattern Recognition, ICPR*

- 2012, Tsukuba, Japan, November 11-15, 2012. IEEE Computer Society, 2012, pp. 2825–2828. URL: <https://ieeexplore.ieee.org/document/6460753/>.
- [315] Ke Sun and Frank Nielsen. “Relative Fisher Information and Natural Gradient for Learning Large Modular Models”. In: *Proceedings of the 34th International Conference on Machine Learning, ICML 2017, Sydney, NSW, Australia, 6-11 August 2017*. Ed. by Doina Precup and Yee Whye Teh. Vol. 70. Proceedings of Machine Learning Research. PMLR, 2017, pp. 3289–3298. URL: <http://proceedings.mlr.press/v70/sun17b.html>.
- [316] Junlin Yao and Frank Nielsen. “SSSC-AM: A unified framework for video co-segmentation by structured sparse subspace clustering with appearance and motion features”. In: *2016 IEEE International Conference on Image Processing, ICIP 2016, Phoenix, AZ, USA, September 25-28, 2016*. IEEE, 2016, pp. 3957–3961. DOI: 10.1109/ICIP.2016.7533102. URL: <https://doi.org/10.1109/ICIP.2016.7533102>.