Joan Massich

Research fellow

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Born 15 March 1984

This is how I did it Anton. I never saved anything for the swim back. (Gattaca, 1997)

Experience

Dec. 2013 — **Postdoctoral fellow**, *Le2i - Laboratorie Electronique, Informatique et Image UMR CNRS 6306 at IUT Le Creusot*, Le Creusot

Oct. 2009 – Dec. 2013 — **Research assistant**, *ViCOROB - Computer Vision and Robotics group at University of Girona*, Girona

June 2009 – Oct. 2009 — **Research assistant**, *Applied Vision Laboratory (AVL) at Texas Tech University (TTU)*, Lubbock

Dec. 2003 – June 2009 — **Research assistant**, *ViCOROB - Computer Vision and Robotics group at University of Girona*, Girona

Education

Oct. 2009 – Dec. 2013 — **PhD on Computer Vision**

Universitat de Girona, Girona, Catalonia.
Université de Bourgogne, Le Creusot, France. title: Deformable object segmentation in ultrasound images.
grade: Unanimity excellent with honors.

Sept. 2007 – June 2009 — **Erasmus Mundus Master Course on Computer Vision and Robotics (VIBOT)**

Heriot-Watt University, Edinburgh, Scothland.
Universitat de Girona, Girona, Catalonia.
Université de Bourgogne, Le Creusot, France.
Autonomous Robots, Fundamentals on Robotics, Visual Perception, Real-time Image Processing, Scene Segmentation and Interpretation, Software Engineering, Image processing, Digital Signal Processing, Data Mining and Machine Learning, Medical Imaging, Shape Recognition Statistics, Infrared Imagery, Image Analysis.
grade: 8.1 over 10

Sept. 2005 – Sept. 2007 — **Computer Science Engineering**,

Universitat de Girona, Girona, Catalonia
Software Engineering, Computer Networks, Compilers, Computer Architecture, Numeric Methods, Economy, Production Systems, Computer Vision, Statistics, User Interfaces, Security.
grade: 7.7 over 10

Sept. 2002 – Sept. 2005 — **Technical Engineering in Computer Systems**,

Universitat de Girona, Girona, Catalonia
Algorithms, Computer Architecture, Electronics, Digital Circuits, Database Systems, Computer Vision, Robotics, Software Engineering, Computer Networks, Operating Systems, Discrete Structures, Probability and Statistics, Digital Logic, Control Systems, VLSI Design, Artificial Intelligence.
grade: 6.9 over 10

PhD Thesis

title *Deformable object segmentation in ultra-sound images.*

supervisors Joan Martí and Prof. Fabrice Meriaudeau

description This thesis is devoted to automatic segmentation of breast lesions in ultrasound images, since this task is key for the development of robust Computer Aided Diagnosis (CAD) systems applied to this organ and image modality. The proposed segmentation strategy divides the images into meaningful regions called super-pixels and labels them using a minimization framework that takes into account training and regularization.

Languages

Catalan **IRL 5** *Mother tonge.*

Spanish **IRL 5**

English **IRL 4-5**

French **IRL 3-4**

Publications

Medical Image Analysis

2015 **Lemaitre, Guillaume, Joan Massich, Robert Martí, Freixenet Jordi, J.C. Vilanova, P.M. Walker, Desire Sidibe, and Fabrice Meriaudeau**, *"A Boosting Approach for Prostate Cancer Detection using Multi-parametric MRI". English. In:* Proc. International Conference on Quality Ciontrol and Artificial Vision (QCAV).

2015 **Lemaitre, Guillaume, Mojdeh Rastrgoo, Joan Massich, Desire Sidibe, and Fabrice Meriaudeau**, *"Classification of SD-OCT volumes with LBP: Application to DME detection". English. In:* Proc. MICCAI 2015 Workshop on Ophthalmic Medical Image Analysis (OMIA).

2015 **Massich, Joan, Guillaume Lemaitre, Joan Martí, and Fabrice Meriaudeau**, *"An optimization approach to segment breast lesions in ultra-sound images using clinically validated visual cues". English. In:* Proc. MICCAI 2015 Workshop on Breast Image Analysis (BIA).

2015 **Massich, Joan, Guillaume Lemaitre, Fabrice Meriaudeau, and Joan Martí**, *"Breast Ultra-Sound Image Segmentation: an Optimization approach based on super-pixels and high-level descriptors". English. In:* Proc. International Conference on Quality Ciontrol and Artificial Vision (QCAV).

2014 **Massich, Joan, Fabrice Meriaudeau, Melcior Sentís, Sergi Ganau, Elsa Pérez, Domenec Puig, Robert Martí, Arnau Oliver, and Joan Martíŋ**, *"SIFT Texture Description for Understanding Breast Ultrasound Images". English. In:* Breast Imaging. *Ed. by Hiroshi Fujita, Takeshi Hara, and Chisako Muramatsu, pp. 681–688.*

2013 **Massich, Joan**, *"Deformable object segmentation in ultra-sound images". PhD thesis. Girona (Catalunya): Universitat de Girona, Université de Bourgogne.*

2012

Massich, Joan, Fabrice Meriaudeau, Melció Santís, Sergi Ganau, Elsa Pérez, Robert Martí, Arnau Oliver, and Joan Martí, *"Automatic seed placement for breast lesion segmentation on US images". English. In: Lecture Notes in Computer Science vol. 7361. Ed. by AndrewD.A. Maidment, PredragR. Bakic, and Sara Gavenonis, pp. 308–315.*

2011

Martí, Joan, Gubern-Mérida, Joan Massich, Arnau Oliver, Joan C. Vilanova, Josep Comet, Elsa Pérez, Arzoz M, and Robert Martí, *"Ultrasound Image Analysis. Methods and Applications." In:* Recent advances in biomedical signal processing. *Ed. by Juan Manuel Górriz, Elmar W Lang, and Javier Ramírez. Bentham Science Publishers, pp. 216–230.*

2011

Massich, Joan, Fabrice Meriaudeau, Elsa Pérez, Robert Martí, Arnau Oliver, and Joan Martí, *"Seed selection criteria for breast lesion segmentation in ultra-sound images". In:* Proc. MICCAI 2011 Workshop on Breast Image Analysis. *Ed. by Christine Tanner, Julia Schnabel, Nico Karssenmeijer, Mads Nielsen, Maryellen Giger, and Dawid Hawkes, pp. 57–64.*

2010

Massich, Joan, Fabrice Meriaudeau, Elsa Pérez, Robert Martí, Arnau Oliver, and Joan Martí, *"Lesion Segmentation in Breast Sonography". English. In: Lecture Notes in Computer Science vol. 6136. Ed. by Joan Martí, Arnau Oliver, Jordi Freixenet, and Robert Martí, pp. 39–45.*

Other Publications in Computer Vision and Robotics

2015

Lemaitre, Guillaume, A. Bikfalvi, J. Llach, Joan Massich, and F. Julian, *"Business Model Design for University Technology Valorisation". English. In:* Proc. International Technology, Education and Development Conference (INTED).

2009

Falcao, Gabriel, Natalia Hurtos, Joan Massich, and David Fofi, Projector-camera calibration toolbox. *Comp. software. Le2i UMR CNRS 6306 - IUT Le Creusot, France* . URL: `http://code.google.com/p/procamcalib`

2008

Falcao, Gabriel, Natalia Hurtos, and Joan Massich, Plane-based calibration of a projector-camera system. *Research rep. Le Creusot, France: Shape Recognition Statistics course (EMMc VIBOT).*

2006

Hernàndez, Emili, Pere Ridao, Marc Carreras, David Ribas, Narcís Palomeras, Andrés El-fakdi, Franćois Chung, Xavier Ribas, Guillermo García de Marina, Natalia Hurtós, Joan Massich, Antonio Almohaya, and Josep Vila, *"ICTINEU AUV, un Robot per a Competir". Catalan. In:* Artificial Intelligence Research and Development, Proceedings of the 9th International Conference of the ACIA, CCIA 2006. *Ed. by Monique Polit, Thierry Talbert, Beatriz López, and Joaquím Meléndez.*

2006

Ribas, David, Narcís Palomeras, Xavier Ribas, Guillermo García de Marina, Emili Hernández, Franćois Chung, Natalia Hurtós, Joan Massich, Antonio Almohaya, Josep Vila, and Andrés El-fakdi, ICTINEU AUV Takes the Challenge. *Research rep. Universitat de Girona Girona, Catalonia*

Education

2014

Ligusova, Jana, Nina Bencheva, Jean-Marc Thiriet, Gert Jervan, and Massich Joan, *"Reflections about the integration of global challenges into higher education future programs: application in the field of ICT security". In:* Proceedings of ITHET 2014. 13th International Conference on Information Technology Based Higher Education and Training.

2012

Cufí, Xevi, Miquel Villanueva, Andrés ElFakdi, Joan Massich, and Rafael Garcia, *"Team-based Building of a Remotely Operated Robot as a Method to Increase the Interest for Engineering among Secondary School Students". In:* Proceedings of EDULEARN 2012. 4th International Conference on Education and New Learning Technologies.

2011

Villanueva, Miquel, Xevi Cufí, Andrés ElFakdi, Joan Massich, and Rafael Garcia, *"Attracting talent to increase interest for engineering among secondary school students". In:* Global Engineering Education Conference (EDUCON), 2011 IEEE, *pp. 347–353.*

Awards

Aug. 2006

Member of the ViCOROB-UDG team honored as the winner of the 2006 SAUC-E (Student Autonomous Underwater Challenge Europe) competition, London