Dr. Ilísio VIANA
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R&D Project Manager in Computer Vision (Ph.D.)

Fields of Interest

Computer Vision, Machine Learning, Signal Processing, Graph Theory, Numerical Analysis, Optimization, Embedded Systems, Solar Energy, Leadership, Management, Organization Theory, Change Management

Education

2017-2018 **M.Sc. II**, *Human Resources, Organization and Change Management*, Univ. Grenoble, France.

2016 **Ph.D.**, *Computer Vision*, École des Mines d'Albi-Carmaux (French Grand School), France.

2012 **M.Sc. II**, *Artificial Intelligence and Robotics*, Paul Sabatier University of Toulouse, France.

2011 **M.Sc. I**, *Signal and Image Processing*, Paul Sabatier University of Toulouse, France.

2010 **B.Sc.**, *Electrical and Computer Engineering*, Paul Sabatier University of Toulouse.

2005 **DALF**, *Diploma of Advanced French Language*, CILEC - International Center of Languages and Civilizations, Saint Étienne, France.

Work Experience

May 2018 -

Research & Development Project Manager in Computer Vision, *at ORME*, Toulouse, France.

- ▷ Design new software solutions in Image Processing and Computer Vision
- ▷ Occasionally lecturer of Image Analysis at Master Signal Image and Applications, University of Toulouse.

January 2016 to April 2018

R & D Engineer in Computer Vision, *at Steadysun*, Savoie-Technolac, France.

Technical skills related to computer Vision

- ▷ Computer vision projects
- ▷ Cloud tracking from ground sky imager
- ▷ Depth Map Estimation from stereo
- ▷ Technical expertise for hardware evolution

Other technical skills

- ▷ Solar Energy forecast
- ▷ Embedded Programming in Python
- ▷ Analyzing algorithm performance
- ▷ Linux, OpenCV C++, Eclipse, Cmake, UML

Management & Communication Skills

- ▷ Literature review and report writing (LaTeX)
- ▷ Project management (several projects : Cloud Tracking from ground imagery, Depth map estimation from fisheye cameras, Development of a new sky imager, Algorithm performance,...)
- ▷ Technical support
- ▷ Interface between company and providers
- ▷ Management of young Engineer in internship context

September 2012 - January 2016

Assistant Researcher in Computer Vision and Assitant Professor, *(French Laboratory - Institut Clément Ader and French Grand School - Ecole des Mines d'Albi).*

Research : "Automated inspection of mechanical parts by computer vision : An approach based on the CAD model"

The work includes camera calibration, pose estimation, image registration, image segmentation, feature extraction, feature matching, attributed relational graphs, bipartite graph matching. Also, it includes writing scientific papers and reports using LaTeX(see Publication section).

- ▷ Image registration and Feature extraction with Matlab
- ▷ Camera Calibration and Projection of CAD model to image plane with OpenCV C++
- ▷ Matching features using bipartite graph matching, exploring Python iGraph library

Teaching at École Nationale des Mines d'Albi-Carmaux (French Grand School member of Institut Mines-Télécom

- ▷ Practical classes of Linear Control Theory for M.Sc. students – 52 hours
- ▷ Lecture and practical classes of Numerical Analysis (Curve Fitting, Differential Ordinary Equations...) and Non Linear Optimization for B.Sc. and M.Sc. – 66 hours
- ▷ Matlab for B.Sc. – 20 hours
- ▷ Electronics for M.Sc. – 6 hours
- ▷ Introduction to Scientific Research, (monitoring of two B.Sc. student groups) – 30 hours,

March - September 2012

Image Analysis Engineer (internship), *Noomeo*, Toulouse France.

Development of a software which deals with automated inspection of mechanical assemblies, using cameras in aeronautic context

- ▷ Analysis of 2D images provided by a stereo vision sensor and 3D data from CAD model to help in automated inspection using a robot arm equipped with an end effector sensor
- ▷ Software Design with UML, Matlab prototyping and C++ programming with OpenCV library

August 2009 - October 2010

Automated Line Production controller, *Continental*, Toulouse, France.

Monitoring of Automated Line Production

- ▷ Setting up machines before the production, controlling all important parameters
- ▷ Monitoring the production in an industrial line. Act to solve line dysfunctions

March– June 2008

Computer Science Technician (internship), *LAPP*, Annecy, France.

Design and development of a Graphic User Interface GUI

- ▷ UML Modelling with Rational Rose
- ▷ Interface design with Visual Studio *C#*
- ▷ Python development with wxPython, IDE Eclipse, under Linux operating system

2003 – 2004 **French Language Teacher**, *Secondary School of Santana*, São Tomé and Príncipe.

Programming Languages and Softwares

C/C++, Python, OpenCV (C++/ Python), wxWidgets, Cmake, Sci-kit Learn, Tensor Flow
Matlab, Numpy, Matplotlib, Eclipse, Visual Studio, iGraph, StarUML, Doxygen
PHP, MySQL, CSS, HTML, WampServer, XML, LaTeX, TeXStudio, Beamer

Languages

Bilingual	French-Portuguese
English	Fluent in writing and speaking
Spanish	Good level, written, spoken

Others

Interest	Chess, Football, Photography
Trips	Austria, Germany, Italy, Portugal, Spain, Belgium, Netherlands
Web page	https ://www.viana.one
	Driving License

Publications and Communications

Ilísio Viana, Jean-José Orteu, Nicolas Cornille, and Florian Bugarin. Inspection of aeronautical mechanical parts with a pan-tilt-zoom camera : an approach guided by the computer-aided design model. *Journal of Electronic Imaging*, 24(6)061118, 2015.

Igor Jovancevic, Ilísio Viana, Jean-José Orteu, Thierry Sentenac, and Stanislas Larnier. Matching CAD model and image features for robot navigation and inspection of an aircraft. *Fifth International Conference on Pattern Recognition Applications and Methods, Rome, Italy*, 24-26 February 2016.

Ilísio Viana, Florian Bugarin, Nicolas Cornille, and Jean-José Orteu. CAD-guided inspection of aeronautical mechanical parts using monocular vision. *International Conference on Quality Control by Artificial Vision, France, Proceedings of SPIE, 95340I*, 30 April 2015.

Ilísio Viana, Rémi Parlouar, Jean-José Orteu, and Ludovic Brèthes. Fast Automated Inspection of Mechanical Assembly using a combined 2D/3D vision approach. *IUTAM Symposium on Advances of Optical Methods in Experimental Mechanics, Taipei (Taiwan)*, 3-6, November 2012.