

Jean Stawiaski

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Research & Academic Experiences

- 2009 **Philips HealthCare**, Medisys Research Laboratory. Research scientist in charge of the development of image denoising and segmentation algorithms.
- 2005-2008 **Ecole Nationale Supérieure des Mines de Paris**. European PhD in Applied Mathematics. Development of algorithms and GUI for interactive 3D image segmentation and visualization.
- 2006 **Marie Curie Fellowship. University of Aarhus** (Denmark). Development of segmentation algorithms for cardiac MRI used for surgery planning and simulation.
- 2005 **C.E.A Cadarache – (Atomic Energy Commission)**. Characterization and 2D/3D modelling of nuclear fuel. Development of algorithms and GUI for the simulation of random models and automatic characterization of nuclear fuel.
- 2004 **Centre de Recherche et d'Etude Européen. Saint-Gobain**. Automatic characterization of sintered ceramics by image analysis.

Education

- 2005-2008 **Ecole Nationale Supérieure des Mines de Paris**. European PhD in Applied Mathematics. Dissertation title: Mathematical morphology and Graphs: Application to Interactive Medical Image Segmentation. Advisors: Prof. Dominique Jeulin, Etienne Decencièrè.
- 2004-2005 **University of Saint-Etienne**. MSc in Applied Mathematics, « Optic, Image, Vision ».
- 2002-2005 **Ecole Supérieure de Chimie, Physique et Electronique de Lyon**. Master Degree, Engineer. Electronics, Telecommunication and Computer Science.
- 2000-2002 **Institution des Chartreux**. Intensive Mathematics - Physics – Chemistry.

Skills

- Sciences Medical imaging, image segmentation and filtering, combinatorial optimization, random models and stochastic geometry.
- Programming C/C++ under Microsoft and Linux environments, cross-platform programming. Matlab, Python, Java.
- Languages Native French, Fluent English (Cambridge ESOL, First Certificate in English), German.

Publications and Conferences

2009

- (1) J. Stawiaski, F. Meyer. **Minimum spanning tree adaptive image filtering**. ICIP'09 Special Session on "Adaptive Morphology".
- (2) F. Meyer, J. Stawiaski. **Morphology on graphs and minimum spanning trees**. The 9th International Symposium on Mathematical Morphology.

2008

- (3) J. Stawiaski, E. Decencière, and F. Bidault, **Interactive liver tumor segmentation using graph cuts and watershed**, Workshop on 3D Segmentation in the Clinic: A Grand Challenge II. Liver Tumor Segmentation Challenge. MICCAI, New York, USA. (2008). **WINNER OF THE CHALLENGE !**. <http://hdl.handle.net/10380/1416>
- (4) J. Stawiaski, E. Decencière, F. Bidault. **Spatio-temporal segmentation for radiotherapy planning**. Proceedings of ECMI 2008. To appear.
- (5) J. Stawiaski, E. Decencière. **Combining graph-cuts and morphological segmentation**. Image Analysis and Stereology, vol 27, 39-45. 2008.

2007

- (6) J. Stawiaski, J. Mosegaard, and T.S. Sørensen, **Virtual open heart surgery: Segmentation**. Proceedings of Medicine Meets Virtual Reality 15. Stud Health Technol Inform. 125:448-50 (2007).
- (7) T.S. Sørensen, J. Stawiaski, and J. Mosegaard, **Virtual open heart surgery: Obtaining models suitable for surgical simulation**. Proceedings of Medicine Meets Virtual Reality 15. Stud Health Technol Inform. 2007;125:445-7 (2007).
- (8) J. Stawiaski, E. Decencière. **Region Merging via Graph-Cuts**. ICS XII - 2007: International Congress of the International Society of Stereology, Saint-Etienne, France.
- (9) J. Stawiaski and E. Decencière, **Computing approximate geodesics and minimal surfaces using watershed and graph-cuts**. Proceedings of the The 8th International Symposium on Mathematical Morphology, Rio de Janeiro, Brazil, 349-360. (2007)
- (10) J. Stawiaski, T. Sorensen, E. Decencière, F Bidault. **Combining Morphological and Graph Based Methods for Multi-Label Segmentation**. Workshop on interaction in medical image analysis and visualisation. MICCAI 2007, Brisbane, Australia.
- (11) J. Stawiaski, E. Decencière, D Jeulin. **Segmentation Semi-automatique d'Images 3D de Micro-tomographie**. Journées Annuelles de la Société Française de Métallurgie et de Matériaux 2007.
- (12) J. Stawiaski, E. Decencière, D Jeulin. **3D Image Segmentation of Microstructures**. Workshop on 3D image analysis and modelling of microstructures. ITWM Fraunhofer, Kaiserslautern, Germany.

2006

- (13) P. Tylsky, G. Bonniaud, E. Decencière, J. Stawiaski, D. Lefkopoulos, M. Ricard. **FDG PET images segmentation using morphological watershed: a phantom study**. Proceedings of IEEE Nuclear Science Symposium and Medical Imaging Conference. October 2006, San Diego USA.
- (14) J. Stawiaski, F. Bidault, E. Decencière, T. Girinsky, C. Le Péchoux, I. Ferreira, F. Dhermain, F. Meyer, J. Bourhis, R. Sigal. **Segmentation interactive d'images médicales par hiérarchie de partitions, apport des marqueurs**. Journée française de Radiologie 2006, Paris La Défense.

2005

- (15) J. Stawiaski, J-M. Becker. **PROAGIL, Interactive software for learning projective geometry**. CETSIS 2005, Nancy.
- (16) J. Stawiaski, L. Aufore. **2D/3D modelling of MOX fuel**. 28^{ème} journée ISS France, 3 February 2005, Ecole des Mines de Paris.