List of selected publications

Frank Nielsen

October 18, 2009

References

- [1] Frank Nielsen. Steering self-learning distance algorithms. Communications of the ACM, 52(11):VE, November 2009.
- [2] Richard Nock and Frank Nielsen. Bregman divergences and surrogates for learning. *IEEE Transactions on Pattern Matching and Machine Intelligence*, 31(11):2048–2059, November 2009.
- [3] Frank Nielsen and Richard Nock. Approximating smallest enclosing balls with applications to machine learning. *International Journal on Computational Geometry and Applications*, 19(5), October 2009.
- [4] Vincent Garcia, Frank Nielsen, and Richard Nock. Levels of details for gaussian mixture models. In Ninth Asian Conference on Computer Vision (ACCV), Xi'an, China, September 2009. Springer-Verlag.
- [5] Yukiko Matsuoka, Jason E. Shoemaker, Natalia Polouliakh, Yukiko Muramoto, Ken Fujii, Samik Ghosh, Richard Nock, Frank Nielsen, Yoshihiro Kawaoka, and Hiroaki Kitano. A systems biology approach to influenza virus infection. In *Tenth International Conference on Systems Biology (ICSB)*, Stanford, USA, September 2009.
- [6] Frank Nielsen. Opinion on "open, closed, or clopen access", September 2009.
- [7] Frank Nielsen, Vincent Garcia, and Richard Nock. Gaussian mixture models via entropic quantization. In 2009 European Signal Processing Conference (EUSIPCO), pages 2012–2016, Glasgow, UK, August 2009. IEEE.
- [8] Frank Nielsen and Richard Nock. The dual voronoi diagrams with respect to representational bregman divergences. In *International Symposium on Voronoi Diagrams (ISVD)*, DTU Lyngby, Denmark, June 2009. IEEE.
- [9] Frank Nielsen and Richard Nock. Sided and symmetrized bregman centroids. *IEEE Transactions on Information Theory*, 55(6):2048–2059, June 2009.
- [10] Frank Nielsen, Paolo Piro, and Michel Barlaud. Bregman vantage point trees for efficient nearest neighbor queries. In *IEEE International Conference on Multimedia and Expo (ICME)*, pages 878–881. IEEE, June 2009.
- [11] Frank Nielsen and Aurelien Serandour. Accuracy of distance metric learning algorithms. In Workshop on Data Mining using Matrices and Tensors (DMMT), Paris, France, June 2009. ACM.
- [12] Vincent Garcia and Frank Nielsen. Searching high-dimensional neighbours: Cpu-based tailored datastructures versus gpu-based brute-force method. In *IEEE International Conference on Multimedia and Expo (ICME)*, pages 425–436. IEEE, May 2009.
- [13] Hiroaki Tobita and Frank Nielsen. Image enforme: Automatic deformation of image for multi-features without information loss. In *Pervasive*, Nara, Japan, May 2009. Springer-Verlag.

- [14] Frank Nielsen. A Concise and Practical Introduction to Programming Algorithms in Java. Undergraduate Topics in Computer Science (UTiCS). Springer-Verlag, March 2009.
- [15] Frank Nielsen. *Emerging Trends in Visual Computing*. Lecture Notes in Computer Science. Springer-Verlag, March 2009.
- [16] Frank Nielsen. A volume shader for quantum voronoi diagrams inside the 3d bloch ball. In *ShaderX7:* Advanced Rendering Techniques. Charles River Media/Thomson Publishing, March 2009.
- [17] Frank Nielsen and Richard Nock. Hyperbolic voronoi diagrams made easy. Computing Research Repository (CoRR), abs/0903.3287, March 2009.
- [18] Paolo Piro, Frank Nielsen, and Michel Barlaud. Tailored bregman ball trees for effective nearest neighbors. In European Workshop on Computational Geometry (EuroCG). IEEE, March 2009.
- [19] Richard Nock, Brice Magdalou, Nicolas Sanz, Eric Briys, Fred Celimene, and Frank Nielsen. Information geometries and microeconomic theories. *Computing Research Repository (CoRR)*, abs/0901.2586, January 2009.
- [20] Richard Nock, Pascal Vaillant, Claudia Henry, and Frank Nielsen. Soft memberships for spectral clustering, with application to permeable language distinction. *Pattern Recognition*, 42(1):43–53, January 2009.
- [21] Natalia Polouliakh, Richard Nock, Frank Nielsen, and Hiroaki Kitano. G-protein coupled receptor signaling architecture of mammalian immune cells. Public Libary of Science One, 4(1):e4189, January 2009.
- [22] Frank Nielsen. Computational information geometry: Pursuing the meaning of distances. In *Open Systems Science*. 2009. in Japanese.
- [23] Frank Nielsen and Richard Nock. Bregman sided and symmetrized centroids. In *International Conference on Pattern Recognition (ICPR)*, pages 1–4, December 2008.
- [24] Richard Nock and Frank Nielsen. On the efficient minimization of classification calibrated surrogates. In *Neural Information Processing Society (NIPS)*, pages 1201–1208, December 2008.
- [25] Richard Nock and Frank Nielsen. On the efficient minimization of convex surrogates in supervised learning. In *International Conference on Pattern Recognition (ICPR)*, pages 1–4, December 2008.
- [26] Frank Nielsen. Abstracts of the lix fall colloquium 2008: Emerging trends in visual computing. In Emerging Trends in Visual Computing (ETVC), pages 1–12, November 2008.
- [27] Frank Nielsen and Richard Nock. Clustering multivariate normal distributions. In *Emerging Trends* in Visual Computing (ETVC), pages 164–174, November 2008.
- [28] Richard Nock and Frank Nielsen. Intrinsic geometries in learning. In *Emerging Trends in Visual Computing (ETVC)*, pages 175–215, November 2008.
- [29] Richard Nock, Pascal Vaillant, Frank Nielsen, and Claudia Henry. Soft uncoupling of markov chains for permeable language distinction: A new algorithm. *Computing Research Repository (CoRR)*, abs/0810.1261, October 2008.
- [30] Frank Nielsen and Richard Nock. Quantum voronoi diagrams and holevo channel capacity for 1-qubit quantum states. In *IEEE International Symposium on Information Theory (ISIT)*, pages 96–100, Toronto, Canada, July 2008. IEEE.

- [31] Frank Nielsen, Alexis Andre, and Shigeru Tajima. Real-time spherical videos from a fast rotating camera. In *International Conference on Image Analysis and Recognition (ICIAR)*, pages 326–335, June 2008.
- [32] Shigeru Owada, Frank Nielsen, Takeo Igarashi, Ryo Haraguchi, and Kazuo Nakazawa. Projection plane processing for sketch-based volume segmentation. In *International Symposium on Biomedical Imaging* (ISBI), pages 117–120, May 2008.
- [33] Frank Nielsen and Richard Nock. The entropic centers of multivariate normal distributions. In *European Workshop on Computational Geometry (EuroCG)*, pages 221–224, Nancy, France, March 2008. IEEE.
- [34] Frank Nielsen and Richard Nock. Quantum voronoi diagrams. In European Workshop on Computational Geometry (EuroCG), pages 225–228, Nancy, France, March 2008. IEEE.
- [35] Frank Nielsen. An interactive tour of voronoi diagrams on the gpu. In *ShaderX6*, pages 225–228. Charles River Media, February 2008.
- [36] Frank Nielsen and Richard Nock. On the smallest enclosing information disk. *Information Processing Letters*, 105(3):93–97, January 2008.
- [37] Richard Nock, Nicolas Sanz, Fred Celimene, and Frank Nielsen. Staring at economic aggregators through information lenses. *Computing Research Repository (CoRR)*, abs/0801.0390, January 2008.
- [38] Frank Nielsen and Richard Nock. Les (tres) nombreuses epingles algorithmiques de la meule de surrogees. In *Conference francophone sur l'apprentissage automatique (CAp)*, Porquerolles, France, Mai 2008. IEEE.
- [39] Kazuhiro Hoshino, Frank Nielsen, and Toshihiro Nishimura. Noise reduction in cmos image sensors for high quality imaging: The autocorrelation function filter on burst image sequences. *Graphics*, *Vision*, and *Image Processing*, 7(3):17–24, November 2007.
- [40] Frank Nielsen and Richard Nock. On the centroids of symmetrized bregman divergences. Computing Research Repository (CoRR), abs/0711.3242, November 2007.
- [41] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. Bregman voronoi diagrams: Properties, algorithms and applications. *CoRR*, abs/0709.2196, September 2007.
- [42] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. Visualizing bregman voronoi diagrams. In Symposium on Computational Geometry (SoCG), pages 121–122, June 2007.
- [43] Shigeru Owada, Makoto Okabe, Takeo Igarashi, Frank Nielsen, and Norimichi Tsumura. Customized slider bars for adjusting multi-dimension parameter sets. In *Smart Graphics (SG)*, pages 230–232, Kyoto, Japan, June 2007.
- [44] Frank Nielsen and Richard Nock. Fast graph segmentation based on statistical aggregation phenomena. In *Machine Vision Applications (MVA)*, pages 150–153, May 2007.
- [45] Richard Nock and Frank Nielsen. Self-improved gaps almost everywhere for the agnostic approximation of monomials. *Theoretical Computer Science*, 377(1-3):139–150, May 2007.
- [46] Claudia Henry, Richard Nock, and Frank Nielsen. Real boosting a la carte with an application to boosting oblique decision tree. In *International Joint Conference on Artificial Intelligence (IJCAI)*, pages 842–847, January 2007.
- [47] Frank Nielsen. The digital chameleon principle: Computing invisibility by rendering transparency. *IEEE Computer Graphics and Applications*, 27(1):90–96, January 2007.

- [48] Frank Nielsen, Jean-Daniel Boissonnat, and Richard Nock. On bregman voronoi diagrams. In Symposium on Discrete Algorithms (SODA), pages 746–755, January 2007.
- [49] Richard Nock and Frank Nielsen. A real generalization of discrete adaboost. *Artificial Intelligence*, 171(1):25–41, January 2007.
- [50] Frank Nielsen and Noriyuki Yamashita. Clairvoyance: A fast and robust precision mosaicing system for gigapixel images. In *IEEE Industrial Electronics Society (IECON)*, pages 3471–3476, Paris, France, November 2006.
- [51] Frank Nielsen. Contributions au traitement de l'information pour le visuel : Géométrie, infographie et vision, October 2006. Jury: Jean Ponce (President/Examinateur), Michel Pocchiola (Rapporteur), Cordelia Schmid (Rapporteur),.
- [52] Frank Nielsen and Richard Nock. On the smallest enclosing information disk. In *Canadian Conference* on Computational Geometry (CCCG), pages 131–134, Kingston, Ontario, Canada, August 2006.
- [53] Richard Nock and Frank Nielsen. On weighting clustering. IEEE Transactions on Pattern Analysis and Machine Intelligence, 28(8):1223–1235, August 2006.
- [54] Richard Nock and Frank Nielsen. A real generalization of discrete adaboost. In *European Conference* on Artificial Intelligence (ECAI), pages 509–515, August 2006.
- [55] Richard Nock, Pascal Vaillant, Frank Nielsen, and Claudia Henry. Soft uncoupling of markov chains for permeable language distinction: A new algorithm. In *European Conference on Artificial Intelligence* (ECAI), pages 823–824, August 2006.
- [56] Frank Nielsen, Shigeru Owada, and Yuichi Hasegawa. Autoframing: A recommendation system for detecting undesirable elements and cropping automatically photos. In *International Conference on Multimedia and Expo (ICME)*, pages 417–420, July 2006.
- [57] Shigeru Owada, Frank Nielsen, and Takeo Igarashi. Copy-paste synthesis of 3d geometry with repetitive patterns. In *Smart Graphics (SG)*, pages 184–193, Vancouver, Canada, July 2006.
- [58] Frank Nielsen and Richard Nock. On approximating the smallest enclosing bregman balls. In *Symposium on Computational Geometry (SoCG)*, pages 485–486, Sedona, Arizona, USA, June 2006.
- [59] Frank Nielsen. A gpu panorama viewer for generic camera models. In *ShaderX5: Advanced Rendering Techniques*, pages 543–552. Charles River Media/Thomson Publishing, December 2005.
- [60] Frank Nielsen. Interactive image segmentation based on gpu cellular automata. In *ShaderX5: Advanced Rendering Techniques*, pages 511–518. Charles River Media/Thomson Publishing, December 2005.
- [61] Frank Nielsen and Richard Nock. Clickremoval: Interactive pinpoint image object removal. In ACM Multimedia (MM), pages 315–318, Singapore, November 2005.
- [62] Frank Nielsen and Richard Nock. Interactive point-and-click segmentation for object removal in digital images. In *International Conference on Comuter Vision, Human Computer Interface (ICCV-HCI)*, pages 131–140, Beijing, China, October 2005.
- [63] Richard Nock and Frank Nielsen. Fitting the smallest enclosing bregman ball. In European Conference on Machine Learning (ECML), pages 649–656, Porto, Portugal, October 2005.
- [64] Frank Nielsen. Visual computing: Geometry, graphics and vision. Charles River Media / Thomson Delmar Learning, August 2005.
- [65] Frank Nielsen and Richard Nock. Interactive pinpoint image object removal. In *International Conference on Vision and Pattern Recognition (CVPR)*, page 1191, June 2005.

- [66] Frank Nielsen and Richard Nock. Interactive pinpoint image object removal. In International Conference on Computer Vision and Pattern Recognition (CVPR), page 1191, San Diego, California, USA, June 2005.
- [67] Richard Nock and Frank Nielsen. Semi-supervised statistical region refinement for color image segmentation. Pattern Recognition, 38(6):835–846, June 2005.
- [68] Paul Agron, Leo Bachmair, and Frank Nielsen. A visual interactive framework for formal derivation. In *International Conference on Computational Science (ICCS)*, pages 1019–1026, Atlanta, GA, USA, May 2005.
- [69] Shigeru Owada, Frank Nielsen, and Takeo Igarashi. Volume catcher. In *Symposium on Interactive 3D Graphics and Games (SI3D)*, pages 111–116, Washington, District of Columbia, USA, April 2005.
- [70] Frank Nielsen and Richard Nock. A fast deterministic smallest enclosing disk approximation algorithm. *Information Processing Letters*, 93(6):263–268, March 2005.
- [71] Frank Nielsen. Surround video: a multihead camera approach. The Visual Computer, 21(1-2):92–103, February 2005.
- [72] Richard Nock and Frank Nielsen. Statistical region merging. *IEEE Transactions on Pattern Analysis* and Machine Intelligence, 26(11):1452–1458, November 2004.
- [73] Frank Nielsen and Richard Nock. Approximating smallest enclosing disks. In *Canadian Conference on Computational Geometry (CCCG)*, pages 124–127, Montreal, Quebec, Canada, August 2004.
- [74] Richard Nock and Frank Nielsen. Improving clustering algorithms through constrained convex optimization. In *International Conference on Pattern Recognition (ICPR)*, pages 557–560, August 2004.
- [75] Richard Nock and Frank Nielsen. On domain-partitioning induction criteria: worst-case bounds for the worst-case based. *Theoretical Computer Science*, 321(2-3):371–382, August 2004.
- [76] Shigeru Owada, Frank Nielsen, Makoto Okabe, and Takeo Igarashi. Volumetric illustration: Designing 3d models with internal textures. *ACM Transactions on Graphics (SIGGRAPH)*, 23(3):322–328, August 2004.
- [77] Richard Nock and Frank Nielsen. Grouping with bias revisited. In *International Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 460–465, Washington, D.C., USA, June 2004.
- [78] Frank Nielsen and Richard Nock. Approximating smallest enclosing balls. In *International Conference on Computational Science and Its Applications (ICCSA)*, pages 147–157, May 2004.
- [79] Richard Nock and Frank Nielsen. An abstract weighting framework for clustering algorithms. In SIAM Data Mining (SDM), pages 200–209, Florida, USA, April 2004.
- [80] Shigeru Owada, Yoshihisa Shinagawa, and Frank Nielsen. Enumeration of contour correspondence. *International Journal on Image Graphics*, 3(4):609–628, October 2003.
- [81] Frank Nielsen. Plenoptic path and its applications. In *International Conference on Image Processing* (*ICIP*), pages 793–796, September 2003.
- [82] Shigeru Owada, Frank Nielsen, Kazuo Nakazawa, and Takeo Igarashi. A sketching interface for modeling the internal structures of 3d shapes. In *Smart Graphics (SG)*, pages 49–57, Heidelberg, Germany, July 2003.
- [83] Frank Nielsen and Richard Nock. On region merging: The statistical soundness of fast sorting, with applications. In (CVPR), pages 19–26, Madison, Wisconsin, USA, June 2003.

- [84] Matthew J. Katz, Frank Nielsen, and Michael Segal. Maintenance of a piercing set for intervals with applications. *Algorithmica*, 36(1):59–73, February 2003.
- [85] Kim Binsted, Shigeo Morishima, Frank Nielsen, Claudio S. Pinhanez, and Tatsuo Yotsukura. Hypermask: Talking head projected onto real objects. In *International Conference on MultiMedia Modeling* (MMM), pages 403–412, Nagano, Japan, November 2002. World Scientific.
- [86] Kim Binsted, Takafumi Misawa, Shigeo Morishima, and Frank Nielsen. Danger hamster 2000. In ACM SIGGRAPH, Conference Abstracts and Applications (SIGGRAPH), page 81, New Orleans, Louisiana, USA, July 2002.
- [87] Frank Nielsen. High resolution full spherical videos. In *International Conference on Information Technology: Coding and Computing (ITCC)*, pages 260–267, Las Vegas, Nevada, April 2002.
- [88] Tatsuo Yotsukura, Shigeo Morishima, Frank Nielsen, Kim Binsted, and Claudio S. Pinhanez. Hypermask: Projecting a talking head onto a real object. *The Visual Computer*, 18(2):111–120, April 2002.
- [89] Tatsuo Yotsukura, Frank Nielsen, Kim Binsted, Ryouhei Nakatsu, and Shigeo Morishima. Hypermask: Reactive talking head for storytelling. IEICE Transactions on Information and Systems, J85-D-II(1):36-45, January 2002.
- [90] Frank Nielsen and Nicolas de Mauroy. On the precision of textures. IEICE Transactions on Information and Systems, E84-D(12):1684-1689, December 2001.
- [91] Patrice Calegari, Frederic Guidec, Pierre Kuonen, and Frank Nielsen. Combinatorial optimization algorithms for radio network planning. *Theoretical Computer Science*, 263(1-2):235–245, July 2001.
- [92] Frank Nielsen. On point covers of c-oriented polygons. Theoretical Computer Science, 263(1-2):17–29, July 2001.
- [93] Tatsuo Yotsukura, Frank Nielsen, Kim Binsted, Nobuji Tetsutani, Ryouhei Nakatsu, and Shigeo Morishima. Hypermask: Reactive talking head for storytelling. In *Eurographics*, pages 305–310, June 2001.
- [94] Matthew J. Katz, Frank Nielsen, and Michael Segal. Maintenance of a piercing set for intervals with applications. In *International Symposium on Algorithms and Computation (ISAAC)*, pages 552–563, Nankang, Taipei, Taiwan, December 2000.
- [95] Frank Nielsen and Nicolas de Mauroy. On the precision of textures. In *Machine Vision and Applications* (MVA), pages 31–34, Tokyo, Japan, November 2000.
- [96] Frank Nielsen. Randomized adaptive algorithms for mosaicing systems. IEICE Transactions on Information and Systems, E83-D(7):1386-1394, October 2000.
- [97] Frank Nielsen. Fast stabbing of boxes in high dimensions. *Theoretical Computer Science*, 246(1-2):53–72, July 2000.
- [98] Alon Efrat, Matthew J. Katz, Frank Nielsen, and Micha Sharir. Dynamic data structures for fat objects and their applications. *Computational Geometry*, 15(4):215–227, April 2000.
- [99] Matthew J. Katz, Frank Nielsen, and Michael Segal. Shooter location through piercing sets. In European Workshop on Computational Geometry (EWCG), pages 55–58, Eilat, Israel, March 2000.
- [100] Kim Binsted, Frank Nielsen, and Shigeo Morishima. Hypermask: Virtual reactive faces for storytelling. In ACM Emerging Technologies, Conference Abstracts and Applications (SIGGRAPH), page 186, Los Angeles, California, August 1999.

- [101] Frank Nielsen, Claudio S. Pinhanez, and Kim Binsted. Projecting computer graphics on moving surfaces: A simple calibration and tracking method. In *ACM SIGGRAPH*, *Emerging Technologies*, *Conference Abstracts and Applications*, page 266, Los Angeles, California, August 1999.
- [102] Frank Nielsen. Grouping and querying: A paradigm to get output-sensitive algorithms. In Japan Conference on Discrete and Computational Geometry (JCDCG), pages 250–257, Tokyo, Japan, December 1998.
- [103] Frank Nielsen. Randomized adaptive algorithms for mosaicing systems. In *Machine Vision and Applications (MVA)*, pages 11–14, Chiba, Japan, November 1998.
- [104] Frank Nielsen. On point covers of c-oriented polygons. In Canadian Conference on Computational Geometry (CCCG), Montreal, Qubec, Canada, August 1998.
- [105] Frank Nielsen and Mariette Yvinec. Output-sensitive convex hull algorithms of planar convex objects. *International Journal on Computational Geometry and Applications*, 8(1):39–66, February 1998.
- [106] Alon Efrat, Matthew J. Katz, Frank Nielsen, and Micha Sharir. Dynamic data structures for fat objects and their applications. In *Workshop on Algorithms and Data-Structures (WADS)*, pages 297–306, Halifax, Nova Scotia, Canada, August 1997.
- [107] Frank Nielsen. Algorithmes géométriques adaptatifs, September 1996. PhD.
- [108] Frank Nielsen. Output-sensitive peeling of convex and maximal layers. *Information Processing Letters*, 59(5):255–259, September 1996.
- [109] Frank Nielsen. Fast stabbing of boxes in high dimensions. In *Canadian Conference on Computational Geometry (CCCG)*, pages 87–92, Ottawa, Ontario, Canada, August 1996.
- [110] Matthew J. Katz and Frank Nielsen. On piercing sets of objects. In *Symposium on Computational Geometry (SoCG)*, pages 113–121, Philadelphia, Pennsylvania, USA, May 1996.
- [111] Frank Nielsen. Une visite dans le monde des algorithmes géomètriques sensibles à la sortie, September 1994. Rapport de DEA informatique théorique, Rapport de Magistère, Ecole Normale Supérieure de Lyon, France.
- [112] Frank Nielsen. Algorithms on continued and multi-continued fractions, July 1993. Rapport de Magistère, Ecole Normale Supérieure de Lyon, France.
- [113] Frank Nielsen. Algorithmes géomètriques, June 1992. Rapport de Magistère 1, Ecole Normale Supérieure de Lyon, France.