Julien Morat, PhD
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Curriculum vitæ
Computer Vision Engineering

carrer

GoPro — 2015

Immersive video : immersive technologies (VR) in Kolor team

Non-linear optimization (CERES), Camera projection models, VR, rig calibration, 3D-reconstruction, SFM, GLSL.

Delta Drone — 2 years

Aerial imagery : valorize aerial imagery for the customer needs

Technical project manager for fully automated detection of vegetation intruding power lines using aerial imagery : Technical design, prodution and management of on-site and offshore teams (France, India, US).

Technical lead on embedded sensors : specifications, technology intelligence, sensor qualification for agriculture, energy and quarries applications.

Agile/SCRUM, projective geometry, non-linear optimization (scipy.optimize), C++, Qt, OpenCv, Magick, Python, numpy, git, linux/gnu.

BINOCLE 3D — 2013 — 5 years

3D-stereoscopic Live shooting softwares : diagnose and fix 3D-stereoscopic for live shooting

Real-time correction software for 3D missalignement : design and fix computer vision algorithms.

Motion controled 3D-rig equipped with variable length lenses: from mathematical design to implantation of motion control, including net protocol, and HTML5 remote control.

HDR video: sensor qualification, tollkits for merging video streams into HDR video (cf. NEVEX).

Post-production correction software for 3D missalignement : design and implantation of UI.

Projective geometry, lenses qualification, C++ (GNU/Visual), Linux , Embedded Linux, compilation (toolchain, makefile, autotools), MatLab, Python.

RENAULT / **Inria** — 2008 — 3 years

PhD in Computer Vision : Obstacle detection using stereovision : automotive applications

Industrial stereoscopic senor calibration : lyfe cycle study, Defect detection, Fallback mode .

Detection and segmentation of potential obstacles

Tracking with Stereo-vision System for Low Speed Following Applications .

C++ (Visual/GNU), MatLab, Python, algorithms delivery, internal+external communications, Experimental validations.

MIRALab — 2004 — 6 months

Research assistant : interact with virtual humans

C++ (visual), Facial expression detection, European project management.

Inria — 2003 — 6 + 3 months

Trainee : 3D reconstruction using camera cluster

3D Reconstruction using **colorimetry**.

Background/Silhouette learning for **real-time** 3D reconstruction

Color calibration, geometrical calibration, C++, video streaming, real-time

Education

2008	**PhD** Industry sponsored*	**Stéréovision** pour la détection d'obstacles frontaux : application à l'automobile. , oral * **CIFRE** : I.N.P.G., l'I.N.R.I.A. et Renault
2003	**Master**	Imagerie, Vision et Robotique. I.N.P.G.
2002	**Maîtrise**	Informatique à l'ufr I.M.A. Grenoble
2000	**D.U.T.**	I.U.T d'Informatique - mention Grenoble

In few words

Projective geometry · OpenCv · bundle adjustment · HTML5 · embedded · ImageMagick · optic · GIT · C++ · non-linear optimisation · Python · numpy · scipy · ceres

Misc.

Passions	**Paragliding**: qualified for passenger carriage, **Ski**: instructor at university
Side Projects	Graphical design : logos and materials for lebipbip.com, SpotAir, mobibalises