

# Olivier Lézoray

PROFESSOR OF COMPUTER SCIENCE · UNIVERSITY OF CAEN NORMANDY

Teaching<sup>1</sup>: Cherbourg Institute of Technology, Multimedia and Internet Department, 120 Rue de l'exode, F-50000 SAINT-LÔ, France

Research<sup>2</sup>: GREYC UMR CNRS 6072, Image Team, ENSICAEN, 6 Bd. Marechal Juin, F-14000 CAEN, France

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## Personal Information

**Last name** Lézoray  
**First name** Olivier  
**Birth date** September 12, 1972  
**Birth place** Lannion, Brittany, France  
**Nationality** French  
**Marital Status** Married, three childrens  
**Society Memberships** IEEE (Senior Member), EURASIP, IAPR, GFINC



## Education

### University of Caen Normandy

HABILITATION THESIS IN COMPUTER SCIENCE, GRADUATED WITH HONORS

• Image processing by discrete models on graphs and image data classification by machine learning

Caen, France

2007

### University of Caen Normandy

PH.D. THESIS IN COMPUTER SCIENCE, GRADUATED WITH HIGHEST HONORS

• Color Image Morphological Segmentation and Data Classification with neural networks: application to cellular sorting in serous cytology

Caen, France

1997-2000

### University of Caen Normandy

MASTER IN COMPUTER SCIENCE (ALGORITHMICS, ARTIFICIAL INTELLIGENCE), GRADUATED WITH HONORS

Caen, France

1994-1995

### University of Caen Normandy

BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE

Caen, France

1993

## Professional Appointments

### Multimedia and Internet Department, Cherbourg Institute Of Technology, University of Caen Normandy

FULL PROFESSOR OF COMPUTER SCIENCE

Saint-Lô, France

2009-

### Cherbourg Institute Of Technology, University of Caen Normandy

ASSOCIATE PROFESSOR OF COMPUTER SCIENCE, COMMUNICATION NETWORKS AND SERVICES DEPARTMENT

Cherbourg, France

2000-2009

### Computer Science Department, University of Caen Normandy

ASSISTANT PROFESSOR OF COMPUTER SCIENCE

Caen, France

1999-2000

### French National League against Cancer

PH.D. STUDENT AND TEACHING ASSISTANT OF COMPUTER SCIENCE

Cherbourg, France

1997-2000

### 501-503th Regiment of tanks

MILITARY SERVICE, FRENCH ARMY, RANK: MASTER CORPORAL

Mourmelon-le-Grand, France

1996

## Skills

**Teaching** Object Oriented Programming, Web Development, Image Processing, Machine Learning  
**Research** Graph-based signal processing, adaptive and multidimensional mathematical morphology, and machine learning  
**Applications** Computational Photography, Computer-Aided Diagnosis  
**Programming** C++, C, Java, R  
**Web Development** HTML, CSS, JavaScript, Php, SQL  
**Certifications** Google - Fundamentals of digital Marketing (26 modules, 40 hours)  
**Languages** French (native speaker), English (near native / fluent), German and Spanish (basic communication skills)  
**Sports** Judo (Black Belt First Dan), Running, Cardio training, Tennis

# Responsibilities

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## UNIVERSITY

2019-	<b>Project manager of partnership relations for the GREYC research laboratory,</b> University of Caen Normandy	<i>Caen, France</i>
2015-	<b>Head of the Multimedia and Internet Department,</b> Cherbourg Institute Of Technology, University of Caen Normandy	<i>Saint-Lô, France</i>
2012-	<b>Elected member of the GREYC research laboratory council,</b> University of Caen Normandy	<i>Caen, France</i>
2011-	<b>Head of the Committee of Computer Science Professors,</b> University of Caen Normandy	<i>Caen, France</i>
2008-2016	<b>Chair of the Institute Research Committee,</b> Cherbourg Institute Of Technology, University of Caen Normandy	<i>Cherbourg, France</i>
2009-2011	<b>Director of Graduate Studies - Communication Networks and Services Department,</b> Cherbourg Institute Of Technology, University of Caen Normandy	<i>Saint-Lô, France</i>
2012-	<b>Elected member of the institute council,</b> Cherbourg Institute Of Technology	<i>Cherbourg, France</i>
2007-2009	<b>Deputy Head of the Committee of Computer Science Professors,</b> University of Caen Normandy	<i>Caen, France</i>
2000-2006	<b>Director of Graduate Studies - Communication Networks and Services Department,</b> Cherbourg Institute Of Technology, University of Caen Normandy	<i>Saint-Lô, France</i>
2000-	<b>Supervision of 13 Ph.D. and 3 Post -Doc Students,</b> University of Caen Normandy	<i>Caen, France</i>

## NATIONAL

	<b>National research evaluation,</b> French National Research Agency (2015-), High Council for Evaluation of Research and Higher Education (2017), Technological Research Agency (2012-2015), Université Cote d'Azur (2017), Région Nouvelle Aquitaine (2018)	<i>France</i>
	<b>Member of the organizing committees of national conferences,</b> JNCN 2008&2014, CNRIUT 2011, CORESA 2006&2017	<i>France</i>
	<b>Reviewer for 17 PhD and 4 Habilitation thesis committees.</b>	<i>France</i>
2009-2016	<b>Scientific animator in the CNRS National Research Group ISIS,</b> Color and multimodality theme	<i>France</i>
2018	<b>Referee for the "Web Design and Development" skill,</b> WorldSkills France	<i>France</i>

## INTERNATIONAL

	<b>International research evaluation,</b> United States-Israel Binational Science Foundation (2017), UK Medical Research Council (2013, 2014), Marie-Curie European Post-Doctoral Fellowship (2016-), Netherlands Organisation for Scientific Research (2017)	
	<b>Program Chair of International Conferences,</b> ICISP 2008, 2010, 2012, and 2014	
	<b>Co-organization of International Conferences,</b> ICISP 2008, 2010, 2012, and 2014	
	<b>Reviewer for major international conferences and journals of the field,</b> See publons profile at <a href="https://publons.com/author/786085/olivier-lezoray">https://publons.com/author/786085/olivier-lezoray</a>	
2010-	<b>IEEE Multimedia Communications Technical Committee (MMTC) Member</b>	
2008-2016	<b>EURASIP Local Liaison Officer</b>	

# Editorial activities

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## Associate Editor

IEEE TRANSACTIONS ON SIGNAL PROCESSING *2016-*

## Associate Editor

IET IMAGE PROCESSING *2013-*

## Guest Editor of special issues in international journals

JOURNAL OF ELECTRONIC IMAGING (2017), SIGNAL IMAGE AND VIDEO PROCESSING (2016), COMPUTERIZED MEDICAL IMAGING AND GRAPHICS (2011), SIGNAL PROCESSING (2010), EURASIP JOURNAL ON ADVANCES IN SIGNAL PROCESSING (2008)

## Editor of Proceedings

ICISP 2008, 2010, 2012, 2014 PROCEEDINGS - LNCS VOLUMES NUMBER 8509, 7340, 6134, 5099

## Editor of the book on "Image Processing and Analysis with Graphs: Theory and Practice"

PUBLISHER: CRC PRESS / TAYLOR AND FRANCIS, SERIES: DIGITAL IMAGING AND COMPUTER VISION *2012*

# Visiting Positions

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## Brown University

VISITING SCIENTIST, INSTITUTE FOR COMPUTATIONAL AND EXPERIMENTAL RESEARCH IN MATHEMATICS *Providence, USA*  
*Apr 29 - May 3, 2019*

- Workshop "Optimization Methods in Computer Vision and Image Processing" of the semester program on "Computer Vision"

## Brown University

VISITING SCIENTIST, INSTITUTE FOR COMPUTATIONAL AND EXPERIMENTAL RESEARCH IN MATHEMATICS *Providence, USA*  
*February 10-15, 2014*

- Workshop "Semidefinite Programming and Graph Algorithms" of the semester program on "Network Science and Graph Algorithms"

## Universities of Oslo and Bergen

VISITING RESEARCH FELLOW (ASGARD PROGRAM OF THE FRENCH EMBASSY) *Norway*  
*September 23-29, 2012*

## University of Alicante

VISITING PROFESSOR (ERASMUS FACULTY EXCHANGE PROGRAM)

Alicante, Spain

April 14-21, 2012

## University of Sydney

VISITING RESEARCH FELLOW

Sydney, Australia

July, 2008

## Honors & Awards

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### NATIONAL

- 2013 **Best paper award**, Conference COmpression et REprésentation des Signaux Audiovisuels Le Creusot, France  
2006- **Premium for distinguished research activity**, Ministry of Education France

### INTERNATIONAL

- 2017 **IEEE Senior Member**, Elevation to the grade of USA  
2016 **Sentinel of Science Award**, Recognized as one of the top 10% of researchers contributing to the peer review of the field of Computer Science USA  
2014 **Best paper Award finalist**, IEEE International Conference on Image Processing, for the paper "Graph signal decomposition for multi-scale detail manipulation" authored by M. Hidane, O. Lézoray, A. Elmoataz, Paris, France  
2013 **Laureate of the Asgard Research Fellowship**, French-Norwegian Foundation for scientific and technical research and industrial development Oslo, Norway  
2008 **IBM Best student paper award**, IEEE International Conference on Image Processing, for the paper "Partial difference equations on graphs for mathematical morphology operators over images and manifolds" authored by V.-T. Ta, A. Elmoataz, O. Lézoray San Diego, USA

## Research grants

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### NORMANDY REGIONAL COUNCIL

- 2016-2018 **Graph Signal Processing for 3D colored Point Clouds**. Total award: 215593€, Role: Principal Investigator France  
2013-2015 **Software optimization of gynecological cytology**. Total award: 139580€, Role: Co-Investigator France  
2010-2012 **Automated cellular Sorting validation in tumoral cytopathology**. Total award: 270000€, Role: Co-Investigator France  
2007-2008 **Cytological Image Analysis software**. Total award: 120000€, Role: Principal Investigator France  
2005-2006 **Passport photographs on mobile devices**. Total award: 4000€, Role: Principal Investigator France

### FRENCH NATIONAL RESEARCH AGENCY

- 2018-2020 **HomeKeeper - A smart and vocal home assistant to distribute goods & services and ensure its end-to-end realization** Total award: 3M€, Role: participant France  
2015-2018 **Graph Signal Processing**. Total award: 498509€, Role: Principal Investigator France  
2011-2015 **Compact professional stereoscopic camera for 3D Shooting in television and cinema**. Role: Participant France  
2011-2014 **Innovative solution for screening and monitoring in vivo cancer skin, standardized for general practitioners and specialists**. Total award: 1860487€, Role: Co-Investigator France  
2007-2010 **Mining large microscopic breast whole slide images**. Total award: 286000€, Role: Principal Investigator France

### INTERNATIONAL

- 2019-2021 **dermato.ai - a Hubert Curien Tassili Project** Total award: 46000€, Role: Principal Investigator Algeria-France  
2017-2018 **Nvidia Academic Hardware Grant scheme: Editing of 3D colored meshes** Total award: a Nvidia GPU Titan Graphic Card, Role: Principal Investigator USA

## Teaching experience

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### Bachelor of Science Level

Saint-Lô, France

MULTIMEDIA AND INTERNET DEPARTMENT, CHERBOURG INSTITUTE OF TECHNOLOGY, UNIVERSITY OF CAEN NORMANDY

Office Tools (2000-2009), Databases (2000-2009), Image Processing (2003-), Operating Systems (2000-2015), Algorithms and Data Structures (2000-), Web front and back end development (2002-), Web Design (2000-2001), Object Oriented Programming (2015-), Mobile Android Programming (2016-)

### Master of Science Level

Caen, France

COMPUTER SCIENCE DEPARTEMENT, UNIVERSITY OF CAEN NORMANDY

2003-

Machine Learning and Neural Networks

PUBLICATIONS (available at <a href="https://lezoray.users.greyc.fr/publicationsList.php">https://lezoray.users.greyc.fr/publicationsList.php</a> )	NUMBER
<b>Books</b>	<b>2</b>
<b>Edited Proceedings and Special issues</b>	<b>9</b>
<b>Book Chapters</b>	<b>11</b>
<b>International Journals</b>	<b>41</b>
<b>International Conferences</b>	<b>108</b>
<b>Software Licences</b>	<b>4</b>

## Books

- [1] O. Lézoray and L. Grady. *Image Processing and Analysis with Graphs: Theory and Practice*. Digital Imaging and Computer Vision. CRC Press / Taylor and Francis, 2012.

## Articles in international journals

- [2] O. Lezoray, A. Elmoataz, H. Cardot, G. Gougeon, M. Lecluse, H. Elie, and M. Revenu. Segmentation of cytological images using color and mathematical morphology. *Acta Stereologica*, 18(1):1–14, 1999. Selected papers of the 7th European Congress of Stereology.
- [3] O. Lezoray, A. Elmoataz, H. Cardot, and M. Revenu. Segmentation of color images from serous cytology for an automatic cellular classification. *Analytical and quantitative cytology and histology*, 22(4):311–323, 2000.
- [4] O. Lezoray and H. Cardot. A neural network architecture for data classification. *International Journal of Neural Systems*, 11(1):33–42, 2001.
- [5] O. Lezoray and H. Cardot. Cooperation of color pixel classification schemes and color watershed : a study for microscopical images. *IEEE transactions on Image Processing*, 11(7):783–789, 2002.
- [6] O. Lezoray. Supervised automatic histogram clustering and watershed segmentation. application to microscopic medical images. *Image Analysis and Stereology*, 22:113–120, 2003.
- [7] O. Lezoray, A. Elmoataz, and H. Cardot. A color object recognition scheme: application to cellular sorting. *Machine Vision and Applications*, 14:166–171, 2003.
- [8] C. Meurie, G. Lebrun, O. Lezoray, and A. Elmoataz. A comparison of supervised pixels-based color image segmentation methods. application in cancerology. *WSEAS Transactions on Computers*, 2(3):739–744, jul 2003. ISSN 1109-2750.
- [9] O. Lezoray, D. Fournier, and H. Cardot. Neural network induction graph for pattern recognition. *Neurocomputing*, 57:257–274, 2004.
- [10] C. Meurie, O. Lezoray, C. Charrier, and A. Elmoataz. Combination of multiple pixel classifiers for microscopic image segmentation. *IJRA (IASTED International Journal of Robotics and Automation)*, 20(2):63–69, 2005. Special issue on Colour Image Processing and Analysis for Machine Vision, ISSN 0826-8185.
- [11] C. Charrier, G. Lebrun, and O. Lezoray. Evidential segmentation of microscopic color images with pixel classification posterior probabilities. *Journal of Multimedia*, 2(3):57–65, 2007.
- [12] G. Lebrun, C. Charrier, O. Lezoray, and H. Cardot. A fast and efficient segmentation scheme for cell microscopic image. *Cellular and Molecular Biology*, 53, Biomedical Signal and Image Processing Series(2):51–61, 2007.
- [13] O. Lezoray, A. Elmoataz, and S. Bougleux. Graph regularization for color image processing. *Computer Vision and Image Understanding (CVIU)*, 107(1-2):38–55, 2007.
- [14] O. Lezoray and M. Lecluse. Automatic segmentation and classification of cells from broncho alveolar lavage. *Image Analysis and Stereology*, 26:111–119, 2007.
- [15] A. Elmoataz, O. Lezoray, and S. Bougleux. Nonlocal discrete p-laplacian driven image and manifold processing. *Comptes Rendus de l'Académie des Sciences - Mécanique*, 336(5):428–433, 2008.
- [16] A. Elmoataz, O. Lezoray, and S. Bougleux. Nonlocal discrete regularization on weighted graphs: a framework for image and manifold processing. *IEEE transactions on Image Processing*, 17(7):1047–1060, 2008.
- [17] G. Lebrun, C. Charrier, O. Lezoray, and H. Cardot. Tabu search model selection for SVM. *International Journal of Neural Systems*, 18(1):19–31, 2008.
- [18] O. Lezoray and H. Cardot. Comparing combination rules of pairwise neural networks classifiers. *Neural Processing Letters*, 27(1):43–56, 2008.
- [19] O. Lezoray, C. Meurie, and A. Elmoataz. Graph-based ordering scheme for color image filtering. *International Journal of Image and Graphics*, 8(3):473–493, July 2008.
- [20] O. Lezoray and C. Charrier. Color image segmentation using morphological clustering and fusion with automatic scale selection. *Pattern Recognition Letters*, 30(4):397–406, 2009.
- [21] V.-T. Ta, O. Lezoray, A. Elmoataz, and S. Schupp. Graph-based tools for microscopic cellular image segmentation. *Pattern Recognition Special Issue on Digital Image Processing and Pattern Recognition Techniques for the Detection of Cancer*, 42(6):1113–1125, 2009.
- [22] D.-N. Truong Cong, L. Khoudour, C. Achard, C. Meurie, and O. Lezoray. People re-identification by spectral classification of silhouettes. *Signal Processing*, 90(8):2362–2374, 2010.
- [23] O. Lezoray, V.-T. Ta, and A. Elmoataz. Partial differences as tools for filtering data on graphs. *Pattern Recognition Letters*, 31(14):2201–2213, 2010.

- [24] B. Meftah, O. Lézoray, and A. Benyettou. Segmentation and edge detection based on spiking neural network model. *Neural Processing Letters*, 32(2):131–146, 2010.
- [25] C. Meurie, O. Lezoray, L. Khoudour, and A. Elmoataz. Morphological hierarchical segmentation and color spaces. *International Journal of Imaging Systems and Technology*, 20(2):167–178, 2010.
- [26] V. Roullier, O. Lézoray, V.-T. Ta, and A. Elmoataz. Multi-resolution graph-based analysis of histopathological whole slide images: application to mitotic cell extraction and visualization. *Computerized Medical Imaging and Graphics*, 35:603–615, 2011.
- [27] V.-T. Ta, A. Elmoataz, and O. Lézoray. Nonlocal pdes-based morphology on weighted graphs for image and data processing. *IEEE transactions on Image Processing*, 20(6):1504–1516, June 2011.
- [28] C. Charrier, O. Lézoray, and G. Lebrun. Machine learning to design full-reference image quality assessment algorithm. *Signal Processing: Image Communication*, 27(3):209–219, 2012.
- [29] A. Elmoataz, X. Desquesnes, and O. Lézoray. Non-local morphological pdes and p-laplacian equation on graphs with applications in image processing and machine learning. *IEEE Journal of Selected Topics in Signal Processing*, 6(7):764–779, 2012.
- [30] X. Desquesnes, A. Elmoataz, and O. Lézoray. Eikonal equation adaptation on weighted graphs: fast geometric diffusion process for local and non-local image and data processing. *Journal of Mathematical Imaging and Vision*, 46(2):238–257, 2013.
- [31] M. Hidane, O. Lézoray, and A. Elmoataz. Nonlinear multilayered representation of graph-signals. *Journal of Mathematical Imaging and Vision*, 45(2):114–137, 2013.
- [32] A. Elmoataz, X. Desquesnes, Z. Lakhdari, and O. Lézoray. Nonlocal infinity laplacian equation on graphs with applications in image processing and machine learning. *Mathematics and Computers in Simulation*, 102:153–163, 2014.
- [33] F. Lozes, A. Elmoataz, and O. Lézoray. Partial difference operators on weighted graphs for image processing on surfaces and point clouds. *IEEE transactions on Image Processing*, 23(9):3896 – 3909, 2014.
- [34] P. Buysens, M. Daisy, D. Tschumperlé, and O. Lézoray. Exemplar-based inpainting: Technical review and new heuristics for better geometric reconstructions. *IEEE transactions on Image Processing*, 24(6):1809–1824, 2015.
- [35] F. Lozes, A. Elmoataz, and O. Lézoray. Pde-based graph signal processing for 3d color point clouds: Opportunities for cultural heritage. *IEEE Signal Processing Magazine*, 32(4):103–111, 2015.
- [36] A. Nouri, C. Charrier, and O. Lézoray. Multi-scale mesh saliency with local adaptive patches for viewpoint selection. *Signal Processing: Image Communication*, 38:151–166, 2015.
- [37] O. Lézoray. Complete lattice learning for multivariate mathematical morphology. *Journal of Visual Communication and Image Representation*, 35:220–235, 2016.
- [38] B. Meftah, O. Lézoray, and A. Benyettou. Novel approach using echo state networks for microscopic cellular image segmentation. *Cognitive Computation*, 8(2):237–245, 2016.
- [39] P. Buysens, O. Le Meur, M. Daisy, D. Tschumperlé, and O. Lézoray. Depth-guided disocclusion inpainting of synthesized rgb-d images. *IEEE Transactions on Image Processing*, 26(2):525–538, 2017.
- [40] C. Coniglio, C. Meurie, O. Lézoray, and M. Berbineau. People silhouette extraction from people detection bounding boxes in images. *Pattern Recognition Letters*, 93:182–191, 2017.
- [41] H. Yedjour, B. Meftah, O. Lézoray, and A. Benyettou. Edge detection based on hodgkin-huxley neuron model simulation. *Cognitive Processing*, 18(3):315–323, 2017.
- [42] C. Meurie, O. Lézoray, C. Coniglio, and M. Berbineau. Graph-based people segmentation using a genetically optimized combination of classifiers. *Journal of Electronic Imaging*, 27(5):16–47, 2018.

#### Papers in refereed international conferences

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- [43] O. Lezoray, A. Elmoataz, H. Cardot, G. Gougeon, M. Lecluse, H. Elie, and M. Revenu. Segmentation of cytological images using color and mathematical morphology. In *Abstract Book of the 7th European Congress of Stereology*, page 52, 1998.
- [44] O. Lezoray, A. Elmoataz, H. Cardot, and M. Revenu. A.R.C.T.I.C : Un système de tri cellulaire par analyse d’images. In *Vision Interface*, pages 312–319, 1999.
- [45] O. Lezoray, H. Cardot, D. Fournier, and M. Revenu. MONNA : a Multiple Ordinate Neural Network Architecture. In *EIS (Engineering of Intelligent Systems)*, pages 47–53, 2000.
- [46] O. Lezoray, A. Elmoataz, H. Cardot, and M. Revenu. A color morphological segmentation. In *CGIP (Color in Graphics and Image Processing)*, pages 170–175, 2000.
- [47] O. Lezoray, A. Elmoataz, and H. Cardot. Automatic cellular recognition in serous cytology. In *Abstract Book of the 7th ESACP, Analytical and Cellular Pathology*, volume 22, page 70, 2001.
- [48] O. Lezoray, M. Lecluse, and H. Elie. Study of the texture of cells in serous cytology by image analysis. In *Abstract Book of the 7th ESACP, Analytical and Cellular Pathology*, volume 22, page 74, 2001.
- [49] J. Thuillier, B. Plancoulaine, O. Lezoray, P. Herlin, and D. Bloyet. Building of a microscopical acquisition device dedicated to clinical oncology. In *Abstract Book of the 7th ESACP, Analytical and Cellular Pathology*, volume 22, page 77, 2001.
- [50] H. Cardot and O. Lezoray. Graph of neural networks for pattern recognition. In *International Conference on Pattern Recognition (ICPR)*, volume 2, pages 873–876, Août 2002.
- [51] O. Lezoray and H. Cardot. Bayesian marker extraction for color watershed in segmenting microscopic images. In *International Conference on Pattern Recognition (ICPR)*, volume 1, pages 739–742, Août 2002.

- [52] O. Lezoray and H. Cardot. Histogram and watershed based segmentation of color images. In *CGIV (Color in Graphics, Imaging and Vision)*, pages 358–362, Avril 2002.
- [53] C. Charrier and O. Lezoray. Influence of JPEG2000 standard compression on color image segmentation quality. In *International Conference on Image and Signal Processing (IAPR)*, volume 2, pages 389–396, juin 2003.
- [54] O. Lezoray. Unsupervised 2d multiband histogram clustering and region merging for color image segmentation. In *International Symposium on Signal Processing and Information Technology (IEEE)*, pages 267–270, 2003.
- [55] O. Lezoray and H. Cardot. Hybrid color image segmentation using 2D histogram clustering and region merging. In *International Conference on Image and Signal Processing (IAPR)*, volume 1, pages 22–29, juin 2003.
- [56] O. Lezoray and A. Elmoataz. Graph based smoothing and segmentation of color images. In *International Symposium on Signal Processing and its Applications (IEEE)*, volume 1, pages 22–29, 2003.
- [57] C. Meurie, G. Lebrun, O. Lezoray, and A. Elmoataz. A comparison of supervised pixels-based color image segmentation methods. application in cancerology. In *SSIP (WSEAS International Conference On Signal, Speech and Image Processing)*, pages 463–468, 2003.
- [58] C. Meurie, G. Lebrun, O. Lezoray, and A. Elmoataz. A supervised segmentation scheme for cancerology color images. In *International Symposium on Signal Processing and Information Technology (IEEE)*, pages 664–667, 2003.
- [59] C. Meurie, O. Lezoray, H. Cardot, and A. Elmoataz. Comparaison de classifieurs non-supervisés pour la segmentation d’images couleur : Application en imagerie biomédicale. In *International Conference on Image and Signal Processing (IAPR)*, volume 1, pages 30–37, juin 2003.
- [60] O. Lezoray. An unsupervised color image segmentation based on morphological 2D clustering and fusion. In *CGIV (Color in Graphics, Imaging and Vision)*, pages 173–177, 2004.
- [61] C. Meurie, O. Lezoray, and A. Elmoataz. Multiple pixel classifier combination for bronchial tumors image segmentation. In *CSIMTA (International Conference on Complex Systems Intelligence and Modern Technological Applications)*, volume 1, pages 305–310, 2004. special session on Color Image Processing and Analysis for Machine Vision.
- [62] G. Lebrun, C. Charrier, O. Lezoray, C. Meurie, and H. Cardot. Fast pixel classification by SVM using vector quantization, tabu search and hybrid color space. In A. Gagalowicz and W. Philips, editors, *International Conference on Computer Analysis of Images and Patterns (IAPR)*, volume LNCS 3691 of *Computer Science*, pages 685–692. Springer, 2005. ISBN 3-540-28969-0.
- [63] G. Lebrun, C. Charrier, O. Lezoray, C. Meurie, and H. Cardot. A fast and efficient segmentation scheme for cell microscopic image. In *World Congress of Cellular and Molecular Biology*, pages 35–36, 2005.
- [64] O. Lezoray and H. Cardot. Combining multiple pairwise neural networks classifiers: A comparative study. In *ANNIIP (International Workshop on Artificial Neural Networks and Intelligent Information Processing)*, pages 52–61, 2005.
- [65] O. Lezoray, C. Meurie, and A. Elmoataz. A graph approach to color mathematical morphology. In *International Symposium on Signal Processing and Information Technology (IEEE)*, pages 856–861, dec 2005.
- [66] C. Charrier, G. Lebrun, and O. Lezoray. Fusion of SVM-based microscopic color images through colorimetric transformation. In *International Conference on Acoustics, Speech, and Signal Processing (IEEE)*, volume 2, pages 1112–1115, 2006.
- [67] C. Charrier, G. Lebrun, and O. Lezoray. A machine learning-based color image quality metric. In *CGIV (Color in Graphics, Imaging and Vision)*, pages 251–256, 2006.
- [68] G. Lebrun, O. Lezoray, C. Charrier, and H. Cardot. A new model selection method for SVM. In *IDEAL (Intelligent Data Engineering and Automated Learning)*, volume LNCS 4424, pages 99–107, 2006.
- [69] G. Lebrun, O. Lezoray, C. Charrier, and H. Cardot. Speed-up LOO-CV with SVM classifier. In *IDEAL (Intelligent Data Engineering and Automated Learning)*, volume LNCS 4424, pages 108–115, 2006.
- [70] O. Lezoray, C. Meurie, P. Belhomme, and A. Elmoataz. Multi-scale image segmentation in a hierarchy of partitions. In *EUSIPCO (European Signal Processing Conference)*, CD Proceedings, 2006.
- [71] C. Charrier, G. Lebrun, and O. Lezoray. Selection of features by a machine learning expert to design a color image quality metric. In ISBN 09774740, editor, *Third International Workshop on Video Processing and Quality Metrics for Consumer Electronics, Scottsdale*, CD Proceedings, 2007.
- [72] G. Lebrun, O. Lezoray, C. Charrier, and H. Cardot. An EA multi-model selection for SVM multiclass schemes. In *International Work Conference on Artificial Neural Networks (IWANN), Special Session on Kernel Methods*, volume LNCS 4507, pages 257–264, 2007.
- [73] O. Lezoray, S. Bougleux, and A. Elmoataz. Parameterless discrete regularization on graphs for color image filtering. In *ICIAR (International Conference on Image Analysis and Recognition)*, volume LNCS 4633, pages 46–57, 2007.
- [74] O. Lezoray, C. Meurie, and A. Elmoataz. Mathematical morphology in any color space. In *(IEEE and IAPR) International Conference on Image Analysis and Processing, Computational Color Imaging Workshop*, pages 183–187. IEEE, 2007.
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