Julien Michot

Computer Vision R&D Engineer

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Born August 14, 1984, France

Education

2007 – 2010 **Ph.D. in Computer Science**
- ✔ CEA LIST *(Atomic and Alternative Energies Commission),* University of Clermont-Ferrand, France
- ✔ Research Focus: Computer Vision, Structure-from-Motion, 3D reconstruction.
- ✔ Dissertation on “Line search and multi-sensor fusion for bundle adjustment, application to video based 3D localization”
- ✔ Advisors: Adrien Bartoli, Jean-Marc Lavest, François Gaspard.
- with Honors

2006 – 2007 **Master of Science in Computer Science**
- ✔ University of Tours, France
- ✔ Focuses: computer vision, virtual reality, multimedia, image processing.
- with Honors (*Mention Bien)*

2004 - 2007 **Master’s degree in Computer Science & Engineering** *(Diplôme d’Ingénieur)*
- ✔ Polytech'Tours, France
- ✔ Specialties: image processing, virtual reality and computer graphics.
- with Honors (*Mention Bien*)

Work Experience

Fev. 2011 - now **Project and R&D Engineer, InMoDo AB, Stockholm - Sweden**
- ✔ Improvement of real-time image processing algorithms
- ✔ Development of video acquisition libraries (DirectShow, various others API)
- ✔ Development of embedded applications

2007 – 2010 (3 years) **R&D Engineer, CEA Saclay, France**
- ✔ Vision & Content Engineering Laboratory, CEA LIST
- ✔ Technology watch. Proposed innovatives solutions.
- ✔ Designed and developed *(c++)* a real-time (multi-threaded) camera localization system with sparse 3D scene reconstruction.
- ✔ Development of several libraries (image and inertial unit data acquisition, ...)
- ✔ Collaborative development (10 pers.) on innovatives projects (Gyroviz, Augmented Reality on smartphone, ...)
- ✔ Trainees management
- ✔ National & international publications, one patent

2007 (4 months) **Intern Research Assistant, Laboratoire d'Informatique de Tours** *(Computer science lab.)* **, France**
- ✔ RFAI team (Image analysis and recognition)
- ✔ Designed and implemented *(c++)* a new recognition method based on a graph matching approach. Released an opensource software.

2006 (4 months) **Intern Software Engineer, SAGE Cogestib, France**
- ✔ Designed and implemented *(java/j2ee, pl/sql)* a car rental application.

2004 (3 months)

Intern Software Engineer, Laboratoire d'Informatique de Tours, France

- ✔ RFAI team (Image analysis and recognition)
- ✔ Designed and implemented *(c++)* a new active contour algorithm based on a dynamic selection of internal parameters, for a medical application (contour segmentation).

Skills

Computer

Langages

Expert level**:** C/C++, Matlab, javascript
Familiar with**:** java, python, shell script, php/sql, ...

Operating Systems

GNU/linux (debian/ubuntu), Windows

Development Tools

Gcc/g++, microsoft visual, cmake, svn/mercurial/git, redmine

Software and Libraries

STL, Boost, Lapack/Eigen, Qt, Glut/Glui, OpenGL, Ogre3D, OpenSceneGraph, CGAL, OpenCV/libmv, DirectShow, v4l

Scientific

Computer Vision

Structure-from-motion, simultaneous localization and mapping (SLAM), 2D/3D tracking, match moving, augmented reality, 3D reconstruction, camera calibration,...
Active developer of an open source SfM library: libmv (libmv.googlecode.com)

Computer Graphics

3D projection, ray tracing, shading, texture mapping
Knowledge of GPGPU computing (Cuda)

Image processing

Compression, segmentation, indexing, matching, filtering/smoothing, recognition, …
Knowledge of several image & video formats and codecs (JPEG, MPEG, H26X,...).

Mathematic

Geometry (euclidean, projective), linear and nonlinear optimization

Languages

French mother tongue
English proficient, TOEIC B2 *(2007)*
Spanish conversant

Other interests

Fractals — Fractal art (founder of www.webfractales.org, 2003)

Sports — Martial arts (judo, jujitsu, kung fu), hiking, rugby/football

Cultural — Concerts, literature, traveling