

Production scientifique de Laurent D. Cohen

Septembre 2023

Publications

Il est à noter que dans le domaine du traitement d'images, les actes de conférences internationales sélectives sont souvent préférés aux publications dans des journaux scientifiques, et leur sont de valeur similaire.

Les publications sont classées par catégories dans un ordre adapté de celui recommandé par le CNRS (qui est le suivant: 1.revues à comité de lecture; 2.conférences invitées dans des congrès; 3.actes de colloques à comité de lecture; 4.publications dans des revues sans comité; 5.communications à des congrès, symposium; 6.séminaires, workshops; 7.livres et ouvrages; 8.chapitres d'ouvrages; 9.logiciels; 10.autres)

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.
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- [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.
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- [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.
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- [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.
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Conférencier invité avec ou sans Actes de Colloques

- [75] 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.
- [76] 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.
- [77] 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 1:473–476, Lausanne, Suisse, September 1996.
- [78] Laurent D. Cohen. Modèles déformables. Conférence invitée. In *Actes de l'Ecole Thématique ISIS*, pages 1–20, Marly le Roy, Avril 1997.

- [79] 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.
- [80] Laurent D. Cohen and Benjamin Mauroy. Multiple minimal paths and perceptual grouping. Conférence invitée. In *Mathematics and Image Analysis, MIA'00*, Paris, September 2000.
- [81] 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.
- [82] 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.
- [83] Laurent D. Cohen and Pablo Arbelaez. Minimal Paths and Image Segmentation. Conférence invitée. In *Mathematics and Image Analysis, MIA'02*, Paris, September 2002.
- [84] 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.
- [85] 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.
- [86] 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.
- [87] Laurent D. Cohen. Minimal Paths and Deformable Models for Image Analysis. Conférence invitée. In *76. Jahrestagung der Gesellschaft fur Angewandte Mathematik und Mechanik e.V., GAMM05*, Université du Luxembourg, 28 Mars - 01 April 2005.
- [88] 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.
- [89] 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.
- [90] 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.
- [91] Laurent D. Cohen. Deformable models for medical image Analysis. Conférence invitée. In *Israel-France Meeting in Medical Imaging*, Hadassah University Hospital, Jerusalem, Israel, February 27-March 1st, 2006.
- [92] 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.

- [93] 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.
- [94] 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.
- [95] 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.
- [96] 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.
- [97] 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.
- [98] 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.
- [99] Laurent D. Cohen. Fast Curve and Surface Segmentation by finding geodesics. Invited Keynote. Conférence invitée. In *VipIMAGE 2007*, International EC-COMAS Thematic Conference on computational vision and medical image processing, FEUP, Porto, Portugal, 17-19th October 2007.
- [100] 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.
- [101] 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.
- [102] 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.
- [103] 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.
- [104] 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.
- [105] 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.

- [106] 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.
- [107] 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.
- [108] 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.
- [109] Laurent D. Cohen. Geodesic Methods for Biomedical Image Segmentation. Keynote. in *1st Technion Computer Engineering (TCE) Conference*, Technion, Haifa, Israel. June 1-5, 2011.
- [110] 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.
- [111] Laurent D. Cohen. Geodesic Voting for Image Segmentation. Conférence invitée. in *Fronts and Interfaces in Science and Technology*, bath, UK. December 13-15, 2011.
- [112] 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.
- [113] Laurent D. Cohen. Non Local Active Contours. Conférence invitée. in *Workshop on Image Processing and Reaction-Diffusion* , Jerusalem, Israel, September 11-13, 2012.
- [114] Laurent D. Cohen. Non Local Active Contours. Conférence invitée. in *Workshop on Nonlocal Problems* , Zurich, Switzerland, December 12-14, 2012.
- [115] Laurent D. Cohen. Segmentation d'images vasculaires par vote géodésique. Conférence invitée. in *Journée thématique mathématiques, image et biomédecine*, Paris, France, 18 décembre 2012.
- [116] 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.
- [117] 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.
- [118] 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.
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- Séminaires invités dans un cadre universitaire:
 - Séminaire Analyse Numérique Université Paris 6 (85).
 - Colloquium du CEREMADE (Janvier 91).
 - Séminaire “Structure déformable en Imagerie” de Sudimage-Ecole Normale Supérieure, rue d’Ulm puis Cachan (Janvier 91 et 95).
 - Université de Nancy (Novembre 92).
 - Stanford Research Institute, Menlo Park, Californie (Juillet 93).
 - Stanford University, Palo Alto, Californie (Juillet 93).
 - 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)
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 - Conférence invitée au GT3 du GDR ISIS - Modèles déformables dynamiques (22 Novembre 1999).
 - Colloquium du CEREMADE (27 Mars 2001).
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 - Technion, Haifa et Tel Aviv University (15 et 16 Janvier 2002).
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 - McGill University et University of Ottawa, Canada (Aout 2002)
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 - 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)
 - Hebrew University, Jerusalem (9 Janvier 2019);
 - Séminaire journée Mokaplan (20 Février 2019);
 - Nanjing Southeast University, Chine (28 Aout 2019);
 - INRIA Sophia Antipolis (22 Novembre 2022).
 - NTU, Nanyang Technological University, Singapore (15 Septembre 2022);
 - University of Osaka, Japon (30 Aout 2023);
- 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'electronique 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)
 - Philips Medical, Haifa, Israel (7 Janvier 2019) –
- Nombreuses présentations de nos travaux par des doctorants ou collaborateurs dans des séminaires ou GDR.

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 Bardinet (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 médicale.*
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 à Paris-Dauphine
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 à Paris-Dauphine
Mathematical methods of image analysis for cross-sectional and longitudinal population studies .
16. Prasenjit Saha : Thèse DSRA soutenue le 16 Septembre 2013 à Paris-Dauphine
Méthodes géodésiques en analyse d'images.
17. Raphael Prevost : Thèse soutenue le 21 Octobre 2013 à Paris-Dauphine
Variational methods for model-based image segmentation - Applications in medical imaging .
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 soutenue le 27 Septembre 2016 à Paris-Dauphine sur des *Nouveaux modèles de chemin minimal pour l'extraction de structures tubulaires et la segmentation d'images.*
20. Fang Yang: Thèse soutenue le 14 Septembre 2017 à Paris-Dauphine, sur *Finding Contours in Images Using Geodesic Lines and Field Lines.*
21. Abraham Marciano: Thèse soutenue le 3 Juillet 2018 à Paris-Dauphine, sur des *méthodes de recalage pour des images de radiographie industrielle.*
22. Qi-Chong Tian: Thèse soutenue le 4 Octobre 2018 à Paris-Dauphine, sur *Color Correction and Contrast Enhancement for natural Images and Videos.*
23. Emmanuel Cohen: Thèse soutenue le 19 Décembre 2018 à Paris-Dauphine, sur *Cartographie, analyse et reconnaissance des réseaux vasculaires par Doppler ultrasensible.*
24. Liu Li: Thèse soutenue le 28 Aout 2019, sur des *Geodesic metrics approach and its application in retinal image processing.* En codirection avec le Pr Shu, Nanjing Southeast University, Chine
25. Raphael Grosnot: Thèse soutenue le 29 Juin 2021 à Paris-Dauphine, sur *:Représentations séparables de formes 3D pour le traitement de formes, Separable 3D Shape representation for shape processing.*