

Production scientifique de Laurent D. Cohen

Janvier 2018

1 Publications

Thèses.

- [1] Laurent D. Cohen. *Etude de quelques problèmes semi-linéaires paraboliques et elliptiques*. PhD thesis, Université Paris 6, 1986.
- [2] Laurent D. Cohen. *Etude des modèles de contours actifs et d'autres techniques de traitement d'Images*. 2nd PhD thesis, Université Paris-Sud Orsay, 1990.
- [3] Laurent D. Cohen. *Méthodes Variationnelles pour le Traitement d'images*. Université Paris Dauphine, 1995. Mémoire d'Habilitation à diriger des recherches. Accompagné des 10 publications les plus significatives des années 1988-1995.

Articles de Revues Internationales à comité de lecture

- [4] P. Baras and Laurent D. Cohen. Explosion totale après T_{max} de la solution d'une équation de la chaleur non linéaire. *Comptes Rendus de l'Académie des Sciences Sér.I*, 300(10), 1985.
- [5] P. Baras and Laurent D. Cohen. Complete blow-up after T_{max} for the solution of a semilinear heat equation. *Journal of Functional Analysis*, 71(1):142–174, March 1987.
- [6] Laurent D. Cohen. On active contour models and balloons. *Computer Vision, Graphics, and Image Processing: Image Understanding*, 53(2):211–218, March 1991. Cet article a été intégré dans un livre collectant les **meilleurs articles des 10 dernières années** sur le sujet.
- [7] Isaac Cohen, Laurent D. Cohen, and Nicholas Ayache. Using deformable surfaces to segment 3-D images and infer differential structures. *Computer Vision, Graphics, and Image Processing: Image Understanding*, 56(2):242–263, September 1992. Cet article a été intégré dans un livre collectant les **meilleurs articles des 10 dernières années** sur le sujet.
- [8] Laurent D. Cohen and Isaac Cohen. Finite element methods for active contour models and balloons for 2-D and 3-D images. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, PAMI-15(11):1131-1147, November 1993.
- [9] Isaac Cohen and Laurent D. Cohen. A hybrid hyperquadric model for 2-D and 3-D data fitting. *International Journal on Computer Vision and Image Understanding*, 63(3):527–541, May 1996.
- [10] Laurent D. Cohen. Auxiliary variables and two-step iterative algorithms in computer vision problems. *Journal of Mathematical Imaging and Vision*, 6(1):61–86, January 1996.
- [11] E. Bardinet, Laurent D. Cohen, and N. Ayache. Tracking and motion analysis of the left ventricle with deformable superquadrics. *MEDIA*,

- Medical Image Analysis, an international journal on Computer Vision, Visualisation and Image Guided Intervention in Medicine*, 1(2):129–149, 1996. Accompagné d’une vidéo dans la version CD du journal.
- [12] E. Bardinet, Laurent D. Cohen, and N. Ayache. Suivi de données médicales 3D avec un modèle paramétrique déformable. *Journal TSI, Technique et Science Informatiques*, 16(3/97):355–381, Mars 1997.
- [13] E. Bardinet, Laurent D. Cohen, and N. Ayache. A parametric deformable model to fit unstructured 3D data. *International Journal on Computer Vision and Image Understanding*, 71(1):39–54, July 1998.
- [14] Laurent D. Cohen and R. Kimmel. Global minimum for active contour models: A minimal path approach. *International Journal of Computer Vision*, 24(1):57–78, August 1997.
- [15] Denis Pellerin, Laurent D. Cohen, Fabrice Larrazet, Floris Pajany, Serge Witchitz, and Colette Veyrat. Preejectional left ventricular wall motion in normal subjects using doppler tissue imaging and correlation with ejection fraction. In *American Journal of Cardiology*, volume 80, pages 601–607, September 1997.
- [16] D Pellerin, A Berdeaux, L Cohen, JF Giudicelli, S Witchitz, and C Veyrat. Preejectional left ventricular wall motions studied on conscious dogs using doppler myocardial imaging. relationships with indexes of left ventricular function. *Ultrasound in Medicine and Biology*, 24(9):1271–1283, 1998.
- [17] C Veyrat, D Pellerin, L Cohen, F Larrazet, C Fournier, and S Witchitz. Dynamique pariétale prééjectionnelle du ventricule gauche par imagerie doppler tissulaire. *Archives des Maladies du Coeur et des Vaisseaux*, 91(1):29–38, 1998.
- [18] Pellerin D, Berdeaux A, Cohen L, Giudicelli JF, Witchitz S., and Veyrat C. Comparison of two myocardial velocity gradient assessment methods during dobutamine infusion using doppler myocardial imaging. *Journal of the American Society of Echocardiography*, 12(1):22–31, January 1999.
- [19] Veyrat C, Pellerin D, Cohen L, Larrazet F, Extramiana F, and Witchitz S. Spectral, one- or two-dimensional tissue velocity doppler imaging: which to choose? *Cardiology*, 9(1):9–18, 2000.
- [20] T. Deschamps and L.D. Cohen. Path Extraction in 3D Medical Images for Virtual Endoscopy. *Journal of Computer Aided Surgery*, 5(5), 2000.
- [21] M. Lefebure and L. D. Cohen. Image registration, optical flow and local rigidity. *Journal of Mathematical Imaging and Vision*, 14(2), March 2001. CEREMADE TR 0102, Jan 2001.
- [22] L. D. Cohen. Multiple contour finding and perceptual grouping using minimal paths. *Journal of Mathematical Imaging and Vision*, 14(3), May 2001. CEREMADE TR 0101, Jan 2001.
- [23] Fabrice Larrazet, Denis Pellerin, A Prigent, D Daou, Laurent D Cohen and Colette Veyrat Quantitative analysis of hibernating myocardium by dobutamine tissue Doppler echocardiography. In *American Journal of Cardiology*, volume 88(4), pages 418–22, 2001.

- [24] Zakaria Ben Sbeh, Laurent D. Cohen, Gérard Mimoun, and Gabriel Coscas. A new approach of geodesic reconstruction for drusen segmentation in eye fundus images. *IEEE Transactions on Medical Imaging*, December 2001.
- [25] T. Deschamps and L.D. Cohen. Fast extraction of minimal paths in 3D images and application to virtual endoscopy. *MEDIA, Medical Image Analysis, an international journal of Computer Vision, Visualisation and Image Guided Intervention in Medicine*, 5(4):281–299, December 2001. Video in the web version of the journal.
- [26] Frederic Richard and Laurent D. Cohen. A new image registration technique with free boundary constraints: application to mammographs. *International Journal on Computer Vision and Image Understanding*, Special Issue of on Nonrigid Image Registration, Volume 89, Issues 2-3, Pages 166-196 February - March 2003.
- [27] Denis Pellerin, Fabrice Larrazet, Laurent D Cohen, Serge Witchitz and Colette Veyrat. Myocardial time intervals preceding left ventricular filling in chronic coronary artery disease: value of a decreased septal ejection time. In *International Journal of Cardiology*, volume 89(1), pages 33-44, May 2003.
- [28] Denis Pellerin, Laurent D Cohen, Fabrice Larrazet, Fabrice Extramiana, Serge Witchitz and Colette Veyrat. New insights into septal anterior wall motion velocities at end-systole in normal and hypertrophied left ventricles. In *European journal of echocardiography*, volume 4(2), pages 108-118, 2003.
- [29] Colette Veyrat, Denis Pellerin, Fabrice Larrazet, Laurent D Cohen, and Serge Witchitz. Dynamic myocardial velocity changes between phases of the cardiac cycle. In *Ultrasound in medicine & biology*, volume 29(8), pages 1077-84, August 2003.
- [30] Colette Veyrat, Denis Pellerin, Fabrice Larrazet, and Laurent D Cohen. Clinical relevancy of the myocardial velocity gradient: limitations of a binary response. In *Journal of the American Society of Echocardiography*, volume 16(12), pages 1217-25, December 2003.
- [31] Laurent D. Cohen. Chemins minimaux et modèles déformables en analyse d'images. *Traitement du Signal*, Volume 20 numéro 3, Numéro spécial: Le traitement du signal à l'aube du XXIème siècle, Pages 225–241, Décembre 2003.
- [32] Colette Veyrat, Fabrice Larrazet, Laurent D Cohen, Francois Laborde and Denis Pellerin. A new Doppler tissue ratio to revisit systole: the pre-ejectional isovolumic to ejectional velocity ratio-application to aging. In *Journal of the American Society of Echocardiography*, volume 17(12), pages 1251-8, December 2004.
- [33] Pablo Arbelaez and Laurent D. Cohen. Energy Partitions and Image Segmentation. *Journal of Mathematical Imaging and Vision*, 20(1-2):43–57, January - March 2004.

- [34] Pablo Arbelaez and Laurent D. Cohen. Segmentation d'Images Couleur par partitions de Voronoi. *Traitement du Signal*, Volume 21 numéro 5, Numéro spécial: L'image numérique couleur, Pages 407-421, Février 2005.
- [35] Colette Veyrat, Fabrice Larrazet, Laurent D Cohen, Francois Laborde and Denis Pellerin. Detection of prominent left anterior descending coronary artery stenosis for patients with stable angina using Doppler tissue echocardiography. In *Journal of the American Society of Echocardiography*, volume 18(8), pages 821-9, August 2005.
- [36] Stephane Bonneau, Maxime Dahan and Laurent D. Cohen. Single Quantum Dot tracking based on perceptual grouping using minimal paths in a spatio-temporal volume. *IEEE Transactions on Image Processing, special issue on Molecular and Cellular Imaging*, 14(9):1384–1395, September 2005.
- [37] Roberto Ardon and Laurent D. Cohen. Fast Constrained Surface Extraction by Minimal Paths. *International Journal of Computer Vision*, Special Issue on Variational and Level Set Methods in Computer Vision (VLSM 2003), 69(1):127–136, August 2006.
- [38] Gabriel Peyre and Laurent D. Cohen. Geodesic Remeshing Using Front Propagation *International Journal of Computer Vision*, Special Issue on Variational and Level Set Methods in Computer Vision (VLSM 2003), 69(1):145–156, August 2006.
- [39] Pablo Arbelaez and Laurent D. Cohen. A Metric Approach to Vector-Valued Image Segmentation *International Journal of Computer Vision*, Special Issue on Variational and Level Set Methods in Computer Vision (VLSM 2003), 69(1):119–126, August 2006.
- [40] Roberto Ardon, Laurent D. Cohen and Anthony Yezzi. Fast surface segmentation guided by user input using implicit extension of minimal paths. *Journal of Mathematical Imaging and Vision*, 25(3):289–305, October 2006.
- [41] Hua Li, Anthony Yezzi and Laurent D. Cohen. Fast 3D Brain Segmentation Using Dual-front Active Contours With Optional User-Interaction *International Journal of Biomedical Imaging*, Special issue on Recent Advances in Mathematical Methods for the Analysis of Biomedical Images. 2006.
- [42] Roberto Ardon, Laurent D. Cohen and Anthony Yezzi. A new implicit method for surface segmentation by minimal paths in 3D images. *Applied Mathematics and Optimization*, 55(2):127-144, March 2007.
- [43] Laurent D. Cohen and Thomas Deschamps. Segmentation of 3D tubular objects with adaptive front propagation and minimal tree extraction for 3D medical imaging. *Computer Methods in Biomechanics and Biomedical Engineering*, 10(4):289 - 305, August 2007.
- [44] Gabriel Peyre and Laurent D. Cohen. Heuristically Driven Front Propagation for Fast Geodesic Extraction. *International Journal for Computational Vision and Biomechanics*, 1(1), 55–67, Jan-June 2008.
- [45] Fethallah Benmansour and Laurent D. Cohen. Fast Object Segmentation by Growing Minimal Paths from a Single Point on 2D or 3D Images

- Journal of Mathematical Imaging and Vision*. 33(2):209–221, February 2009.
- [46] Julien Mille and Fetallah Benmansour and Laurent D. Cohen Carotid Lumen Segmentation Based on Tubular Anisotropy and Contours Without Edges in *The MIDAS Journal*, Special issue on Carotid Lumen Segmentation and Stenosis Grading (MICCAI 2009 Grand Challenge III), July 2009.
- [47] N. Barreira and M. G. Penedo and Laurent Cohen and M. Ortega. Topological Active Volumes: a Topology-Adaptive Deformable Model for Volume Segmentation *Pattern Recognition*, 43(1):255-266, January 2010.
- [48] Fethallah Benmansour and Laurent D. Cohen. Tubular Structure Segmentation Based on Minimal Path Method and Anisotropic Enhancement in *International Journal of Computer Vision*, April 2011, Volume 92, Number 2, Pages 192-210.
- [49] Gabriel Peyre and Sebastien Bogleux and Laurent D. Cohen. Non-local Regularization of Inverse Problems *AIMS journal: Inverse Problems and Imaging*, vol. 5(2), pp. 511-530, May 2011.
- [50] Adrian Ion and N. M. Artner and Gabriel Peyre and Walter G. Kropatsch and Laurent D. Cohen. Matching 2D and 3D Articulated Shapes using Eccentricity. *CVIU, Computer Vision and Image Understanding*, vol. 115, 6 (June 2011) pp. 817-834
- [51] Didier Auroux, Laurent D. Cohen, and Mohamed Masmoudi Contour Detection and Completion for Inpainting and Segmentation Based on Topological Gradient and Fast Marching Algorithms in *International Journal of Biomedical Imaging*, Special Issue on Mathematical Methods for Images and Surfaces 2011, Volume 2011, Pages 1-20. doi:10.1155/2011/592924.
- [52] Youssef Rouchdy, Laurent D. Cohen, Olivier Pascual and Alain Bessis Minimal path techniques for automatic extraction of microglia extensions in *International Journal for Computational Vision and Biomechanics (IJCV&B)*, 2011
- [53] Miyoun Jung, Gabriel Peyre and Laurent D. Cohen. Non-local Active Contours. In *SIAM Journal on Imaging Sciences*, 5(3):1022-1054, September 2012.
- [54] Youssef Rouchdy and Laurent D. Cohen. Geodesic voting methods: overview, extensions, and application to blood vessel segmentation. In *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization*, 1(2):79-88, June 2013.
- [55] Chen Da, Mingqiang Yang and Laurent D. Cohen. Global Minimum For A variant Mumford-Shah Model with Application to medical image Segmentation In *Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization*, 1(1):48-60, March 2013. (**Best Paper Award**)
- [56] Jean-Baptiste Fiot, Laurent D. Cohen, Parnesh Raniga and Jurgen Fripp. Efficient brain lesion segmentation using multi-modality tissue-based feature selection and Support Vector Machines. In *International Journal*

- for *Numerical Methods in Biomedical Engineering*, 29(9):905915, September 2013.
- [57] Youssef Rouchdy and Laurent D. Cohen. Geodesic voting for the automatic extraction of tree structures. Methods and applications. In *Computer Vision and Image Understanding*, 117(10):1453-1467, October 2013.
- [58] Jean-Baptiste Fiot, Hugo Raguét, Laurent Risser, Laurent D. Cohen, Jurgen Fripp and François-Xavier Vialard, ADNI. Longitudinal deformation models, spatial regularizations and learning strategies to quantify Alzheimers disease progression. In *NeuroImage: Clinical*, 4:718-729, May 2014.
- [59] Julien Mille, Sébastien Bougleux and Laurent D. Cohen. Combination of piecewise-geodesic paths for interactive segmentation. in *International Journal of Computer Vision*, 112(1):1-22, March 2015.
- [60] Fang Yang and Laurent D. Cohen. Geodesic Distance and Curves Through Isotropic and Anisotropic Heat Equations on Images and Surfaces. in *Journal of Mathematical Imaging and Vision*, Special Issue on Shape Analysis Beyond the Eikonal Equation, 55(2):210-228, June 2016.
- [61] Da Chen, Jean-Marie Mirebeau and Laurent D. Cohen. Vessel Tree Extraction using Radius-Lifted Keypoints Searching Scheme and Anisotropic Fast Marching Method. in *Journal of Algorithms and Computational Technology*, 2016.
- [62] Da Chen, Jean-Marie Mirebeau and Laurent D. Cohen. Global Minimum For A Finsler Elastica Minimal Path Approach. in *International Journal of Computer Vision*, issue 03 2017.
- [63] Da Chen, Jean-Marie Mirebeau and Laurent D. Cohen. Fast Asymmetric Fronts Propagation for Image Segmentation. in *Journal of Mathematical Imaging and Vision*, To appear in 2017.
- [64] Qi-Chong Tian and Laurent D. Cohen. Histogram-based Color Transfer for Image Stitching. in *Journal of Imaging, Special Issue on Color Image Processing*, To appear in 2017.

Conférencier invité avec ou sans Actes de Colloques

- [65] Laurent D. Cohen and Isaac Cohen. Deformable models for medical images using finite elements & balloons. Conférence invitée. In *Actes Ecoles CEA - EDF - INRIA; Problèmes Non Linéaires Appliqués: Modélisations Mathématiques pour le traitement d'images*, pages 180–200, Rocquencourt, France, March 1992.
- [66] Laurent D. Cohen. Deformable surfaces and parametric models to fit and track 3D data. Conférence invitée à la session 3D shape Recovery and Analysis. In *IEEE International Conference on Systems, Man and Cybernetics*, Beijing, China, Oct 1996.
- [67] Laurent D. Cohen and R. Kimmel. Finding the global minimum for active contours using a level set approach. Conférence invitée à la session

- Partial Differential Equations. In *IEEE International Conference on Image Processing (ICIP'96)*, pages I:473–476, Lausanne, Suisse, September 1996.
- [68] Laurent D. Cohen. Modèles déformables. Conférence invitée. In *Actes de l'Ecole Thématique ISIS*, pages 1–20, Marly le Roy, Avril 1997.
- [69] Laurent D. Cohen and Thomas Deschamps. Minimal Paths for 3D medical images and Virtual endoscopy. Conférence invitée. In *Mathematics and Image Analysis, MIA'00*, Paris, September 2000.
- [70] Laurent D. Cohen and Benjamin Mauroy. Multiple minimal paths and perceptual grouping. Conférence invitée. In *Mathematics and Image Analysis, MIA'00*, Paris, September 2000.
- [71] Laurent D. Cohen. Fast marching methods for minimal paths in 2D and 3D images. Conférence plénière invitée. In *Proc. Workshop on Hamilton-Jacobi Bellman equations and their applications.*, Paris, France, October 2000.
- [72] Laurent D. Cohen. Chemins minimaux et Modèles Déformables en Analyse d'images. Conférence plénière invitée. In *Proc. Journées d'études SEE: Le Traitement d'Images à l'Aube Du XXIème Siecle.*, Paris, France, Mars 2002.
- [73] Laurent D. Cohen and Pablo Arbelaez. Minimal Paths and Image Segmentation. Conférence invitée. In *Mathematics and Image Analysis, MIA'02*, Paris, September 2002.
- [74] Laurent D. Cohen. Fast Marching and Front Propagation methods in Image Analysis. Conférence invitée. In *Fifth European Conference on Elliptic and Parabolic Problems*, Gaeta, Italy, June 2004.
- [75] Laurent D. Cohen. Fast Marching and Deformable Models in Image Analysis. Conférence invitée. In *IFIP workshop on shape optimization and control*, Lisbon, Portugal, May 2004.
- [76] Laurent D. Cohen and Roberto Ardon. Surface extraction by minimal paths, applications in 3D Medical Images. Conférence invitée. In *Mathematics and Image Analysis, MIA'04*, Paris, September 2004.
- [77] Laurent D. Cohen. Minimal Paths and Deformable Models for Image Analysis. Conférence invitée. In *76. Jahrestagung der Gesellschaft für Angewandte Mathematik und Mechanik e.V., GAMM05*, Université du Luxembourg, 28 Mars - 01 April 2005.
- [78] Laurent D. Cohen. Minimal Paths and Deformable Models for Image Analysis. Conférence invitée. In *Mini-invasive Procedures in Medicine and Surgery: Mathematical and Numerical Challenges*, Centre de recherches mathématiques, Université de Montreal, Canada, May 16-27, 2005.
- [79] Laurent D. Cohen and Roberto Ardon. A level set method for constrained object segmentation. Conférence invitée. In *22nd IFIP TC 7 Conference on System Modeling and Optimization, special session on shape analysis and optimization*, Turin, Italy, July 18-22, 2005.
- [80] Laurent D. Cohen. Surface Segmentation and Remeshing using front propagation in Medical Images. Conférence invitée. In *Actes Ecoles CEA*

- EDF - INRIA; Numerical Simulations of Blood Flows, December 6-9, 2005, Rocquencourt, France.
- [81] Laurent D. Cohen. Deformable models for medical image Analysis. Conférence invitée. In *Israel-France Meeting in Medical Imaging*, Hadasah University Hospital, Jerusalem, Israel, February 27-March 1st, 2006.
- [82] Laurent D. Cohen. Surface Segmentation using Front Propagation in Medical Images. Conférence invitée. In *7th international symposium on computer methods in biomechanics and biomedical engineering, special session on Computer Assisted Surgery and Planning*, Antibes, March 22-25, 2006.
- [83] Laurent D. Cohen. Invited to organize the minisymposium on Minimal Paths and Fast Marching Methods in Image Analysis. In *2006 SIAM Conference on Imaging Science.*, Minneapolis, Minnesota, USA, 15-17 may, 2006.
- [84] Laurent D. Cohen. Minimal Paths and Fast Marching Methods for Surface Segmentation and Meshing. In *Curves and Surfaces*, invited to minisymposium on Numerical geometry of images, Avignon, June 29- July 5, 2006.
- [85] Laurent D. Cohen and Gabriel Peyre. Exact and Heuristically Driven Geodesic Computations. In *Curves and Surfaces*, invited to minisymposium on Mesh generation, Avignon, June 29- July 5, 2006.
- [86] Laurent D. Cohen. Fast Marching and Minimal paths for Curve and Surface Segmentation. Conférence invitée. In *Journées de Metz 2007*, PDE and variational methods in image analysis, Metz, May 3-4-5, 2007.
- [87] Laurent D. Cohen. Front Propagation and Minimal paths for Image Segmentation. Conférence invitée. In *RIMA '07*, Rencontres MIP-LAMSIN en Imagerie Mathématique, Institut de Mathématiques de Toulouse, France, 11 et 12 Juin 2007.
- [88] Laurent D. Cohen. Geodesic Remeshing using front propagation. Conférence invitée. In *Summer Mathematical Research Center on Scientific Computing and Its Applications.*, Cemracs'07, Pre and Post Processing in Scientific Computing, Luminy, France, 23rd July-31st August 2007.
- [89] Laurent D. Cohen. Fast Curve and Surface Segmentation by finding geodesics. Invited Keynote. Conférence invitée. In *VipIMAGE 2007*, International ECCOMAS Thematic Conference on computational vision and medical image processing, FEUP, Porto, Portugal, 17-19th October 2007.
- [90] Laurent D. Cohen. Front propagation and Fast Marching for fast segmentation of objects in 2D and 3D images. Invited Keynote. Conférence invitée. In *Joint International Meeting of the AMS and Sociedade Brasileira de Matematica*, Special session on Mathematical Methods in Image Processing, IMPA, Rio de Janeiro, Brazil, June 4-7th 2008.
- [91] Laurent D. Cohen. Curve and Surface Segmentation Using Minimal Paths. In *2008 SIAM Annual Meeting*. Invited to Minisymposium on Segmentation and Data Mining, San Diego, California, USA, July 7-11, 2008.

- [92] Laurent D. Cohen. Curve and Surface Segmentation using Fast Marching approaches for medical images. Conférence invitée. In *Imaging and Measurements in Biomedical Engineering* Paris, France October 2-3, 2008.
- [93] Laurent D. Cohen. Lignes géodésiques et segmentation d'images. Conférence invitée. In *SMAI-AFA Approximation, Modélisation Géométrique et Applications*. CIRM, Luminy, France, 24-28 novembre 2008.
- [94] Laurent D. Cohen. Lignes géodésiques et analyse d'images. Conférence invitée. In *Séminaire de Mathématiques appliquées du Collège de France*, Paris, France 16 Janvier 2009.
- [95] Laurent D. Cohen. Lignes géodésiques et analyse d'images médicales. Conférence invitée. In *1ère Journée de la Recherche à Dauphine* Paris, France 12 mai 2009.
- [96] Laurent D. Cohen. Modèles Déformables et Chemins Minimaux, Applications en analyse d'images médicales. Conférence invitée. In *Cérémonie SMAI en l'honneur des lauréats des prix de Mathématiques Appliquées de l'Académie des Sciences IHP*, Paris, France, 18 Novembre 2009.
- [97] Laurent D. Cohen. Invited to organize the minisymposium on Anisotropic Fast Marching and Applications. In *2010 SIAM Conference on Imaging Science.*, Chicago, Illinois, USA, 14 April 2010.
- [98] Laurent D. Cohen. Extraction of tubular and tree structures in biomedical images using minimal paths and tubular models. Conférence invitée. in *Ill-posed Problems*, Rome, Italy. November 29-30, 2010.
- [99] Laurent D. Cohen. Geodesic Methods for Biomedical Image Segmentation. Keynote. in *1st Technion Computer Engineering (TCE) Conference*, Technion, Haifa, Israel. June 1-5, 2011.
- [100] Laurent D. Cohen. Geodesic Methods for Biomedical Image Segmentation. Conférence invitée. in *Analytic and Geometric Methods in Medical Imaging*, Cambridge, UK. August 22-26, 2011.
- [101] Laurent D. Cohen. Geodesic Voting for Image Segmentation. Conférence invitée. in *Fronts and Interfaces in Science and Technology*, bath, UK. December 13-15, 2011.
- [102] Laurent D. Cohen. A Voting scheme for vessel tree segmentation. Conférence invitée. in *Retinal Imaging Treatment and Analysis meeting (RITA)*, Institut de la Vision, Paris, France, October 15, 2012.
- [103] Laurent D. Cohen. Non Local Active Contours. Conférence invitée. in *Workshop on Image Processing and Reaction-Diffusion*, Jerusalem, Israel, September 11-13, 2012.
- [104] Laurent D. Cohen. Non Local Active Contours. Conférence invitée. in *Workshop on Nonlocal Problems*, Zurich, Switzerland, December 12-14, 2012.
- [105] Laurent D. Cohen. Segmentation d'images vasculaires par vote géodésique. Conférence invitée. in *Journée thématique mathématiques, image et biomédecine*, Paris, France, 18 décembre 2012.

- [106] Laurent D. Cohen. Extraction of tubular and tree structures in biomedical images using minimal paths and tubular models. Conférence invitée. in *Summer School and Workshop on Recent Advances in PDEs and Fluids à Stanford University*, Palo Alto, Californie, August 5-18, 2013.
- [107] Laurent D. Cohen. Automatic segmentation of natural images with Anisotropic Fast Marching algorithm and Geodesic voting. Conférence invitée. in *Fronts and Interfaces in Science and Technology*, Madrid, Spain, December 11-13, 2013.
- [108] Laurent D. Cohen. Geodesic Method for Blood Vessels and Tree Structure Segmentation. In *2014 SIAM Imaging Science Meeting*. Invited conference to Minisymposium on Detection and Analysis of Blood Vessels and Tree Shapes, Hong Kong, 12-14 May 2014.
- [109] Laurent D. Cohen. Minimally Overlapping Combination of Geodesic Paths for Interactive Segmentation. Conférence invitée. In *Research Workshop on Shape and Image Modeling and Analysis (SIMA)*., Ein-Gedi, The Dead Sea, Israel, 28-31 May 2014.
- [110] Laurent D. Cohen. Geodesic Methods for Biomedical Image Segmentation. Keynote. in *4th International Conference on Image Processing Theory, Tools and Applications, IPTA*, Paris, France. October 14-17, 2014.
- [111] Laurent D. Cohen. Geodesic methods in Biomedical Image Analysis. Conférence invitée. In *Advanced Study School on Imaging for Medical Applications.*, Sinaia, Romania, 29 June-4 July 2015.
- [112] Laurent D. Cohen. Segmentation of biomedical images using geodesic methods. Conférence invitée. In *Third International Workshop on Image Processing Techniques and Applications, incorporating Mathematical Imaging with Biomedical Applications.*, Liverpool, UK, 6-8 July 2015.
- [113] Laurent D. Cohen. Segmentation of retinal images using geodesic methods. Conférence invitée. In *Computer Methods in Biomechanics and Biomedical Engineering 2015 (CMBBE 2015)*., Montreal, Canada, September 1-5 2015.
- [114] Laurent D. Cohen. The Fast Marching Algorithm for Image Segmentation. Conférence invitée. In *Workshop on Algorithms and Applications (In honor of Ed Reingold's contributions on his 70th Birthday)*., Chicago, IL, USA, October 12 2015.
- [115] Laurent D. Cohen. Méthodes géodésiques pour la segmentation d'images médicales,. Conférence invitée. In *Horizon Maths 2015 (Fondation Sciences Mathématiques de Paris)*, IBM Bois-Colombes, France, 14-15 Décembre 2015.
- [116] Laurent D. Cohen. Geodesic curves for region-based segmentation. Conférence invitée Special Session on Image Analysis. In *2016 ICSEE International Conference on the Science of Electrical Engineering.*, Eilat, Israel, November 16-18, 2016.
- [117] Laurent D. Cohen. Geodesic methods for interactive image segmentation of biomedical images. Conférence invitée. in *International Workshop for Mathematical Imaging and Digital Geometry*, Beijing, China, June 12-13, 2017.

- [118] Laurent D. Cohen. Geodesic methods for interactive image segmentation of biomedical images. Conférence invitée. In *Summer School VIVABRAIN 2017 - Cerebral MR Angiography: acquisition, processing, simulation.*, Marne-La-Valle, France, 26-29 Juin 2017.
- [119] Laurent D. Cohen. Geodesic Methods for Interactive Image Segmentation of biomedical images. Conférence invitée. In *International Summer School on Imaging for Medical Applications.*, Brasov, Romania, 17-21 July 2017.
- [120] Laurent D. Cohen. Geodesic Methods for Interactive Image Segmentation using Finsler metrics. Conférence invitée. in *Variational methods, new optimisation techniques and new fast numerical algorithms*, Cambridge, UK. September 4-8, 2017.
- [121] Laurent D. Cohen. Invited to organize the session on Geodesic Methods with Constraints. In *3rd conference on Geometric Science of Information GSI2017.*, Paris, France, 7-9 November, 2017.

Actes de Colloques avec comité de lecture

Remarquer que certaines entrées regroupent plusieurs publications.

La presque totalité de ces conférences sont internationales.

- [122] Laurent D. Cohen. A new approach of vector quantization for image data compression and texture detection. In *International Conference on Pattern Recognition (ICPR'88)*, Rome, 1988.
- [123] Laurent D. Cohen, Laurent Vinet, Peter T. Sander, and André Gagalowicz. Hierarchical region based stereo matching. In *Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'89)*, San Diego, June 1989.
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 - University of South California, Los Angeles (Août 93).
 - INRIA Sophia Antipolis (Février 94).
 - Technion, Haifa (Octobre 94)
 - Brown University, Providence, *Diffusion meeting 1995 ESPRIT-NSF* (Juin 95).
 - Présentation de travaux au GT1 du GDR-PRC Communication Homme-Machine sur les approches variationnelles et statistiques (7 Juillet 95).
 - Hebrew University, Jerusalem (Octobre 88 et 95);
 - Weizman Institute, Rehovot (Octobre 95).
 - Lawrence Berkeley Laboratory (LBL) et University of California, Berkeley, Californie (Juin 1996).
 - INESC et Instituto Superior Tecnico, Technical University, Lisbonne, Portugal (Novembre 1996).
 - Conférence invitée à l’assemblée générale du GDR ISIS, Marly-le-Roy (4 Avril 97).
 - Conférence invitée au GT3 du GDR ISIS - Modèles déformables dynamiques (14 Octobre 97).
 - CMLA, ENS Cachan (11 Décembre 97).
 - Conférence invitée à la journée “Imagerie Doppler et modélisation du myocarde,” Faculté de Médecine Paris-Sud (11 février 98)
 - Enserb, Bordeaux (18 Février 1998).
 - Conférence invitée au GT3 du GDR ISIS - Modèles déformables dynamiques (22 Novembre 1999).
 - Colloquium du CEREMADE (27 Mars 2001).
 - INRIA Sophia Antipolis (6 Novembre 2001).
 - Technion, Haifa et Tel Aviv University (15 et 16 Janvier 2002).
 - Laboratoire Jacques-Louis Lions, Paris 6, (9 Avril 2002).
 - McGill University et University of Ottawa, Canada (Aout 2002)
 - University of South Florida, et University of Central Florida, USA (Décembre 2002)
 - INRIA Sophia Antipolis (21 Juillet 2003).
 - Conférence invitée, Réunion plénière du GDR ISIS (11 Décembre 2003).
 - CMAP, Ecole Polytechnique (20 Janvier 2004)
 - ESIEE (7 Avril 2005)

- INRIA Sophia Antipolis (19 Juillet 2005).
- Technion, Haifa (26 Février 2006).
- CREATIS, INSA Lyon (24 Octobre 2007).
- Hebrew University, Jerusalem (20 Décembre 2007);
- UCLA, University of California, Los Angeles, Californie, USA (14 Juillet 2008);
- University of California, Berkeley, Californie, USA (16 Juillet 2008);
- Collège de France, (16 Janvier 2009).
- Paris 6, (17 Février 2009).
- Cogimage, Centre de Recherche de l’Institut du Cerveau et de la Moelle Epinière , (11 Janvier 2010).
- Séminaire des Mathématiques, ENS Ulm (13 Janvier 2010).
- Séminaire de Biologie, ENS Ulm (8 Mars 2010).
- Paris 6, (14 Juin 2011).
- ESIEE (16 Juin 2011)
- Imperial College (Londres) (29 Aout 2011)
- York University (3 Mai 2012)
- University of Toronto (7 Mai 2012)
- Jerusalem College of Technology (Septembre 2012)
- ETHZ, Ecole Polytechnique de Zurich (Décembre 2012)
- Stanford University, Palo Alto, Californie (Aout 2013).
- UCLA, University of California, Los Angeles, Californie, USA (12 Aout 2013);
- Chinese University of Hong Kong, Hong Kong (9 Mai 2014);
- McGill University, Canada (Aout 2015)
- CRM, Université de Montreal, Canada (Octobre 2015)
- Hebrew University, Jerusalem (21 Décembre 2015);
- TU/e Eindhoven, Pays-Bas (25 Janvier 2017)
- Séminaires invités de traitement d’images dans un cadre industriel:
 - DEC à Boston (Juin 92).
 - Schlumberger Cambridge Research (G.B.) (Septembre 93).
 - Thomson-LCR Orsay (Juin 1994).
 - IBM et Elscint (Matériel d’imagerie médicale, Octobre 94), Haifa;
 - Conférence d’ouverture du Groupe de travail sur le theme ”image” au College Scientifique et Technique de Thomson-CSF (14 Mai 97)
 - Matra Cap Systèmes (22 Mai 97)
 - Elf Aquitaine Pau (23 Septembre 97)
 - Laboratoire d’électronique Philips (LEP) (4 Novembre 97)
 - Séminaire d’une journée sur les modèles déformables dans le cadre du GRECO-Transfert Industriel (26 Mars 1998).
 - SEE : Le Traitement d’images à l’aube du 21eme siecle (27 Mars 2002).
 - Algotec, Israel (15 Septembre 2008)
 - Philips, Suresnes (3 Septembre 2009)
 - EADS, Saint Cloud (12 Janvier 2010)
 - Algotec, Israel (2 Juin 2011)
 - Safran, Issy les Moulineaux (13 Juillet 2012)
 - HeartFlow, Redwood city, California (5 Aout 2013)

- Smiths Detection, Vitry-Sur-Seine (22 Mai 2014)
- Huawei, Boulogne-Billancourt (3 Février 2017)
- Présentation de nos travaux par mon thésard Eric Bardinet lors des journées sur l’Imagerie Cardiaque organisées par le GDR TDSI (GT 5) à Telecom Paris en Janvier 1995 et au GT3 “Modèles déformables dynamiques” en Janvier 1996, ainsi qu’aux journées Orasis à Sophia-Antipolis (1994 et 1995).
- Présentation de nos travaux par mon thésard Bertrand Leroy au GDR-PRC Communication Homme-Machine projet Amibe et à l’école des Mines de Paris.
- Présentation de nos travaux par mon thésard Martin Lefébure aux journées Orasis à Sophia-Antipolis (Octobre 1997) et à une journée GDR.
- Présentation de nos travaux par P. SAYD au GT 5 du GDR-PRC ISIS : Journées de travail ”Numérisation et Modélisation 3D (Janvier 2001).
- Présentation de nos travaux par mon thésard Pablo Arbelaez à la journée Morphologie Mathématique du GDR ISIS (Mai 2003).
- Présentation de nos travaux par Gabriel Peyre aux journées de Géométrie Algébrique (Septembre 2003).
- Présentation de nos travaux par mon thésard Pablo Arbelaez au séminaire du CMLA, ENS Cachan (Juin 2006).
- Présentation de nos travaux par Gabriel Peyre au CERTIS, ENPC (Décembre 2007).
- Présentation de nos travaux par mon thésard Fethalla Benmansour au séminaire du Technion, Haifa, Israel, (26 Décembre 2007).
- Présentation de nos travaux par Gabriel Peyre aux journées signal, image, tomographie, Bordeaux (Avril 2008).
- Nombreuses présentations de nos travaux par des doctorants ou collaborateurs.

Thèses soutenues sous ma direction

1. Isaac Cohen : Thèse de doctorat d'université, spécialité Mathématiques appliquées soutenue à Paris-Dauphine le 3 Juin 1992 sur les "*Modèles déformables 2-D et 3-D: Application à la segmentation d'images médicales*".
2. Eric Bardinnet (à l'INRIA Sophia Antipolis): Thèse de doctorat d'université, spécialité Mathématiques appliquées soutenue à Paris-Dauphine le 19 Décembre 1995 sur "*Modèles déformables contraints: Applications à l'imagerie médicale.*"
3. Bertrand Leroy: Thèse de doctorat d'université, spécialité Mathématiques appliquées soutenue à Paris-Dauphine le 27 Juin 1996 sur les "*Modèles déformables et modèles de déformation appliqués à la reconnaissance de visage.*"
4. Zakaria Ben Sbeh : Thèse soutenue à Paris-Dauphine le 6 Mai 1998 "*Une nouvelle méthode de segmentation en morphologie mathématique basée sur la reconstruction géodésique: Applications à l'extraction de drusen en imagerie d'angiographie numérisée d'ophtalmologie.*"
5. Martin Lefebure : Thèse de doctorat d'université, spécialité Mathématiques appliquées soutenue à Paris-Dauphine le 3 Novembre 1998 "*Estimation de Mouvement et Recalage de Signaux et d'Images : Formalisation et Analyse.*"
6. Thomas Deschamps : Thèse soutenue à Paris-Dauphine le 20 Décembre 2001 *Extraction de courbes et surfaces par méthodes de chemins minimaux et ensembles de niveaux, Applications en Imagerie médicale 3D.*
7. Samuel Vinson : Thèse soutenue le 29 Avril 2002 à Paris-Dauphine. *Modèles déformables et Méthodes variationnelles : applications en imagerie satellitaire et aérienne.*
8. Roberto Ardon : Thèse soutenue le 17 Mars 2005 à Paris-Dauphine. *Extraction de surfaces contraintes dans des images 3D et chemins minimaux, applications en imagerie mdicale.*
9. Valérie Moreau : Thèse soutenue le 15 Décembre 2005 à l'INRIA Sophia. *Méthodes Variationnelles et séquentielles pour l'étude de la contraction cardiaque.*
10. Pablo Arbelaez : Thèse soutenue le 24 Novembre 2005 à Paris-Dauphine. *Une approche métrique pour la Segmentation d'images.*
11. Stéphane Bonneau : Thèse soutenue le 18 Décembre 2006 à Paris-Dauphine. *Chemins minimaux en Analyse d'images : Nouvelles contributions et applications à l'imagerie biologique. .*
12. Oudom Somphone : Thèse soutenue le 4 Février 2009 à Paris-Dauphine. *Recalage par éléments finis avec partition de l'unité - Applications en imagerie médicale.*
13. Adrien Auclair: Thèse soutenue le 10 septembre 2009. *Méthodes rapides pour la recherche des plus proches voisins SIFT : application à la recherche d'images, et Contributions à la reconstruction 3D multivues.*

14. Fethalla Benmansour : Thèse soutenue le 17 Décembre 2009 *Méthode des chemins minimaux appliquée à l'imagerie médicale : Segmentation de structures Tubulaires et de Surfaces par Anisotropie multi-échelle et par détection récursive de points -clés.*
15. Jean-Baptiste Fiot : Thèse soutenue le 17 Septembre 2013 *Mathematical methods of image analysis for cross-sectional and longitudinal population studies* . Collaboration avec CSIRO, Australie. Contrat Doctoral Université Paris-Dauphine. Prix de la meilleure thse 2014 de la Fondation Dauphine. Research Scientist, PhD IBM Research - Ireland.
16. Prasenjit Saha : Thèse DSRA soutenue le 16 Septembre 2013 *Méthodes géodésiques en analyse d'images.* Contrat doctoral Université Paris Dauphine.
17. Raphael Prevost : Thèse soutenue le 21 Octobre 2013 *Variational methods for model-based image segmentation - Applications in medical imaging* , Convention CIFRE Philips Recherche France (PRF). Prix de la meilleure thse 2014 de la Fondation Dauphine. Research Scientist, Im-Fusion, Munich.
18. Jose Alberto Iglesias Martinez: Thèse commencée en 2010 sur des *méthodes de vote géodésique pour la reconnaissance de formes*, en collaboration avec le Technion, Haifa, Israel, dans le cadre d'une bourse du projet Européen FIRST. Thèse soutenue en 2015. Université de Vienne, Autriche.
19. Da Chen: Thèse commencée en Novembre 2012, soutenue le 27 Septembre 2016 sur des *Nouveaux modles de chemin minimal pour l'extraction de structures tubulaires et la segmentation d'images*, bourse Chinoise.
20. Fang Yang: Thèse commencée en Novembre 2013, soutenue le 14 Septembre 2017, sur *Finding Contours in Images Using Geodesic Lines and Field Lines*, bourse Chinoise.