Laurent Najman

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GScholar December 2024	All	Since 2020
Citations	13129	4148
h-index	45	28
i10-index	127	55

Discrete mathematics, with applications to data science, biomedical imaging, computer vision and image processing

Education

2006 **Accreditation to supervise research (HdR)**, *Computer Sciences*, Univ. Marne-la-Vallée
Mathematical Morphology, dynamical systems and application to image processing.

1994 **PhD**, *Applied Mathematics*, Université Paris Dauphine
Mathematical Morphology : From Images segmentation to Set-Valued Analysis.
Received with unanimous jury congratulations.

1991 **Master degree**, *Artificial Intelligence and Shape Recognition*, Université Paris-Dauphine
Summa cum Laude – Ranked first.

1991 **Engineering degree**, *Control theory*, École des Mines de Paris
The École des Mines de Paris is one of the three top French engineering schools.

Current position

Since 2002 **Professor**, *ESIEE Paris*, Université Gustave Eiffel

Previous positions

Summary A mixed, atypical background, with an industrial career marked by patents and awards.

2015-2016 **Invited professor**, *GIP Lab.*, Faculty of Computer Sciences – Technion, Israel

1998–2002 **Senior Scientist**, *Océ PLT*, Créteil, France
Within the Océ subsidiary dedicated to large format printing, I was in charge of a small R&D team (5 people) in the field of digital document processing. My missions included on the one hand an aspect of lobbying and negotiations of partnerships between several entities of the Océ group (France, Holland, Germany and USA), and on the other hand an aspect of technology transfer management (relations with universities and engineering schools). Among the results of an academic nature, we mention **three patents and several conference publications**.

1995–1998 **VP, Research and Development**, *Animation Science*, Paris - Boston - San Francisco
In this start-up targeting both the image synthesis and the scientific visualization markets (fluid mechanics, optical simulations), I was a member of the board of directors, and responsible for a team of 12 people. My missions included the negotiation of technical partnerships for amounts of several million dollars (Microsoft/Softimage, AutoDesk/Kinetix, PTC, IBM, Autoliv, ANVAR, CNC...), as well as the development of the particle systems technology at the base of our products. **Numerous awards** have been given to our technology.

1991–1995 **Research engineer**, *THALES*, Laboratoire Central de Recherches, France

1991–1994 **PhD research grant holder**, *Université Paris-Dauphine*
During my PhD, while being a research grant holder and having a sustained publication rate in high-level journals, I also worked as a research engineer for Thales, and I was able to contribute to a DGA / DRET project targeting automatic identification of aircrafts in combat position from infrared images, the development of Saphir, a software for digital geography, as well as the development of facial recognition software.

Books

2017 Laurent Najman, Pascal Romon. Modern Approaches to Discrete Curvature. Springer International Publishing, 2184, 2017, Lecture Note in Mathematics, 978-3-319-58001-2.

2010 Laurent Najman, Hugues Talbot. Mathematical Morphology : from theory to applications. ISTE-Wiley, 507 p., 2010, 978-1-84821-215-2 – French version available

2006 Bart Lamiroy, Laurent Najman, Hugues Talbot. Systèmes d'exploitation - Synthèse de cours & exercices corrigés. Pearson Education France, 254pp., 2006, 978-2-744-07193-5

Fellowships and awards

Academy PhD prizes and Best Paper awards

2023 **Outstanding Paper – Honorable Mention**, *ICLR 2023*, for the PhD student Quentin Garrido

2022 **Ian Lawson Van Toch Memorial Award**, *ISMB 2022*, for the master student Quentin Garrido

2013 **Best PhD prize**, *Délégation Générale de l'Armement*, for the PhD student Camille Couprie

2012 **Best interdisciplinary PhD**, *Fondation EADS*, for the PhD student Camille Couprie

2012 **Accessit**, *Gilles Khan prize*, for the PhD student Camille Couprie

2008 **Accessit**, *AFRIF Prize*, for the PhD student Jean Cousty

Industry While VP at Animation Science

1997 **European Information Technology Prize**, *European Commission (Esprit programme) and by the European Council for Applied Science and Engineering*

1996 **Hottest Products of the Year**, *Computer Graphics World journal*

1995 **Technological Enterprise Award**, *Ile-de-France Regional Council*

Supervision of graduate students

France **Supervision of 2 "Habilitation à Diriger les Recherches"**, *(French accreditation to supervise research)*

France **Supervision of 29 PhD students in France**, *5 still in progress*, About 40% of my former PhD students are in academy, and 60% are in the industry, including in companies such as FaceBook or Google

Abroad **Supervision of 3 PhD students in foreign institutions**, *2 in India, 1 in Japan*

Teaching activities

Since 2002 **About 300 hours of classes per year**, Various classes at Engineering or Master level, including discrete mathematics, computer sciences (operating systems, compilers, etc.) and signal processing

I have written several books, that are the basis for some of the courses. In particular, the one on Operating Systems, contains numerous exercises, some theoretical, and some used in practical sessions.

Organization of scientific meetings

2023 **International Conference on Computer Vision**, *Paris*, France, Organisation chair

2015 **International Symposium on Mathematical Morphology**, *Reykjavik*, Iceland, Program chair

2014 **Discrete Curvature : Theory and Applications**, *Marseille*, France, Program chair

2005 **International Symposium on Mathematical Morphology**, *Paris*, France, Program chair

Since 2005 **Discrete Geometry and Mathematical Morphology**, Member of the steering committee

Institutional responsibilities

Since 2022 **Team leader**, *A3SI Team*, LIGM – UMR 8049 – CNRS & Université Gustave Eiffel

Since 2020 **Elected member**, *Board of directors*, Université Gustave Eiffel

2013–2019 **Appointed member**, *Local Scientific Council*, UFR Math–Info, Université Paris-Descartes

Since 2012 **VP Communication**, *LabEx Bézout*, Programme Investissement d'Avenir, ANR-10-LABX-58

2007–2020 **Vice-President**, *Institut Supérieur des Bio-Sciences*, a Bio-Engineering school

Partnership between Paris-Est Créteil University (Faculty of Medicine) and ESIEE Paris.

Reviewing activities

Since 2023 **Editor**, *Journal of Mathematical Imaging and Vision*

Since 2019 **Editor**, *International Journal of Computer Vision*

2016-2022 **Senior Editor**, *Signal Processing Letters*

2015-2023 **Area Editor**, *Computer Vision and Image Understanding*

Memberships of scientific societies

Since 2020 **Elected member**, *Board of directors*, AFRIF (IAPR France), **President** since 2025

Since 2013 **Senior member**, IEEE Society

Publications Laurent Najman

Books

[B1] Laurent Najman, Pascal Romon. *Modern Approaches to Discrete Curvature*. Vol. 2184. Lecture Note in Mathematics. Springer International Publishing, 2017. DOI: 10.1007/978-3-319-58002-9. URL: https://hal.science/hal-01597556.

[B2] Laurent Najman, Hugues Talbot. *Mathematical Morphology: from theory to applications*. ISBN: 9781848212152 (520 pp.) ISTE-Wiley, June 2010, 507 p. DOI: 10.1002/9781118600788. URL: https://hal.science/hal-00622479.

[B3] Hugues Talbot, Laurent Najman. *Morphologie Mathématique 2 : estimation, choix et mise en oeuvre*. (310 pp.) Hermès / Lavoisier, Sept. 2010, p. 311. URL: https://hal.science/hal-00622526.

[B4] Laurent Najman, Hugues Talbot. *Morphologie Mathématique 1 : approches déterministes*. (260 pp.) Hermès / Lavoisier, Sept. 2008, p. 260. URL: https://hal.science/hal-00622496.

[B5] Bart Lamiroy, Laurent Najman, Hugues Talbot. *Systèmes d'exploitation*. Synthex informatique. http://www.pearsoneducation.fr. Pearson Education France, 2006, p. 254. URL: https://inria.hal.science/inria-00113457.

Special issues and Proceedings

[S1] Jon Atli Benediktsson, Jocelyn Chanussot, Hugues Talbot, Laurent Najman, eds. *Mathematical Morphology and Its Applications to Signal and Image Processing*. Vol. 9082. Lecture Notes in Computer Science. Springer, May 2015. URL: https://hal.science/hal-01168633.

[S2] Laurent Najman, Pascal Romon, eds. *Discrete curvature: theory and applications*. Vol. 3. Actes des rencontres du CIRM 1. CEDRAM, Dec. 2014. URL: https://hal.science/hal-01090755.

[S3] Laurent Najman, Junior Barrera, Petros Maragos, B. S. Daya Sagar, Dan Schonfeld, eds. *Introduction to the Issue on Filtering and Segmentation with Mathematical Morphology*. Vol. 6 Number 7. IEEE Journal of Selected Topics in Signal Processing. Nov. 2012, p. 149. DOI: 10.1109/JSTSP.2012.2217593. URL: https://hal.science/hal-00741435.

[S4] Christian Ronse, Laurent Najman, Etienne Decencière, eds. *Special issue on ISMM05*. Vol. 25. Image and Vision Computing Journal 4. (129 pp.) 2007, 10pp. URL: https://hal.science/hal-00622320.

[S5] Christian Ronse, Laurent Najman, Etienne Decencière, eds. *Mathematical Morphology: 40 Years On*. Vol. 30. Computational Imaging and Vision. Proceedings of the 7th International Symposium on Mathematical Morphology. Springer, 2005, 10pp. URL: https://hal.science/hal-00622210.

Journal Articles

[A1] Yuliang Gu, Zhichao Sun, Tian Chen, Xin Xiao, Yepeng Liu, Yongchao Xu, Laurent Najman. "Dual structure-aware image filterings for semi-supervised medical image segmentation". In: *Medical Image Analysis* 99 (Jan. 2025), p. 103364. DOI: 10.1016/j.media.2024.103364. URL: https://hal.science/hal-04740759.

[A2] Zeev Gutman, Ritvik Vij, Laurent Najman, Michael Lindenbaum. "Assessing hierarchies by their consistent segmentations". In: *Journal of Mathematical Imaging and Vision* (Mar. 2024). DOI: 10.1007/s10851-024-01176-z. URL: https://hal.science/hal-03633805.

[A3] Caroline Mazini Rodrigues, Nicolas Boutry, Laurent Najman. "Unsupervised discovery of Interpretable Visual Concepts". In: *Information Sciences* 661 (Apr. 2024), p. 120159. DOI: 10.1016/j.ins.2024.120159. URL: https://hal.science/hal-04190721.

[A4] Caroline Mazini Rodrigues, Nicolas Boutry, Laurent Najman. "Transforming gradient-based techniques into interpretable methods". In: *Pattern Recognition Letters* 184 (Aug. 2024), pp. 66–73. DOI: 10.1016/j.patrec.2024.06.006. URL: https://hal.science/hal-04414672.

[A5] Gilles Bertrand, Nicolas Boutry, Laurent Najman. "Discrete Morse Functions and Watersheds". In: *Journal of Mathematical Imaging and Vision* 65 (Aug. 2023), pp. 787–801. DOI: 10.1007/s10851-023-01157-8. URL: https://hal.science/hal-03928064.

[A6] Nicolas Boutry, Rocio Gonzalez-Diaz, Laurent Najman, Thierry Géraud. "Continuous Well-Composedness Implies Digital Well-Composedness in n-D". In: *Journal of Mathematical Imaging and Vision* 64.2 (Feb. 2022), pp. 131–150. DOI: 10.1007/s10851-021-01058-8. URL: https://hal.science/hal-03575456.

[A7] Nicolas Boutry, Laurent Najman, Thierry Géraud. "Some equivalence relation between persistent homology and morphological dynamics". In: *Journal of Mathematical Imaging and Vision* 64 (June 2022), pp. 807–824. DOI: 10.1007/s10851-022-01104-z. URL: https://hal.science/hal-03676854.

[A8] Jordão Bragantini, Alexandre X Falcão, Laurent Najman. "Rethinking Interactive Image Segmentation: Feature Space Annotation". In: *Pattern Recognition* 131 (Nov. 2022), p. 108882. DOI: 10.1016/j.patcog.2022.108882. URL: https://hal.science/hal-03105751.

[A9] Aditya Challa, Sravan Danda, B S Daya Sagar, Laurent Najman. "Triplet-Watershed for Hyperspectral Image Classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–14. DOI: 10.1109/TGRS.2021.3113721. URL: https://hal.science/hal-03171597.

[A10] Quentin Garrido, Sebastian Damrich, Alexander Jäger, Dario Cerletti, Manfred Claassen, Laurent Najman, Fred A Hamprecht. "Visualizing hierarchies in scRNA-seq data using a density tree-biased autoencoder". In: *Bioinformatics*. Issue Supplement_1 38 (July 2022). Ian Lawson Van Toch Memorial Award for Outstanding Student Paper at ISMB 2022, pp. i316–i324. DOI: 10.1093/bioinformatics/btac249. URL: https://hal.science/hal-03136103.

[A11] Sravan Danda, Aditya Challa, B S Daya Sagar, Laurent Najman. "A Tutorial on Applications of Power Watershed Optimization to Image Processing". In: *The European Physical Journal. Special Topics* 230 (Sept. 2021), pp. 2337–2361. DOI: 10.1140/epjs/s11734-021-00264-0. URL: https://hal.science/hal-03313641.

[A12] Thanh Xuan Nguyen, Giovanni Chierchia, O Razim, R Peletier, Laurent Najman, Hugues Talbot, Benjamin Perret. "Object Detection with Component-Graphs in Multi-band Images: Application to Source Detection in Astronomical Images". In: *IEEE Access* 9 (Nov. 2021), pp. 156482–156491. DOI: 10.1109/ACCESS.2021.3128519. URL: https://hal.science/hal-03429058.

[A13] Lazaros Papamanolis, Hyun Jin Kim, Clara Jaquet, Matthew Sinclair, Michiel Schaap, Ibrahim Danad, Pepijn Diemen, Paul Knaapen, Laurent Najman, Hugues Talbot, Charles A Taylor, Irene Vignon-Clementel. "Myocardial Perfusion Simulation for Coronary Artery Disease: A Coupled Patient-Specific Multiscale Model". In: *Annals of Biomedical Engineering* 49 (May 2021), pp. 1432–1447. DOI: 10.1007/s10439-020-02681-z. URL: https://hal.science/hal-03036457.

[A14] Sampriti Soor, Aditya Challa, Sravan Danda, B S Daya Sagar, Laurent Najman. "Iterated Watersheds, A Connected Variation of K-Means for Clustering GIS Data". In: *IEEE Transactions on Emerging Topics in Computing* 9.2 (Apr. 2021), pp. 626–636. DOI: 10.1109/TETC.2019.2910147. URL: https://hal.science/hal-02063210.

[A15] Nicolas Boutry, Laurent Najman, Thierry Géraud. "Equivalence between Digital Well-Composedness and Well-Composedness in the Sense of Alexandrov on n-D Cubical Grids". In: *Journal of Mathematical Imaging and Vision* 62.9 (Nov. 2020), pp. 1285–1333. DOI: 10.1007/s10851-020-00988-z. URL: https://hal.science/hal-02990817.

[A16] Nicolas Boutry, Laurent Najman, Thierry Géraud. "Topological Properties of the First Non-Local Digitally Well-Composed Interpolation on n-D Cubical Grids". In: *Journal of Mathematical Imaging and Vision* 62.9 (Nov. 2020), pp. 1256–1284. DOI: 10.1007/s10851-020-00989-y. URL: https://hal.science/hal-02990810.

[A17] Aditya S Challa, Sravan Danda, B S S Daya Sagar, Laurent Najman. "Power Spectral Clustering". In: *Journal of Mathematical Imaging and Vision* 62.9 (Nov. 2020), pp. 1195–1213. DOI: 10.1007/s10851-020-00980-7. URL: https://hal.science/hal-01516649.

[A18] Eloïse Grossiord, Nicolas Passat, Hugues Talbot, Benoît Naegel, Salim Kanoun, Ilan Tal, Pierre Tervé, Soléakhéna Ken, Olivier Casasnovas, Michel Meignan, Laurent Najman. "Shaping for PET image analysis". In: *Pattern Recognition Letters* 131 (2020), pp. 307–313. DOI: 10.1016/j.patrec.2020.01.017. URL: https://hal.science/hal-02155801.

[A19] Deise Santana Maia, Jean Cousty, Laurent Najman, Benjamin Perret. "Characterization of graph-based hierarchical watersheds: theory and algorithms". In: *International Journal of Mathematical Imaging and Vision*. Special Issue on Discrete Geometry for Computer Imagery 2019 62.5 (Mar. 2020), pp. 627–658. DOI: 10.1007/s10851-019-00936-6. URL: https://hal.science/hal-02280023.

[A20] Nicolas Boutry, Thierry Géraud, Laurent Najman. "How to Make n-D Plain Maps defined on Discrete Surfaces Alexandrov-Well-Composed in a Self-dual Way". In: *Journal of Mathematical Imaging and Vision* 61 (2019), pp. 849–973. DOI: 10.1007/s10851-019-00873-4. URL: https://hal.science/hal-02005579.

[A21] Aditya Challa, Sravan Danda, B S Daya Sagar, Laurent Najman. "Watersheds for Semi-Supervised Classification". In: *IEEE Signal Processing Letters* 26.5 (May 2019), pp. 720–724. DOI: 10.1109/LSP.2019.2905155. URL: https://hal.science/hal-01977705.

[A22] Sravan Danda, Aditya Challa, B S Daya Sagar, Laurent Najman. "Revisiting the Isoperimetric Graph Partitioning Problem". In: *IEEE Access* 7 (2019), pp. 50636–50649. DOI: 10.1109/ACCESS.2019.2901094. URL: https://hal.science/hal-01810249.

[A23] Sravan Danda, Aditya Challa, B S Daya Sagar, Laurent Najman. "Some Theoretical Links Between Shortest Path Filters and Minimum Spanning Tree Filters". In: *Journal of Mathematical Imaging and Vision* 61 (Jan. 2019), pp. 745–762. DOI: 10.1007/s10851-018-0866-1. URL: https://hal.science/hal-01617799.

[A24] Eloïse Grossiord, Benoît Naegel, Hugues Talbot, Laurent Najman, Nicolas Passat. "Shape-based analysis on component-graphs for multivalued image processing". In: *Mathematical Morphology - Theory and Applications* 3.1 (2019), pp. 45–70. DOI: 10.1515/mathm-2019-0003. URL: https://hal.univ-reims.fr/hal-01695384.

[A25] Clara Jaquet, Laurent Najman, Hugues Talbot, Leo Grady, Michiel Schaap, Buzzy Spain, Hyun Jin Kim, Irene Vignon-Clementel, Charles A. Taylor. "Generation of patient-specific cardiac vascular networks: a hybrid image-based and synthetic geometric model". In: *IEEE Transactions on Biomedical Engineering* 66.4 (Apr. 2019). Featured article on the cover of the April issue of TBME - https://www.embs.org/tbme/articles/generation-of-patient-specific-cardiac-vascular-networks-a-hybrid-image-based-and-synthetic-geometric-model/, pp. 946–955. DOI: 10.1109/TBME.2018.2865667. URL: https://hal.science/hal-01869264.

[A26] Benjamin Perret, Giovanni Chierchia, Jean Cousty, Silvio Jamil F. Guimarães, Yukiko Kenmochi, Laurent Najman. "Higra: Hierarchical Graph Analysis". In: *SoftwareX* 10 (July 2019), p. 100335. DOI: 10.1016/j.softx.2019.100335. URL: https://hal.science/hal-02309938.

[A27] Benjamin Perret, Jean Cousty, Silvio Jamil Ferzoli Guimarães, Yukiko Kenmochi, Laurent Najman. "Removing non-signicant regions in hierarchical clustering and segmentation". In: *Pattern Recognition Letters* 128 (Dec. 2019), pp. 433–439. DOI: 10.1016/j.patrec.2019.10.008. URL: https://hal.science/hal-02305469.

[A28] Deise Santana Maia, Jean Cousty, Laurent Najman, Benjamin Perret. "Properties of combinations of hierarchical watersheds". In: *Pattern Recognition Letters* 128 (Dec. 2019), pp. 513–520. DOI: 10.1016/j.patrec.2019.10.009. URL: https://hal.science/hal-02175824.

[A29] Nicolas Boutry, Thierry Géraud, Laurent Najman. "A Tutorial on Well-Composedness". In: *Journal of Mathematical Imaging and Vision* 60.3 (Mar. 2018), pp. 443–478. DOI: 10.1007/s10851-017-0769-6. URL: https://hal.science/hal-01609892.

[A30] Aditya Challa, Sravan Danda, B S Daya Sagar, Laurent Najman. "Some Properties of Interpolations Using Mathematical Morphology". In: *IEEE Transactions on Image Processing* 27.4 (Apr. 2018), pp. 2038–2048. DOI: 10.1109/TIP.2018.2791566. URL: https://hal.science/hal-01484894.

[A31] Jean Cousty, Laurent Najman, Yukiko Kenmochi, Silvio Guimarães. "Hierarchical segmentations with graphs: quasi-flat zones, minimum spanning trees, and saliency maps". In: *Journal of Mathematical Imaging and Vision* 60.4 (May 2018), pp. 479–502. DOI: 10.1007/s10851-017-0768-7. URL: https://hal.science/hal-01344727.

[A32] Odyssée Merveille, Hugues Talbot, Laurent Najman, Nicolas Passat. "Curvilinear structure analysis by ranking the orientation responses of path operators". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 40.2 (2018), pp. 304–317. DOI: 10.1109/TPAMI.2017.2672972. URL: https://hal.science/hal-01262728.

[A33] Ketan Bacchuwar, Jean Cousty, Régis Vaillant, Laurent Najman. "Scale-space for empty catheter segmentation in PCI fluoroscopic images". In: *International Journal of Computer Assisted Radiology and Surgery* 12.7 (2017), pp. 1179–1188. DOI: 10.1007/s11548-017-1612-7. URL: https://hal.science/hal-01445849.

[A34] Silvio J. Guimarães, Yukiko Kenmochi, Jean Cousty, Zenilton Patrocinio, Laurent Najman. "Hierarchizing graph-based image segmentation algorithms relying on region dissimilarity: the case of the Felzenszwalb-Huttenlocher method". In: *Mathematical Morphology - Theory and Applications* (2017). DOI: 10.1515/mathm-2017-0004. URL: https://hal.science/hal-01342967.

[A35] Tsubasa Hirakawa, Toru Tamaki, Takio Kurita, Bisser Raytchev, Kazufumi Kaneda, Chaohui Wang, Laurent Najman. "Tree-wise Discriminative Subtree Selection for Texture Image Labeling". In: *IEEE Access* 5 (July 2017), pp. 13617–13634. DOI: 10.1109/ACCESS.2017.2725319. URL: https://hal.science/hal-01570517.

[A36] Odyssée Merveille, Benoît Naegel, Hugues Talbot, Laurent Najman, Nicolas Passat. "2D filtering of curvilinear structures by ranking the orientation responses of path operators (RORPO)". In: *Image Processing On Line* 7 (2017), pp. 246–261. DOI: 10.5201/ipol.2017.207. URL: https://hal.science/hal-01599528.

[A37] Laurent Najman. "Extending the PowerWatershed framework thanks to Γ-convergence". In: *SIAM Journal on Imaging Sciences* 10.4 (Nov. 2017), pp. 2275–2292. DOI: 10.1137/17M1118580. URL: https://hal.science/hal-01428875.

[A38] Yongchao Xu, Edwin Carlinet, Thierry Géraud, Laurent Najman. "Hierarchical Segmentation Using Tree-Based Shape Spaces". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 39.3 (Mar. 2017), pp. 457–469. DOI: 10.1109/TPAMI.2016.2554550. URL: https://hal.science/hal-01301966.

[A39] Yongchao Xu, Thierry Géraud, Laurent Najman. "Connected Filtering on Tree-Based Shape-Spaces". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* 38.6 (May 2016), pp. 1126–1140. DOI: 10.1109/TPAMI.2015.2441070. URL: https://hal.science/hal-01162437.

[A40] Yongchao Xu, Thierry Géraud, Laurent Najman. "Hierarchical image simplification and segmentation based on Mumford-Shah-salient level line selection". In: *Pattern Recognition Letters* (May 2016). DOI: 10.1016/j.patrec.2016.05.006. URL: https://hal.science/hal-01287029.

[A41] Jessica Lebenberg, Alain Lalande, Patrick Clarysse, Irene Buvat, Christopher Casta, Alexandre Cochet, Constantin Constantinidès, Jean Cousty, Alain Cesare, Stéphanie Jehan-Besson, Muriel Lefort, Laurent Najman, Elodie Roullot, Laurent Sarry, Christophe Tilmant, Frouin Frederique, Mireille Garreau. "Improved Estimation of Cardiac Function Parameters Using a Combination of Independent Automated Segmentation Results in Cardiovascular Magnetic Resonance Imaging". In: *PLoS ONE* 10.8 (Aug. 2015), e0135715. DOI: 10.1371/journal.pone.0135715. URL: https://hal.sorbonne-universite.fr/hal-01235953.

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[A43] Jean Cousty, Gilles Bertrand, Michel Couprie, Laurent Najman. "Collapses and watersheds in pseudomanifolds of arbitrary dimension". In: *Journal of Mathematical Imaging and Vision* 50.3 (Sept. 2014), pp. 261–285. DOI: 10.1007/s10851-014-0498-z. URL: https://hal.science/hal-00871498.

[A44] Fabio Dias, Jean Cousty, Laurent Najman. "Dimensional operators for mathematical morphology on simplicial complexes". In: *Pattern Recognition Letters* 47 (Oct. 2014), pp. 111–119. URL: https://hal.science/hal-00934488.

[A45] Laurent Najman, Jean Cousty. "A graph-based mathematical morphology reader". In: *Pattern Recognition Letters* 47 (Oct. 2014), pp. 3–17. DOI: 10.1016/j.patrec.2014.05.007. URL: https://hal.science/hal-00986191.

[A46] Yongchao Xu, Pascal Monasse, Thierry Géraud, Laurent Najman. "Tree-Based Morse Regions: A Topological Approach to Local Feature Detection". In: *IEEE Transactions on Image Processing* 23.12 (Dec. 2014), pp. 5612–5625. DOI: 10.1109/TIP.2014.2364127. URL: https://hal.science/hal-01162446.

[A47] Camille Couprie, Leo Grady, Laurent Najman, Jean-Christophe Pesquet, Hugues Talbot. "Dual constrained TV-based regularization on graphs". In: *SIAM Journal on Imaging Sciences* 6.3 (July 2013). 26 pages, pp. 246–1273. DOI: 10.1137/120895068. URL: https://hal.science/hal-00743968.

[A48] Jean Cousty, Laurent Najman, Fabio Dias, Jean Serra. "Morphological filtering on graphs". In: *Computer Vision and Image Understanding* 117.4 (Apr. 2013), pp. 370–385. URL: https://hal.science/hal-00700784.

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