

Vincent MARTIN

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Project-Team Pulsar
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✉ : Vincent.R.Martin@sophia.inria.fr
French, 28 years old

- Post-Doctoral Research Fellow -

Research Interests

- **Computer vision:** image segmentation, motion detection, feature extraction, scene understanding
- **Artificial intelligence:** machine learning for low level vision algorithms, data mining for knowledge extraction and discovery, optimisation techniques for parameter tuning and feature selection
- **Adaptive vision systems:** endowing vision systems with cognitive faculties when evolving in complex and changing environments

Education

- **PhD in Computer Science** from the Nice Sophia Antipolis University, France, **Dec 2007**
 - **Laboratory:** INRIA (French National Institute for Research in Computer Science and Control) project ORION, advisor: Dr. Monique Thonnat
 - **Thesis Title:** *Cognitive Vision: Supervised Learning for Image and Video Segmentation*
- **Master's degree in Astronomy and Associated Techniques** from the Nice Sophia Antipolis University, France, **2004**
- **Bachelor's degree in Physics, Information Theory and Applications** from the University of Toulouse, France, **2003**

Working Experience & Internships

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| 2008 May onwards | Post-Doctoral Fellow at CEA Cadarache / INRIA Sophia Antipolis, France <ul style="list-style-type: none">▪ This post doctoral position takes place in the <i>moniTORE</i> project (more details on http://www-sop.inria.fr/pulsar/projects/monitore/). The goal is to detect in real-time thermal events (expected or not) during tore plasma operations. Learning techniques will be used to assimilate the knowledge of events from multi-sensor data (IR and visible video cameras, physical sensors). |
| 2004 - 2007 | PhD Student at INRIA Sophia Antipolis, France <ul style="list-style-type: none">▪ During my PhD, I addressed the problem of image and video segmentation with a cognitive approach. I proposed a learning-based methodology to easily set up and continuously adapt the segmentation task in a vision system. This approach has been successfully applied to biological applications (in collaboration with INRA) and video surveillance applications. |
| 2004 | Master's internship at INRIA Sophia Antipolis, France <ul style="list-style-type: none">▪ Subject: <i>Supervised Learning for Image Segmentation</i>. The goal is to define a method for adaptive image segmentation by means of learning techniques. |

- 2003 **Bachelor's internship at the Centre for the Study of Radiation in Space (CESR/CNRS), Toulouse, France**
- Subject: *Astronomical Image Analysis for Light Curve Plotting*. The goal is to detect variable stars in noisy images by means of image subtractions. The results are used as input of a neural classifier.
- 2002-2003 **Temporary employee in a CNRS Laboratory, (CESR/CNRS), Toulouse, France**
- Task: data reduction in image sets acquired by an automatic telescope (TAROT). The goal is to develop scripts in Matlab and Tcl/Tk to automatically pre-process the image database.
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Award

- EFDA (European Fusion Development Agreement) fusion researcher fellowship, 2009
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Collaborations

- Automation and Control Institute of the Technical University of Vienna, Austria – *work on optimization techniques for parameter tuning based on segmentation evaluation profiles* (August to November 2007)
 - Department of Electrical Engineering, National Cheng Kung University, Tainan, Taiwan – *work on a project of video surveillance of epileptic patients for seizure classification* (August to November 2007)
 - Institut National de la Santé et de la Recherche Médicale (INSERM 751 /CHU la Timone), Marseille, France – *work on a project of video surveillance of epileptic patients for seizure classification* (August to November 2007)
 - Institut National de Recherche en Agronomie (INRA), Sophia Antipolis and Avignon, France – *work on early pest detection in greenhouses* (2006 until now)
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Research Projects

- Fusion plasma monitoring: <http://www-sop.inria.fr/pulsar/projects/monitore/>
 - Insect detection in greenhouses: <http://www-sop.inria.fr/pulsar/projects/bioserre/>
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Languages

- French: mother tongue
 - English: read, written, spoken (daily professional use)
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Teaching and Tutoring Experience

- Advanced shell scripting for under graduate students at Nice Sophia Antipolis University (2004-2005), 30 hours
 - Co-Supervisor of four European Under Graduate and Master degree trainees (2008-2009)
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References

- International references available on request

Publications

Book Chapters

- **V. Martin** and M. Thonnat, *A Cognitive Vision Approach to Image Segmentation*, in Tools in Artificial Intelligence, chapter 16, pp. 265-294, edited by Paula Fritzsche, Aug 2008, InTech Education and Publishing
- **V. Martin** and M. Thonnat, *A Learning Approach for Adaptive Image Segmentation*, in Scene Reconstruction, Pose Estimation and Tracking, chapter 23, pp. 431-454, edited by Rustam Stolkin, June 2007, InTech Education and Publishing

International Journal with peer-review

- P. Boissard, **V. Martin** and S. Moisan, *A Cognitive Vision Approach to Early Pest detection in Greenhouse Crops*, in International Journal of Computer and Electronics in Agriculture, vol. 62(2), pp. 81-93, April 2008, Elsevier Science Publisher

International Conferences with peer-review:

- **V. Martin**, F. Brémond, J.M. Traverso, V. Moncada and G. Dunand, *Thermal Event Recognition Applied to Tokamak Protection during Plasma Operation*, IEEE Int. Instrumentation & Measurement Conf. (I2MTC), pages 1690-1694, Singapore, 2009
- **V. Martin** and S. Moisan, *Early Pest Detection in Greenhouses*, IEEE ICPR workshop on Visual Observation and Analysis of Animal and Insect Behavior, Tampa, USA, 2008
- **V. Martin**, S. Moisan, B. Paris, and O. Nicolas, *Towards a Video Camera Network for Early Pest Detection in Greenhouses*, Int. Conf. on Diversifying Crop Protection, France, 2008
- **V. Martin** and M. Thonnat, *Learning Contextual Variations for Video Segmentation*, in Proc. of IEEE Int. Conf. on Computer Vision Systems (ICVS), pp. 464-473, Santorini, Greece, 2008
- **V. Martin** and M. Thonnat, *A Cognitive Vision Approach to Image Segmentation*, in Proc. of the IEEE Int. conf. on Tools for Artificial Intelligence (ICTAI), vol. 1, pp. 480-487, Greece, 2007
- **V. Martin** and M. Thonnat and N. Maillot, *A Learning Approach for Adaptive Image Segmentation*, in Proc. of 4th IEEE Int. Conf. on Computer Vision Systems (ICVS), pp. 40-48, New York, USA, 2007

PhD Thesis

- **V. Martin**, *Cognitive Vision: Supervised Learning for Image and Video Segmentation*, PhD thesis in Computer Science, University of Nice Sophia Antipolis, 188 pages, December 2007