

COMPLETE LIST OF PUBLICATIONS

David COEURJOLLY

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1 Books

- [Coe07] D. Coeurjolly. "Algorithmique pour l'analyse et la modélisation en géométrie discrète". PhD thesis. Université Claude Bernard Lyon 1, Dec. 2007.
- [CMC07] D. Coeurjolly, A. Montanvert, and J. M. Chassery, eds. *Géométrie discrète et images numériques*. Traité IC2, Signal et Image. France: Hermès Paris, Sept. 2007, p. 416.
- [Coe02] D. Coeurjolly. "Algorithmique et géométrie discrète pour la caractérisation des courbes et des surfaces". PhD thesis. Laboratoire ERIC: Université Lumière Lyon 2, Bron, Dec. 2002.

2 Proceedings

- [Ken+20] *Guest Editorial: Special Issue on Discrete Geometry for Computer Imagery*. Vol. 6. Journal of Mathematical Imaging and Vision. Elsevier, 2020. doi: 10.1007/s10851-020-00971-8.
- [AJC18] *Preface: Special Issue on Discrete Geometry for Computer Imagery*. Journal of Mathematical Imaging and Vision. Elsevier, 2018. doi: 10.1007/s10851-018-0855-4.
- [NGC17] Nicolas Normand, Jeanpierre Guédon, and David Coeurjolly. *Special Issue on Discrete Geometry for Computer Imagery*. Vol. 59. Journal of Mathematical Imaging and Vision 1. June 2017. URL: <https://hal.archives-ouvertes.fr/hal-01576003>.
- [CGJ15] *Special Issue on Discrete Geometry for Computer Imagery 2013*. en. Vol. 183. Discrete Applied Mathematics. Elsevier, 2015. URL: <http://liris.cnrs.fr/publis/?id=6697>.
- [CSD09] David Coeurjolly, I. Sivignon, and F. Dupont, eds. *Special Issue DGCI 2008*. Computer and Graphics. Elsevier, Feb. 2009. doi: 10.1016/j.cag.2008.12.001.

- [SCT09] I. Sivignon, David Coeurjolly, and L. Tougne, eds. *Special Issue DGCI 2008*. Vol. 42. Pattern Recognition 10. Oct. 2009. doi: 10.1016/j.patcog.2008.12.006.
- [Coe+08] David Coeurjolly, I. Sivignon, L. Tougne, and F. Dupont, eds. *14th IAPR International Conference on Discrete Geometry*. LNCS. Springer, Apr. 2008.

3 Chapters in Books

- [LCL17] Jacques-Olivier Lachaud, David Coeurjolly, and Jérémy Levallois. “Robust and Convergent Curvature and Normal Estimators with Digital Integral Invariants”. In: *Modern Approaches to Discrete Curvature*. Ed. by Pascal Romon Laurent Najman. Vol. 2184. Lecture Notes in Mathematics. Springer-Verlag, 2017. URL: <https://hal.archives-ouvertes.fr/hal-01576020>.
- [Coe12] David Coeurjolly. “Volumetric Analysis of Digital Objects Using Distance Transformation: Performance Issues and Extensions”. In: *Applications of Discrete Geometry and Mathematical Morphology*. Ed. by U. Köthe, A. Montanvert, and P. Soille. Vol. 7346. LNCS. Springer-Verlag, 2012.
- [CLR12] David Coeurjolly, Jacques-Olivier Lachaud, and Tristan Roussillon. “Multigrid convergence of discrete geometric estimators”. In: *Digital Geometry Algorithms, Theoretical Foundations and Applications of Computational Imaging*. Ed. by Valentin Brimkov and Reneta Barneva. Vol. 2. Lecture Notes in Computational Vision and Biomechanics. Springer-Verlag, 2012, pp. 395–424.
- [CV12] David Coeurjolly and Antoine Vacavant. “Separable Distance Transformation and its Applications”. In: *Theoretical Foundations and Applications of Computational Imaging*. Ed. by V. Brimkov and R. Barneva. Springer-Verlag, 2012.
- [CN09] David Coeurjolly and N. Normand. “The Mojette Transform: Theory and Applications”. In: ed. by J.-P. Guédon. J.-P. Guédon, Wiley, 2009. Chap. Discrete geometry and projections.

4 Articles in International Journals

- [GCC23] Guillaume Gisbert, Raphaëlle Chaine, and David Coeurjolly. “Inpainting Holes In Folded Fabric Meshes”. In: *Computer & Graphics (Proc. of SMI 2023)* (July 2023). doi: 10.1016/j.cag.2023.05.025.

- [Lac+23] Jacques-Olivier Lachaud, David Coeurjolly, Céline Labart, Pascal Romon, and Boris Thibert. "Lightweight Curvature Estimation on Point Clouds with Randomized Corrected Curvature Measures". In: *Computer Graphics Forum (Proceedings of Symposium on Geometry Processing)* 42.5 (July 2023). doi: 10.1111/cgf.14910.
- [Tar+23] Lama Tarsissi, Yukiko Kenmochi, Pascal Romon, David Coeurjolly, and Jean-Pierre Borel. "Convexity preserving deformations of digital sets: Characterization of removable and insertable pixels". In: *Discrete Applied Mathematics* 341 (Dec. 2023). doi: 10.1016/j.dam.2023.08.016.
- [Wei+23] Colin Weill-Duflos, David Coeurjolly, Fernando de Goes, and Jacques-Olivier Lachaud. "Joint optimization of distortion and cut location for mesh parameterization using an Ambrosio-Tortorelli functional". In: *Computer Aided Geometric Design (Proc. of GMP 2023)* 105 (July 2023). doi: 10.1016/j.cagd.2023.102231.
- [Pau+22] Loïs Paulin, Nicolas Bonneel, David Coeurjolly, Jean-Claude Iehl, Alexander Keller, and Victor Ostromoukhov. "MatBuilder: Mastering Sampling Uniformity Over Projections". In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 41.4 (Aug. 2022). doi: <https://doi.org/10.1145/3528223.3530063>.
- [CLG21] David Coeurjolly, Jacques-Olivier Lachaud, and Pierre Gueth. "Digital surface regularization with guarantees". In: *IEEE Transactions on Visualization and Computer Graphics* 27.6 (Jan. 2021), pp. 2896–2907. doi: 10.1109/tvcg.2021.3055242.
- [DCB21] Guillaume Damiand, David Coeurjolly, and Pierre Bourquat. "Stripped halfedge data structure for parallel computation of arrangements of segments". In: *The Visual Computer Journal* 37.6 (Sept. 2021). doi: 10.1007/s00371-021-02185-4.
- [Lej+21] Thibault Lejembre, David Coeurjolly, Loïc Barthe, and Nicolas Mellado. "Stable and efficient differential estimators on oriented point clouds". In: *Computer Graphics Forum (Proceedings of Symposium on Geometry Processing)* 40.5 (July 2021). doi: 10.1111/cgf.14368.
- [Pau+21] Loïs Paulin, David Coeurjolly, Jean-Claude Iehl, Nicolas Bonneel, Alexander Keller, and Victor Ostromoukhov. "Cascaded Sobol' Sampling". In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia)* (Dec. 2021). (conditionally accepted).
- [Bon+20] Nicolas Bonneel, David Coeurjolly, Julie Digne, and Nicolas Mellado. "Code Replicability in Computer Graphics". In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 39.4 (July 2020).
- [CS20] David Coeurjolly and Isabelle Sivignon. "Efficient Distance Transformation for Path-based Metrics". In: *Computer Vision and Image Understanding* (Feb. 2020). accepted for publication. doi: 10.1016/j.cviu.2020.102925.

- [Hei+20] Matthieu Heitz, Nicolas Bonneel, David Coeurjolly, Marco Cuturi, and Gabriel Peyré. “Ground Metric Learning on Graphs”. In: *Journal of Mathematical Imaging and Vision* (Nov. 2020), pp. 1–19. doi: 10.1007/s10851-020-00996-z.
- [JC20] Boris Thibert Jacques-Olivier Lachaud Pascal Romon and David Coeurjolly. “Interpolated corrected curvature measures for polygonal surfaces”. In: *Computer Graphics Forum (Proceedings of Symposium on Geometry Processing)* 39.5 (2020). doi: 10.1111/cgf.14067.
- [Lan+20] Matteo Paolo Lanaro, H el ene Perrier, David Coeurjolly, Victor Ostromoukhov, and Alessandro Rizzi. “Blue-noise sampling for human retinal cone spatial distribution modeling”. In: *Journal of Physics Communications* 4.3 (Mar. 2020), p. 035013. doi: 10.1088/2399-6528/ab8064. URL: <https://hal.archives-ouvertes.fr/hal-02540673>.
- [Pau+20] Lo is Paulin, Nicolas Bonneel, David Coeurjolly, Jean-Claude lehl, Antoine Webanck, Mathieu Desbrun, and Victor Ostromoukhov. “Sliced Optimal Transport Sampling”. In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 39.4 (July 2020).
- [San+20] Julia Sanchez, Florence Denis, David Coeurjolly, Florent Dupont, Laurent Trassoudaine, and Paul Checchin. “Robust Normal Vector Estimation in 3D Point Clouds through Iterative Principal Component Analysis”. In: *Journal of Photogrammetry and Remote Sensing* 163 (May 2020). Ed. by Elsevier, pp. 18–35. doi: 10.1016/j.isprsjprs.2020.02.018.
- [BC19] Nicolas Bonneel and David Coeurjolly. “SPOT: Sliced Partial Optimal Transport”. In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 38.4 (July 2019).
- [Cai+19] Thomas Caissard, David Coeurjolly, Jacques-Olivier Lachaud, and Tristan Roussillon. “Laplace–Beltrami Operator on Digital Surfaces”. In: *Journal of Mathematical Imaging and Vision* 61.3 (2019), pp. 359–379. doi: 10.1007/s10851-018-0839-4.
- [Del+19] Johanna Delanoy, David Coeurjolly, Jacques-Olivier Lachaud, and Adrien Bousseau. “Combining voxel and normal predictions for multi-view 3D sketching”. In: *Computers and Graphics* 82 (June 2019). (presented at Shape Modeling International 2019), pp. 65–72. doi: 10.1016/j.cag.2019.05.024.
- [Sin+19a] Gurprit Singh, Cengiz  Oztireli, Abdalla GM Ahmed, David Coeurjolly, Kartic Subr, Victor Ostromoukhov, Oliver Deussen, Ravi Ramamoorthi, and Wojciech Jarosz. “Analysis of Sample Correlations for Monte Carlo Rendering”. In: *Computer Graphics Forum (Proceedings of Eurographics)*. State-of-the-art Report 38.2 (June 2019).

- [Sin+19b] Gurprit Singh, Kartic Subr, David Coeurjolly, Victor Ostromoukhov, and Wojciech Jarosz. “Fourier Analysis of Correlated Monte Carlo Importance Sampling”. In: *Computer Graphics Forum* 37.4 (2019). doi: 10.1111/cgf.13613.
- [Bon+18] Nicolas Bonneel, David Coeurjolly, Pierre Gueth, and Jacques-Olivier Lachaud. “Mumford-Shah Mesh Processing using the Ambrosio-Tortorelli Functional”. In: *Computer Graphics Forum (Proceedings of Pacific Graphics)* 37.7 (Oct. 2018). doi: 10.1111/cgf.13549.
- [Per+18] H el ene Perrier, David Coeurjolly, Feng Xie, Matt Pharr, Pat Hanrahan, and Victor Ostromoukhov. “Sequences with Low-Discrepancy Blue-Noise 2-D Projections”. In: *Computer Graphics Forum (Proceedings of Eurographics)* 37.2 (2018), pp. 339–353.
- [Plu+18] Kacper Pluta, Tristan Roussillon, David Coeurjolly, Pascal Romon, Yukiko Kenmochi, and Victor Ostromoukhov. “Characterization of bijective digitized rotations on the hexagonal grid”. In: *Journal of Mathematical Imaging and Vision* 60.5 (2018), pp. 707–716. doi: 10.1007/s10851-018-0785-1.
- [Sch+18] M. A. Schmitz, M. Heitz, N. Bonneel, F. M. Ngol e Mboula, D. Coeurjolly, M. Cuturi, G. Peyr e, and J.-L. Starck. “Wasserstein Dictionary Learning: Optimal Transport-based unsupervised non-linear dictionary learning”. In: *SIAM Journal on Imaging Sciences* 11.1 (2018). doi: 10.1137/17M1140431.
- [Ahm+16] Abdalla G.M. Ahmed, H el ene Perrier, David Coeurjolly, Victor Ostromoukhov, Jianwei Guo, Dong-Ming Yan, Hui HUANG, and Oliver Deussen. “Low-Discrepancy Blue Noise Sampling”. In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH Asia)* 35.6 (2016), 247:1–247:13. doi: 10.1145/2980179.2980218.
- [Coe+16] David Coeurjolly, Marion Foare, Pierre Gueth, and Jacques-Olivier Lachaud. “Piecewise smooth reconstruction of normal vector field on digital data”. In: *Computer Graphics Forum, Pacific Graphics 2016 Proceedings*. Proc. Pacific Graphics 2016 35.7 (Sept. 2016). URL: <https://hal.archives-ouvertes.fr/hal-01355291>.
- [LCL15] J er emy Levallois, David Coeurjolly, and Jacques-Olivier Lachaud. “Scale-space Feature Extraction on Digital Surfaces”. In: *Computers and Graphics, SMI 2015 Proceedings* 51.C (Oct. 2015), pp. 177–189. doi: 10.1016/j.cag.2015.05.023. URL: <https://hal.archives-ouvertes.fr/hal-01149102>.
- [Pil+15] Adrien Pilleboue, Gurprit Singh, David Coeurjolly, Michael Kazhdan, and Victor Ostromoukhov. “Variance Analysis for Monte Carlo Integration”. In: *ACM Transactions on Graphics, SIGGRAPH 2015 Proceedings*. SIGGRAPH 2015 34.4 (Aug. 2015), p. 14. URL: <https://hal.archives-ouvertes.fr/hal-01150268>.

- [CKL14] David Coeurjolly, Bertrand Kerautret, and Jacques-Olivier Lachaud. "Extraction of Connected Region Boundary in Multidimensional Images". en. In: *Image Processing On Line (IPOL)* 4 (Mar. 2014), pp. 30–43. doi: 10.5201/ipo1.2014.74. URL: <http://liris.cnrs.fr/publis/?id=7034>.
- [CLL14] David Coeurjolly, Jacques-Olivier Lachaud, and Jérémy Levallois. "Multi-grid Convergent Principal Curvature Estimators in Digital Geometry". en. In: *Computer Vision and Image Understanding* 129.1 (June 2014), pp. 27–41. URL: <http://liris.cnrs.fr/publis/?id=6625>.
- [Wac+14] Florent Wachtel, Adrien Pilleboue, David Coeurjolly, Katherine Breen, Gurprit Singh, Gaël Cathelin, Fernando de Goes, Mathieu Desbrun, and Victor Ostromoukhov. "Fast Tile-Based Adaptive Sampling with User-Specified Fourier Spectra". en. In: *ACM Transactions on Graphics (Proceedings of SIGGRAPH)* 33.4 (Aug. 2014), 56:1–56:11. ISSN: 0730-0301. doi: 10.1145/2601097.2601107. URL: <http://liris.cnrs.fr/publis/?id=6546>.
- [WCF14] Xi Wang, David Coeurjolly, and Frédéric Flin. "Digital Flow for Shape Decomposition: Application to 3-D Microtomographic Images of Snow". en. In: *Pattern Recognition Letters* 45.1 (Mar. 2014), pp. 181–188. doi: 10.1016/j.patrec.2014.03.005. URL: <http://liris.cnrs.fr/publis/?id=6503>.
- [Coe12] David Coeurjolly. "Fast and Accurate Approximation of Digital Shape Thickness Distribution in Arbitrary Dimension". In: *Computer Vision and Image Understanding* 116.12 (2012), pp. 1159–1167.
- [CS11] David Coeurjolly and I. Sivignon. "Measure of Straight Lines for Digital Contour Analysis". In: *International Journal of Imaging Measure of Straight Lines for Digital Contour Analysis Systems and Technology* 21.1 (2011). doi: 10.1002/ima.20268.
- [DC11] Guillaume Damiand and David Coeurjolly. "A Generic and Parallel Algorithm for 2D Digital Curve Polygonal Approximation". In: *Journal of Real-Time Image Processing* (2011). doi: 10.1007/s11554-011-0193-x.
- [VCT11] A. Vacavant, David Coeurjolly, and L. Tougne. "Separable algorithms for distance transformations on irregular grids". In: *Pattern Recognition Letters* 32 (2011), pp. 1356–1364. doi: 10.1016/j.patrec.2010.11.010.
- [GCF09] Y. Gerard, David Coeurjolly, and F. Feschet. "Gift-Wrapping based Preimage Computation Algorithm". In: *Pattern Recognition* 10.42 (2009), pp. 2255–2264.
- [VCT09] A. Vacavant, D. Coeurjolly, and L. Tougne. "A framework for dynamic implicit curve approximation by an irregular discrete approach". en. In: *Graphical Models* 71.3 (Oct. 2009), pp. 113–124. URL: <http://liris.cnrs.fr/publis/?id=3775>.

- [CHS08] D. Coeurjolly, J. Hulin, and I. Sivignon. "Finding a Minimum Medial Axis of a Discrete Shape is NP-hard". en. In: *Theoretical Computer Science* (Oct. 2008). URL: <http://liris.cnrs.fr/publis/?id=3479>.
- [SC08] I. Sivignon and D. Coeurjolly. "Minimum Decomposition of a Digital Surface into Digital Plane Segments is NP-Hard". In: *Discrete Applied Mathematics* 157.3 (2008), pp. 558–570. doi: 10.1016/j.dam.2008.05.028.
- [BCK07] V. Brimkov, D. Coeurjolly, and R. Klette. "Digital Planarity – a review". In: *Discrete Applied Mathematics* 155.4 (Feb. 2007), pp. 468–495.
- [CM07] David Coeurjolly and Annick Montanvert. "Optimal Separable Algorithms to Compute the Reverse Euclidean Distance Transformation and Discrete Medial Axis in Arbitrary Dimension". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 29.3 (Mar. 2007), pp. 437–448. doi: 10.1109/TPAMI.2007.54.
- [CCZ07] M. Couprie, D. Coeurjolly, and R. Zour. "Discrete bisector function and Euclidean skeleton in 2D and 3D". In: *Image and Vision Computing* 25.10 (Oct. 2007), pp. 1519–1698.
- [CZ06] D. Coeurjolly and L. Zerarga. "Supercover model, digital straight line recognition and curve reconstruction on the irregular isothetic grids". In: *Computer and Graphics* 30.1 (2006), pp. 46–53.
- [Coe+05] D. Coeurjolly, I. Sivignon, F. Dupont, F. Feschet, and J. M. Chassery. "On Digital plane preimage structure". In: *Discrete Applied Mathematics* 151.1–3 (2005). Ed. by Elsevier Science, pp. 78–92.
- [Fli+05] F. Flin, J. B. Brzoska, B. Lesaffre, C. Coléou, P. Lamboley, D. Coeurjolly, O. Teytaud, G. Vignoles, and J. F. Delesse. "An adaptive filtering method to evaluate normal vectors and surface areas of 3D objects. Application to snow images from X-ray tomography". In: *IEEE Transactions on Image Processing* 14.5 (2005), pp. 585–596.
- [Coe+04] D. Coeurjolly, Y. Gerard, J. P. Reveillès, and L. Tougne. "An elementary algorithm for digital arc segmentation". In: *Discrete Applied Mathematics* 139.1–3 (2004), pp. 31–50.
- [CMT04] D. Coeurjolly, S. Miguët, and L. Tougne. "2D and 3D Visibility in Discrete Geometry: an Application to Discrete Geodesic Paths". In: *Pattern Recognition Letters* 25.5 (Apr. 2004), pp. 561–570.
- [CK04] David Coeurjolly and Reinhart Klette. "A Comparative Evaluation of Length Estimators of Digital Curves". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 26.2 (Feb. 2004), pp. 252–258. ISSN: 0162-8828.

5 Articles in International Conference Proceedings

- [Doi+23] Bastien Doignies, Nicolas Bonneel, David Coeurjolly, Julie Digne, Loïs Paulin, Jean-Claude Iehl, and Victor Ostromoukhov. “Example-Based Sampling with Diffusion Models”. In: *ACM SIGGRAPH Asia (Conference track)*. Dec. 2023.
- [CL22] David Coeurjolly and Jacques-Olivier Lachaud. “A Simple Discrete Calculus for Digital Surfaces”. In: *IAPR Second International Conference on Discrete Geometry and Mathematical Morphology*. Ed. by Étienne Baudrier, Benoît Naegel, Adrien Krähenbühl, and Mohamed Tajine. Springer, LNCS, Oct. 2022.
- [LRC22] Jui-Ting Lu, Tristan Roussillon, and David Coeurjolly. “A New Lattice-based Plane-probing Algorithm”. In: *IAPR Second International Conference on Discrete Geometry and Mathematical Morphology*. Ed. by Étienne Baudrier, Benoît Naegel, Adrien Krähenbühl, and Mohamed Tajine. Springer, LNCS, Oct. 2022.
- [Tar+22] Lama Tarsissi, Yukiko Kenmochi, Hadjer Djerroumi, David Coeurjolly, Pascal Romon, and Jean-Pierre Borel. “Algorithms for pixelwise shape deformations preserving digital convexity”. In: *IAPR Second International Conference on Discrete Geometry and Mathematical Morphology*. Ed. by Étienne Baudrier, Benoît Naegel, Adrien Krähenbühl, and Mohamed Tajine. Springer, LNCS, Oct. 2022.
- [Tar+20] Lama Tarsissi, David Coeurjolly, Yukiko Kenmochi, and Pascal Romon. “Convexity Preserving Contraction of Digital Sets”. In: *Pattern Recognition, Proc. of the 5th Asian Conference on Pattern Recognition 2019*. Ed. by Shivakumara Palaiahnakote, Gabriella Sanniti di Baja, Liang Wang, and Wei Qi Yan. Lecture Notes in Mathematics. Auckland, New Zealand: Springer International Publishing, Jan. 2020, pp. 611–624. ISBN: 978-3-030-41299-9.
- [Hei+19] Eric Heitz, Laurent Belcour, Victor Ostromoukhov, David Coeurjolly, and Jean-Claude Iehl. “A Low-Discrepancy Sampler that Distributes Monte Carlo Errors as a Blue Noise in Screen Space”. In: *ACM SIGGRAPH Talk*. July 2019. doi: 10.1145/3306307.3328191.
- [Lan+19] Matteo Paolo Lanaro, H el ene Perrier, David Coeurjolly, Victor Ostromoukhov, and Alessandro Rizzi. “Towards human retinal cones spatial distribution modeling”. In: *MODVIS Computational and Mathematical Models in Vision*. Purdue, United States, May 2019. URL: <https://hal.archives-ouvertes.fr/hal-02136363>.
- [CGL18] David Coeurjolly, Pierre Gueth, and Jacques-Olivier Lachaud. “Regularization of Voxel Art”. In: *ACM SIGGRAPH Talk*. 2018. doi: 10.1145/3214745.3214748.

- [Cai+17] Thomas Caissard, David Coeurjolly, Jacques-Olivier Lachaud, and Tristan Roussillon. "Heat kernel Laplace-Beltrami operator on digital surfaces". In: *20th International Conference on Discrete Geometry for Computer Imagery*. Lecture Notes in Computer Science. Walter G. Kropatsch, Ines Janusch and Nicole M. Artner. Vienna, Austria: Springer-Verlag, Sept. 2017. URL: <https://hal.archives-ouvertes.fr/hal-01575544>.
- [CGL17] David Coeurjolly, Pierre Gueth, and Jacques-Olivier Lachaud. "Digital surface regularization by normal vector field alignment". In: *20th International Conference on Discrete Geometry for Computer Imagery*. Vol. LNCS. 20th International Conference on Discrete Geometry for Computer Imagery. Vienna, Austria, 2017. URL: <https://hal.archives-ouvertes.fr/hal-01543007>.
- [Sch+17] Morgan A Schmitz, Matthieu Heitz, Nicolas Bonneel, Fred Ngolè, David Coeurjolly, Marco Cuturi, Gabriel Peyré, and Jean-Luc Starck. "Optimal transport-based dictionary learning and its application to euclid-like point spread function representation". In: *Wavelets and Sparsity XVII*. Vol. 10394. International Society for Optics and Photonics. 2017, 103940H. doi: 10.1117/12.2270641.
- [Per+16] Hélène Perrier, Jérémy Levallois, David Coeurjolly, Jean-Philippe Farugia, Jean-Claude Iehl, and Jacques-Olivier Lachaud. "Interactive Curvature Tensor Visualization on Digital Surfaces". In: *DGCI2016*. Ed. by Springer. Vol. Lecture Notes in Computer Sciences. International Conference on Discrete Geometry for Computer Imagery. Nantes, France, Apr. 2016, pp. 282–294. doi: 10.1007/978-3-319-32360-2_22. URL: <https://hal.archives-ouvertes.fr/hal-01262663>.
- [Coe14] David Coeurjolly. "2D Subquadratic Separable Distance Transformation for Path-Based Norms". en. In: *18th International Conference on Discrete Geometry for Computer Imagery*. Springer, Sept. 2014, pp. 75–87. URL: <http://liris.cnrs.fr/publis/?id=6698>.
- [LCL14] Jérémy Levallois, David Coeurjolly, and Jacques-Olivier Lachaud. "Parameter-free and Multigrid Convergent Digital Curvature Estimators". en. In: *18th International Conference on Discrete Geometry for Computer Imagery (DGCI 2014)*. Ed. by A. Frosini E. Barucci S. Rinaldi. Lecture Notes in Computer Science. Springer Verlag, Sept. 2014. URL: <http://liris.cnrs.fr/publis/?id=6703>.
- [CLL13] David Coeurjolly, Jacques-Olivier Lachaud, and Jérémy Levallois. "Integral based Curvature Estimators in Digital Geometry". en. In: *17th International Conference on Discrete Geometry for Computer Imagery (DGCI 2013)*. Ed. by B. Medrano R. Gonzalez-Diaz M.J. Jimenez. Lecture Notes in Computer Science. Springer Verlag, Mar. 2013, pp. 215–227. URL: <http://liris.cnrs.fr/publis/?id=5866>.

- [Tsu+13] Alex Tsui, Devin Fenton, Phong Vuong, Joel Hass, Patrice Koehl, Nina Amenta, David Coeurjolly, Charles DeCarli, and Owen Carmichael. "Globally Optimal Cortical Surface Matching With Exact Landmark Correspondence". en. In: *Information Processing in Medical Imaging*. LNCS. Springer-Verlag, May 2013, pp. 487–498. URL: <http://liris.cnrs.fr/publis/?id=6038>.
- [BBC12a] M. Belperin, S. Brandel, and David Coeurjolly. "Decoration of plastic objects using multi view-dependent textures". en. In: *Shape Modeling International*. June 2012. URL: <http://liris.cnrs.fr/publis/?id=5508>.
- [BBC12b] M. Belperin, S. Brandel, and David Coeurjolly. "Texture creation with colorimetric compensation for 3D objects decoration". en. In: *Computer Graphics International*. June 2012. URL: <http://liris.cnrs.fr/publis/?id=5537>.
- [CAC12] David Coeurjolly, Nina Amenta, and Raphaëlle Chaine. *Thickness Diagram for Shape Analysis*. en. Poster. Symposium on Geometry Processing (Poster). July 2012. URL: <http://liris.cnrs.fr/publis/?id=5621>.
- [Wan+12] X. Wang, L. Gilbert, F. Flin, and David Coeurjolly. "Volumetric Analysis of Digital Objects Using Distance Transformation: Performance Issues and Extensions". In: *International Conference on Pattern Recognition*. Japan, 2012.
- [Coe10] David Coeurjolly. "Fast and Accurate Approximation of the Euclidean Opening Function in Arbitrary Dimension". In: *International Conference on Pattern Recognition*. Istanbul, Turkey: IEEE Computer Society, 2010.
- [BC09] V. Blot and David Coeurjolly. "Quasi-Affine Transformation in Higher Dimension ". en. In: *15th International Conference on Discrete Geometry for Computer Imagery*. LNCS. Springer-Verlag, Oct. 2009. URL: <http://liris.cnrs.fr/publis/?id=4165>.
- [BCS09] A. Broutta, David Coeurjolly, and I. Sivignon. "Hierarchical Discrete Medial Axis for Sphere-Tree Construction ". en. In: *13th International Workshop on Combinatorial Image Analysis*. LNCS. Springer, Nov. 2009. URL: <http://liris.cnrs.fr/publis/?id=4334>.
- [CBJ09] David Coeurjolly, V. Blot, and M.-A. Jacob-Da Col. "Quasi-Affine Transformation in 3-D: Theory and Algorithms ". en. In: *13th International Workshop on Combinatorial Image Analysis*. LNCS. Springer, Nov. 2009. URL: <http://liris.cnrs.fr/publis/?id=4332>.
- [CS09] David Coeurjolly and I. Sivignon. "Measure of Straight Lines and its Applications in Digital Geometry ". en. In: *13th International Workshop on Combinatorial Image Analysis*. Research Publishing Services, Nov. 2009. URL: <http://liris.cnrs.fr/publis/?id=4331>.

- [VC09] A. Vacavant and David Coeurjolly. "First Results on Medial Axis Extraction on Two-Dimensional Irregular Isothetic Grids". en. In: *13th International Workshop on Combinatorial Image Analysis*. Research Publishing Services, Nov. 2009. URL: <http://liris.cnrs.fr/publis/?id=4333>.
- [VCT09] A. Vacavant, David Coeurjolly, and L. Tougne. "A Novel Algorithm for Distance Transformation on Irregular Isothetic Grids". en. In: *DGCI 2009*. Sept. 2009. URL: <http://liris.cnrs.fr/publis/?id=4166>.
- [Coe08] D. Coeurjolly. "Distance Transformation, Reverse Distance Transformation and Discrete Medial Axis on Toric Spaces". In: *19th International Conference on Pattern Recognition*. Tampa, Florida, USA: IEEE Computer Society, 2008.
- [DC08] Guillaume Damiand and David Coeurjolly. "A Generic and Parallel Algorithm for 2D Image Discrete Contour Reconstruction". en. In: *International Symposium on Visual Computing (ISVC 2008)*. Lecture Notes in Computer Science (LNCS). Springer-Verlag, Dec. 2008, pp. 792–801. doi: 10.1007/978-3-540-89646-3_78. URL: <http://liris.cnrs.fr/publis/?id=3580>.
- [GFC08] Y. Gerard, F. Feschet, and D. Coeurjolly. "Gift-Wrapping based Preimage Computation Algorithm". en. In: *14th International Conference on Discrete Geometry for Computer Imagery*. Ed. by L. Tougne D. Coeurjolly I. Sivignon and F. Dupont. LNCS. Apr. 2008. URL: <http://liris.cnrs.fr/publis/?id=3388>.
- [VCT08] A. Vacavant, D. Coeurjolly, and L. Tougne. "Distance Transformation en Two-Dimensional Irregular Isothetic Grids". en. In: *14th Discrete Geometry for Computer Imagery*. Lyon, France: LNCS, Springer, Apr. 2008. URL: <http://liris.cnrs.fr/publis/?id=3390>.
- [CCS06] J. M. Chassery, D. Coeurjolly, and I. Sivignon. "Duality and Geometry Straightness, Characterization and Envelope". In: *13th International Conference on Discrete Geometry for computer Imagery*. Vol. 4245. LNCS. invited talk. Szeged, Hungary: Springer Verlag, 2006, pp. 1–16.
- [Coe+06] D. Coeurjolly, F. Dupont, L. Jospin, and I. Sivignon. "Optimization schemes for the reversible discrete volume polyhedrization using Marching Cubes simplification". In: *13th International Conference on Discrete Geometry for Computer Imagery*. Vol. 4245. LNCS. Szeged, Hungary: Springer-Verlag, 2006, pp. 413–424.
- [DCA06] M. Dexet, D. Coeurjolly, and E. Andres. "Invertible Polygonalization of 3D Planar Digital Curves and Application to Volume Data Reconstruction". In: *International Symposium on Visual Computing (ISVC)*. Vol. 4292. LNCS. Lake Tahoe, Nevada, USA, 2006.

- [SC06] I. Sivignon and D. Coeurjolly. "Minimal Decomposition of a Digital Surface into Digital Plane Segments is NP-Hard". In: *13th International Conference on Discrete Geometry for Computer Imagery*. LNCS 4245. Szeged, Hungary: Springer-Verlag, 2006, pp. 674–685.
- [VCT06a] A. Vacavant, D. Coeurjolly, and L. Tougne. "Dynamic Reconstruction of Complex Planar Objects on Irregular Isothetic Grids". In: *International Symposium on Visual Computing (ISVC)*. LNCS 4292. Nevada, USA, 2006.
- [VCT06b] A. Vacavant, D. Coeurjolly, and L. Tougne. "Topological and Geometrical Reconstruction of Complex Objects on Irregular Isothetic Grids". In: *13th International Conference on Discrete Geometry for Computer Imagery*. Vol. 4245. LNCS. Szeged, Hungary: Springer-Verlag, 2006.
- [CC05] J. M. Chassery and D. Coeurjolly. "Optimal shape and inclusion: open problems". In: *International Symposium on Mathematical Morphology*. Ed. by C. Ronse, L. Najman, and E. Decencière. Computational Imaging and Vision. invited talk. Springer, 2005, pp. 229–248.
- [Coe05] D. Coeurjolly. "Supercover Model and Digital Straight Line Recognition on Irregular Isothetic Grids". In: *12th International Conference on Discrete Geometry for Computer Imagery*. Ed. by E. Andres, G. Damiand, and P. Lienhardt. Vol. 3429. Lecture Notes in Computer Science. Springer-Verlag, 2005, pp. 311–322.
- [CGS04] D. Coeurjolly, A. Guillaume, and I. Sivignon. "Reversible discrete volume polyhedrization using Marching Cubes simplification". In: *SPIE Vision Geometry XII*. Vol. 5300. San Jose, USA, 2004, pp. 1–11.
- [CT04] D. Coeurjolly and L. Tougne. "Digital straight line recognition on heterogeneous grids". In: *SPIE Vision Geometry XII*. Vol. 5300. San Jose, USA, 2004, pp. 108–116.
- [RCB04a] J. Ricard, D. Coeurjolly, and A. Baskurt. "ART Extension for Description, Indexing and Retrieval of 3D Objects". In: *17th International Conference on Pattern Recognition*. Ed. by IEEE Computer Society Press. Cambridge, United Kingdom, 2004.
- [RCB04b] J. Ricard, D. Coeurjolly, and A. Basurt. "Generalization of the angular radial transform". In: *IEEE International Conference on Image Processing*. Ed. by IEEE Computer Society Press. 2004.
- [Coe03] D. Coeurjolly. "d-Dimensional Reverse Euclidean Distance Transformation and Euclidean Medial Axis Extraction in Optimal Time". In: *Discrete Geometry for Computer Imagery*. Ed. by G. Sanniti di Baja I. Nystrom and S. Svensson. LNCS 2886. Springer, Oct. 2003, pp. 327–337.
- [Coe+03a] D. Coeurjolly, F. Flin, O. Teytaud, and L. Tougne. "Multigrid Convergence and Surface Area Estimation". In: *Theoretical Foundations of Computer Vision "Geometry, Morphology, and Computational Imaging"*. LNCS, Springer-Verlag 2616. 2003, pp. 101–119.

- [Coe+03b] D. Coeurjolly, I. Sivignon, F. Dupont, F. Feschet, and J. M. Chasery. "Digital plane preimage structure". In: *International Workshop on Combinatorial Image Analysis*. Ed. by Elsevier Science. Electronic Notes in Discrete Mathematics. Palermo, Italy, May 2003.
- [CS03] D. Coeurjolly and S. Svensson. "Estimation of curvature along curves with application to fibres in 3D images of paper". In: *Scandinavian Conference on Image Analysis*. Ed. by Springer-Verlag. LNCS 2749. 2003, pp. 247–254.
- [SC03] I. Sivignon and D. Coeurjolly. "From digital plane Segmentation to Polyhedral representation". In: *Theoretical Foundations of Computer Vision "Geometry, Morphology, and Computational Imaging"*. LNCS, Springer-Verlag 2616. 2003, pp. 356–367.
- [Coe02] D. Coeurjolly. "Visibility in Discrete Geometry: An Application to Discrete Geodesic Paths". In: *Discrete Geometry for Computer Imagery*. Ed. by A. Vialard A. Braquelaire J. -O. Lachaud. 10th International Conference, DGCI, Bordeaux, France: Springer Lecture Notes in Computer Science, 2301, Apr. 2002, pp. 326–327.
- [CK02] D. Coeurjolly and R. Klette. "A Comparative Evaluation of Length Estimators". In: *International Conference on Pattern Recognition*. Quebec: IEEE Computer Science, 2002.
- [CDT01] D. Coeurjolly, I. Debled-Renneson, and O. Teytaud. "Segmentation and Length Estimation of 3D Discrete Curves". In: *Digital and Image Geometry*. Ed. by G. Bertrand, A. Imiya, and R. Klette. Springer Lecture Notes in Computer Science, Advanced Lecture 2243, 2001, pp. 295–313. URL: 3DNSS.ps.gz.
- [Coe+01] D. Coeurjolly, Y. Gerard, J. P. Reveillès, and L. Tougne. "An elementary algorithm for digital arc segmentation". In: *International Workshop on Combinatorial Image Analysis*. Ed. by Sébastien Fourey, Gabor T. Herman, and T. Yung Kong. Vol. 46. Electronic Notes in Theoretical Computer Science. Temple University, Philadelphia, Pennsylvania, U.S.A.: Elsevier Science Publishers, Aug. 2001. URL: dcoeurjo_digital_arc.pdf.
- [CMT01] D. Coeurjolly, S. Miguet, and L. Tougne. "Discrete Curvature based on Osculating Circle Estimation". In: *International Workshop on Visual Form 4*. Ed. by C. Arcelli, L. P. Cordella, and G. Sanniti di Baja. 2059. Capri, Italy. Springer Lecture Notes in Computer Science, 2059, May 2001, pp. 303–312. URL: iwvf4.ps.gz.

6 Articles in National Conference Proceedings

- [Cai+16] Thomas Caissard, David Coeurjolly, Tristan Roussillon, and Jacques-Olivier Lachaud. "Laplace-Beltrami operator on Digital Curves". In:

- JFIG*. Grenoble, France, Nov. 2016. URL: <https://hal.archives-ouvertes.fr/hal-01497255>.
- [LCL13] Jérémy Levallois, David Coeurjolly, and Jacques-Olivier Lachaud. “Convergence asymptotique du tenseur de courbure en géométrie discrète”. fr. In: *26èmes Journées de l’Association Française d’Informatique Graphique, du chapitre français d’Eurographics et du Groupement de Recherche IG*. 2ième prix du meilleur article AFIG/EGFR. Nov. 2013, pp. 1–10. URL: <http://liris.cnrs.fr/publis/?id=6434>.
- [VCT06] A. Vacavant, D. Coeurjolly, and L. Tougne. “Reconstruction topologique et géométrique d’objets complexes sur grilles isothétiques irrégulières”. fr. In: *COMpression et REprésentation de Signaux Audiovisuels*. Nov. 2006. URL: <http://liris.cnrs.fr/publis/?id=2453>.
- [RCB05] J. Ricard, D. Coeurjolly, and A. Baskurt. “Indexation et recherche dynamique d’objet 3D par vues par des requêtes 2D”. In: *CORESA*. Rennes, France, Nov. 2005.
- [RCB04] J. Ricard, D. Coeurjolly, and A. Baskurt. “Extension de la transformation ART pour la description, l’indexation et la recherche d’objet 3D”. In: *CORESA*. Lille, France, May 2004.
- [CK02] D. Coeurjolly and R. Klette. “Estimateurs de longueur discrets”. In: *Denis Richard 60th Birthday Conference*. Clermont-Ferrand, 2002. URL: [longueur.pdf](#).
- [CFT01] D. Coeurjolly, F. Feschet, and L. Tougne. “Extraction de primitives géométriques pour la classification automatique de profils de stèles funéraires”. In: *8ièmes Rencontres de la Société Francophone de Classification*. Guadeloupe, France, 2001. URL: [Coeurjolly_Feschet_Tougne.pdf](#).
- [CST99] D. Coeurjolly, D. Sarrut, and L. Tougne. “Décimation en Imagerie Médicale 3D”. In: *Courbes Surfaces et Algorithmes*. Grenoble, France, Sept. 1999. URL: [decimation.ps.gz](#).

7 Preprints

- [Pau+23] Loïs Paulin, David Coeurjolly, Nicolas Bonneel, Jean-Claude Iehl, Victor Ostromoukhov, and Alexander Keller. *Generator Matrices by Solving Integer Linear Programs*. 2023. doi: 10.48550/ARXIV.2302.13943. URL: <https://arxiv.org/abs/2302.13943>.
- [CS19] David Coeurjolly and Isabelle Sivignon. *Efficient Distance Transformation for Path-based Metrics*. Tech. rep. Technical Paper. CNRS, Jan. 2019. URL: <https://hal.archives-ouvertes.fr/hal-02000339>.

- [Hei+19] Matthieu Heitz, Nicolas Bonneel, David Coeurjolly, Marco Cuturi, and Gabriel Peyré. *Ground Metric Learning on Graphs*. Tech. rep. 1911.03117. arXiv, Nov. 2019. arXiv: 1911.03117 [stat.ML]. URL: <https://arxiv.org/abs/1911.03117>.
- [Plu+17] Kacper Pluta, Tristan Roussillon, David Coeurjolly, Pascal Romon, Yukiko Kenmochi, and Victor Ostromoukhov. "Characterization of bijective digitized rotations on the hexagonal grid". Submitted to *Journal of Mathematical Imaging and Vision*. June 2017. URL: <https://hal.archives-ouvertes.fr/hal-01540772>.
- [Sch+17] M. A. Schmitz, M. Heitz, N. Bonneel, F. M. Ngolè Mboula, D. Coeurjolly, M. Cuturi, G. Peyré, and J.-L. Starck. *Wasserstein Dictionary Learning: Optimal Transport-based unsupervised non-linear dictionary learning*. Tech. rep. Aug. 2017. arXiv: 1708.01955 [stat.ML].
- [Cai+16] Thomas Caissard, David Coeurjolly, Jacques-Olivier Lachaud, and Tristan Roussillon. "Heat kernel Laplace-Beltrami operator on digital surfaces". working paper or preprint. Mar. 2016. URL: <https://hal.archives-ouvertes.fr/hal-01498293>.
- [RC16] Tristan Roussillon and David Coeurjolly. *Characterization of bijective discretized rotations by Gaussian integers*. Research Report. LIRIS UMR CNRS 5205, Jan. 2016. URL: <https://hal.archives-ouvertes.fr/hal-01259826>.
- [Kaz+15] Michael Kazhdan, Gurprit Singh, Adrien Pilleboue, David Coeurjolly, and Victor Ostromoukhov. *Variance Analysis for Monte Carlo Integration: A Representation-Theoretic Perspective*. Research Report. LIRIS UMR CNRS 5205, Mar. 2015. URL: <https://hal.archives-ouvertes.fr/hal-01259838>.
- [LCL15] Jérémy Levallois, David Coeurjolly, and Jacques-Olivier Lachaud. *Feature Extraction on Digital Snow Microstructures*. SIGGRAPH Poster. Aug. 2015. URL: <https://hal.archives-ouvertes.fr/hal-01145709>.