Guillaume Lemaitre

ViCOROB-LE2I

Homepage:
https://glemaitre.github.io
https://github.com/glemaitre
https://scholar.google.com/citations?user=fmnnGf4AAAAJ&hl=en

Education

2012–2015	**Co-joint PhD Candidate**, *Universitat de Girona, Université de Bourgogne*, Girona (Spain), Le Creusot (France).
Title	*Computer Aided Diagnosis system for prostatic biopsy guidance and follow-up fusing multi-modal imaging*
Description	A set of machine learning and pattern recognition tools are developed to be integrated in computer-aided diagnosis (CAD) systems to detect prostate cancers. Particularly, the main objective is to fuse multi-parametric MRI information to obtain probability maps.
2012–2014	**Master in Business Innovation and Technology Management (BITM)**, *Universitat de Girona*, Girona (Spain).
Title	*Valorisation of computerized technology in the health care sector*
Description	The ultimate aim of this thesis is to provide a decision making framework in order to elaborate some innovative business models so as to valorise specific research carried out in universities.
2009–2011	**Master of Excellence Erasmus Mundus in Vision and Robotics (ViBOT)**, *Heriot-Watt University, Universitat de Girona, Université de Bourgogne*, Edinburgh (Scotland), Girona (Spain), Le Creusot (France). - **2:1 Class Honour (Mention Bien) - ranked 17th**
—	Master Thesis Université de Bourgogne Dijon (France)
Title	*Absolute Quantification in 1H MRSI of the Prostate at 3T*
Description	Implementation of a method to find absolute concentration of metabolites which will lead to an automatic classification for prostate cancer detection. - **Presentation selected for the ViBOT Day 2011**
2008–2009	**Bachelor of Engineering - Mention Electronic, Signal and Image**, *Université de Bourgogne*, Dijon (France). - **1st Class Honour (Mention Très Bien) - ranked 1st**
2006–2008	**Technical Qualifications (D.U.T) - Department Electronic, Electrical and Computer Sciences**, *Université de Bourgogne*, Le Creusot (France). - **1st Class Honour with Congatulation of Jury (Mention Très Bien) - ranked 2nd**
—	D.U.T Thesis Heriot-Watt University Edinburgh (Scotland)
Title	*Object Recognition dedicated at the Localization of an AUV (Autonomous Underwater Vehicle) for Student Autonomous Underwater Competition - Europe (SAUC-E 2008) - Winner of the competition*

Description	Detection and Recognition of different objects. The implementation had to be real-time to be implemented inside an AUV.
2005–2006	**Scientific Baccalaureate**, *Maurice Genevoix High School*, Decize (France). - **Main Subjects**: Mathematics, Chemistry, Physics, Geography, History, French - **2:2 Class Honour (Mention Assez Bien)**

Publications

International Journals

G. Lemaitre, M. Rastgoo, J. Massich, C. Y. Cheung, T. Y. Wong, E. Lamoureux, D. Milea, F. Meriaudeau, and D. Sidibe, "Classification of SD-OCT Volumes using Local Binary Patterns: Experimental Validation for DME detection", *Journal of Ophthalmology*, vol. 2016, pp —, Mai 2016.

M. Belkacemi, C. Stolz, A. Mathieu, G. Lemaitre, J. Massich, and O. Aubreton, "Non Destructive Testing based on a Scanning-From-Heating approach: Application to non-through Defect Detection and Fiber Orientation Assessment", *Journal of Eletronic Imaging*, vol. 24(6), pp 1-8, Nov/Dec 2015.

G. Lemaitre, R. Marti, J. Freixenet, J. C. Vilanova, P. M. Walker, and F. Meriaudeau, "Computer-Aided Detection and Diagnosis for prostate cancer based on mono and multi-parametric MRI: A Review", *Computer in Biology and Medicine*, vol. 60, pp 8 - 31, 2015.

International Conferences

J. Massich, M. Rastgoo, G. Lemaitre, C. Cheung, T. Y. Wong, D. Sidibe, and F. Meriaudeau, "Classifying DME vs normal SD-OCT volumes: A review", *23rd International Conference on Pattern Recognition (ICPR) 2016*. Cancun: Mexico (December 2016).

K. Alsaih, G. Lemaitre, J. Massich, M. Rastgoo, D. Sidibe, T. Y. Wong, E. Lamoureux, D. Milea, C. Leung and, F. Meriaudeau, "Classification of SD-OCT volumes with multi-pyramids, LBP and HoG descriptors: Application to DME detection", *38th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2016*. Orlando: USA (August 2016).

A. Pampouchidou, K. Marias, M. Tsiknakis, P. Simos, F. Yang, G. Lemaitre, and F. Meriaudeau, "Video-based depression detection using local curvelet binary patterns in pairwise orthogonal planes", *38th International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) 2016*. Orlando: USA (August 2016).

S. Hoffmann, M. Lobbes, I. Houben, K. Pinker-Domenig, G. Wengert, B. Burgeth, U. Meyer-Bäse, G. Lemaitre, and A. Meyer-Baese, "Computer-aided diagnosis of diagnostically challenging lesions in breast MRI: a comparison between a radiomics and a feature-selective approach", *SPIE Commercial+ Scientific Sensing and Imaging*. Baltimore: USA (July 2016).

M. Belkacemi, C. Stolz, A. Mathieu, G. Lemaitre, and O. Aubreton, "A combined three-dimensional digitisation and subsurface defect detection data using active infrared thermography", *13th Quantitative Infrared Thermography Conference (QIRT)*. Gdansk: Poland (July 2016).

M. Belkacemi, J. Massich, G. Lemaitre, C. Stolz, V. Daval, G. Pot, O. Aubreton, R. Collet, and F. Meriaudeau, "Wood fiber orientation assessment based on punctual laser beam excitation: A preliminary study", *13th Quantitative Infrared Thermography Conference (QIRT)*. Gdansk: Poland (July 2016).

M. Rastgoo, G. Lemaitre, J. Massich, O. Morel, F. Marzani, R. Garcia, and F. Meriaudeau, "Study of Data Imbalancing for Melanoma Classification", *3rd International Conference on BIOIMAGING*. Rome: Italy (February 2016).

G. Lemaitre, M. Rastgoo, J. Massich, J. C. Vilanova, P. M. Walker, J. Freixenet, A. Meyer-Baese, F. Meriaudeau, and R. Marti, "Normalization of T2W-MRI prostate images using Rician a priori", *SPIE Medical Imaging 2016*. San Diego: USA (February 2016).

M. Rastgoo, G. Lemaitre, O. Morel, J. Massich, F. Marzani, R. Garcia, and D. Sidibe, "Classification of melanoma lesions using sparse coded features and random forests", *SPIE Medical Imaging 2016*. San Diego: USA (February 2016).

A. Meyer-Baese, J. Massich, G. Lemaitre, and M. Rastgoo, "Real-Time Optical Flow with Theoretically Justified Warping Applied to Medical Imaging", *Breast Image Analysis Workshop (BIA), Medical Image Computing and Computer Assisted Interventions (MICCAI) 2015*. Munich: Germany (October 2015).

J. Massich, G. Lemaitre, J. Marti, and F. Meriaudeau, "An Optimization Approach to Segment Breast Lesions in Ultra-Sound Images using Clinically Validated Visual Cues", *Breast Image Analysis Workshop (BIA), Medical Image Computing and Computer Assisted Interventions (MICCAI) 2015*. Munich: Germany (October 2015).

G. Lemaitre, M. Rastgoo, J. Massich, S. Sankar, F. Meriaudeau, and D. Sidibe, "Classification of SD-OCT volumes with LBP: Application to DME detection", *Ophthalmic Medical Image Analysis Workshop (OMIA), Medical Image Computing and Computer Assisted Interventions (MICCAI) 2015*. Munich: Germany (October 2015).

J. Massich, G. Lemaitre, J. Marti, and F. Meriaudeau, "Brest Ultra-Sound image Segmentation: an Optimization approach based on super-pixels and high-level descriptors", *International Conference on Quality Control and Artificial Vision (QCAV) 2015*. Le Creusot: France (June 2015).

G. Lemaitre, J. Massich, R. Marti, J. Freixenet, J. C. Vilanova, P. M. Walker, D. Sidibe, and F. Meriaudeau, "A Boosting Approach for Prostate Cancer Detection using Multi-parametric MRI", *International Conference on Quality Control and Artificial Vision (QCAV) 2015*. Le Creusot: France (June 2015).

G. Lemaitre, A. Bikfalvi, J. Llach, J. Massich, and F. Julian, "Business Model Design for University Technology Valorisation", *International Technology, Education and Development Conference (INTED) 2015*. Madrid: Spain (March 2015).

M. Rastgoo, G. Lemaitre, X. Rafael, F. Miralles, and P. Casale, "Pruning AdaBoost for Continuous Sensors Mining Applications", *Ubiquitous Data Mining Workshop, 20th European Conference in Artificial Intelligence 2012*. Montpellier: France (August 2012).

G. Lemaitre, E. Vargiu, J.A. Lorenzo Fernández, and F. Miralles, "Real-Time 2D Face Detection and Features-based Tracking in Video", *IADIS Multi Conference in Computer Science in Computer Graphics, Visualization, Computer Vision and Image Processing 2012*. Lisbon: Portugal (July 2012).

Technical Reports

J. Cartwright, N. Johnson, B. Davis, Z. Qiang, T.L. Bravo, A. Enoch, G. Lemaitre, H. Roth, and Y. Petillot, "Nessie III Autonomous Underwater Vehicle for SAUC-E 2008", *The Unmanned Underwater Vehicle Showcase (UUVS)*, 2008.

G. Lemaitre and P.M. Walker, "Absolute Quantification in 1H MRSI of the Prostate at 3T", *Université de Bourgogne, Universitat de Girona, Heriot-Watt University*, 2011.

Academic Background

Image Processing	Segmentation, Classification, Features extraction, Edges detection, Medical Imaging, Wavelets, Denoising, Morphological Operations, Super resolution, Sparsity
Signal Processing	Digital Signal Processing, Laplace Transform, z Transform, Fourier Transform, Wavelet Transform

Electronic	Filtering, FPGA
Electronical	Power Electrical, Engine electric, Alternators

Scholarships

2012	**OMJ Grant**, French Ministry of Foreign and European affairs, France.
2012	**FI-DGR PhD Grant**, Generalitat de Catalunya - AGAUR, Spain.
2011	**Research Master Scholarship**, Burgundy Region, France.
2010	**Erasmus Spanish Scholarship**, Spanish Ministry, Spain.
2010	**Merit-based Scholarship**, French Ministry, France.
2010	**Merit-based Scholarship dedicated to Research Masters**, Burgundy Region, France.
2009	**Spanish Ministry Mobility Scholarship**, Spanish Ministry, Spain.
2009	**Merit-based Scholarship**, French Ministry, France.
2009	**Erasmus French Scholarship**, French Ministry, France.
2009	**Mobility Grant**, Burgundy Region, France.
2009	**Region Mobility Scholarship**, Burgundy Region, France.
2009	**Rotary Scholarship**, Rotary Club Le Creusot, France.
2009-2011	**Erasmus Mundus Grant**, Heriot-Watt University, Universitat de Girona, Université de Bourgogne, Scotland, Spain, France.
2008	**Erasmus French Scholarship**, French Ministry, France.
2008	**Mobility Grant**, Burgundy Region, France.

Undergraduate Contest Awards

July, 2008	**Student Autonomous Underwater Competition - Europe**, *Nessie III - Heriot-Watt University*. - Creation of an AUV - Nessie III - Webpage: http://www.dstl.gov.uk/news_events/competitions/sauce/08/index.php
July, 2008	**THALES Special Award for innovation**, *Nessie III - Heriot-Watt University*. - Webpage: http://www.dstl.gov.uk/news_events/competitions/sauce/08/index.php

Experience

Working

2015	**Attache Temporaire d'Enseignement et Recherche (ATER)**, *Section 61*, IUT Le Creusot - Laboratory LE2I - Le Creusot (France). - 92 hours of lectures in: - Signal processing through Python programming. - Introduction to image processing. - Software engineering.
2014-2015	**Actor in European Project "Playful Coding"**, *Erasmus+*, IUT Le Creusot - Laboratory LE2I - Le Creusot (France).
2014-2015	**Attache Temporaire d'Enseignement et Recherche (ATER)**, *Section 61*, IUT Le Creusot - Laboratory LE2I - Le Creusot (France). - 92 hours of lectures in: - Signal processing through Python programming. - Introduction to database through Microsoft Access 2007. - Pattern recognition and machine learning through IPython notebook.
2014-2015	**Course Instructor**, *Medical Image Analysis*, Universitat de Girona - Girona - (Spain). - Registration using ITK. - Segmentation using MevisLab.

2011-2012 **Short-Time Research Job**, *Content Based Classification and Retrieval*, Barcelona Digital - Barcelona (Spain) / Laboratory LE2I - Le Creusot (France).
  - Externs reseacher working on Rehabilita Project (http://rehabilita.gmv.com/web/guest).
  - Implementation of a framework combining a face detection and tracking algorithm.
  - Implementation of a framework for traffic sign detection, recognition and tracking. This work involved a mobility in LE2I (France).

2010 **Internship**, *Implementation of a software dedicated at the 3D reconstruction and localization using MRI images*, Universitat de Girona - Girona (Spain).
  - Creation of a software to assist medical doctor. The purpose of the software was to present the data acquire using MRI and to perform a 3D reconstruction of the subject.

Languages

French	**Native**	
English	**Fluent**	*Master Erasmus Mundus ViBOT taught in English*
Catalan	**Notions**	

Computer skills

OS	Linux/Unix, Windows, DOS	Programming	C/C++, Python, VB.net, VHDL, HTML, CSS
Environment	Emacs, QT, VisualStudio.NET, Dev C++, Eclipse	Scientific	Matlab, Maple, OpenCV, ITK, VTK
Typography	LaTeX, Microsoft Office, Open Office	Web	Kompozer

Interests and Activities

Cycling Member of cycling team ASC Fours since October 2003:
  - Vice-president of UFOLEP since 2006.
  - President of FFC since 2009.
  - Champion of Nievre on road in 2009 and vice-champion of Nievre on road in 2006, 2007.
  - Champion of Burgundy on road in 2009 and vice-champion of Burgundy on road in 2007.
  - Champion of Burgundy on TT by team in 2009 and vice-champion of Burgundy on TT by Team in 2007.
  - 8 victories in 2009 and 74th in France National Championships.