

Guillaume Lemaitre

BDigital Technology Centre

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Education

- 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 Conferences

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).

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

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

- 2011-2012 **Short-Time Research Job**, *Content Based Classification and Retrieval*, Barcelona Digital - Barcelona (Spain) / Laboratory LE2I - Le Creusot (France).
- Externs researcher 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).
- Serve as a contractor full time during summer.
- 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.

Project

- 2011 **Master Project - 3D Digitization**, *3D Faces Tracking using Active Appearance Model (AAM)*, Université de Bourgogne - Le Creusot (France).
- Implementation of an interface allowing to track faces using Active Appearance Model (AAM).
- 2011 **Master Project - Pattern Recognition**, *Wood Crack Detection*, Université de Bourgogne - Le Creusot (France).
- Implementation of segmentation and classification methods in order to detect crack inside plank.
- 2011 **Master Project - Medical Imaging**, *Management and Post-Processing of Prostate Perfusion MRI*, Université de Bourgogne - Le Creusot (France).
- Implementation of an interface in order to compute features of perfusion imaging (Wash-in, Wash-out, Maximum contrast enhancement).
- 2010 **Master Project - Real-Time Image Processing**, *Face detection and Tracking using Viola and Jones algorithm modified*, Universitat de Girona - Girona (Spain).
- Implementation of an interface allowing to detect an track face using Viola and Jones method
- 2010 **Master Project - Scene Segmentation**, *Pascal Project*, Universitat de Girona - Girona (Spain).
- Realize task proposed inside the Pascal project - Classification.

Research

- 2011 **Absolute Quantification in 1H MRSI of the Prostate at 3T**, *Université de Bourgogne - Dijon (France)*.
- Implementation of a method to find absolute concentration of metabolites which will lead to an automatic classification for prostate cancer detection.
- 2008 **Object Recognition dedicated at the Localization of an AUV (Autonomous Underwater Vehicle) for Student Autonomous Underwater Competition - Europe (SAUC-E 2008)**, *Université de Bourgogne - Le Creusot (France) - Heriot-Watt University - Edinburgh (Scotland)*.
- Detection and Recognition of different objects. The implementation had to be real-time to be implemented inside an AUV.
- 2008 **HeartLearning**, *Université de Bourgogne - Le Creusot (France)*.
- Implementation of a software allowing an analysis and an interpretation of cardiometrics data for an optimisation of cycling performance.

Languages

French **Native**

English **Fluent**
Catalan **Notions**
Spanish **Notions**

Master Erasmus Mundus ViBOT taught in English

Computer skills

OS	Linux/Unix, Windows, DOS	Programming	C/C++, VB.net, VHDL, HTML, CSS
Environment	VisualStudio.NET, QT, Dev C++, Eclipse	Scientific	Matlab, Maple, OpenCV, ITK, VTK
Typography	L ^A T _E X, 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 Nièvre on road in 2009 and vice-champion of Nièvre 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.