Matthieu Jomier

Innovation and Development Manager

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Nationality: French
Age : 34

Current employment

- Innovation and Development Manager at Newtone Technologies (Lyon) in real time embedded systems for color surface appearance analysis and fast color image processing.
- Color sensor integration and multispectral imaging specialist.
- End user software development with innovative algorithms for light reflections analysis.
- Technical manager for ambitious projects with the biggest French companies in Luxury, Cosmetics, Pharmaceutical, Automotive and Paint industries.

Education

1998-2002**:** **ESCPE (University of Chemistry, Physics and Electronics), Lyon, France**. Master Degree in Electronics and Signal Processing.

1996-1998**:** **ESCPE preparatory classes**. Preparation for national competitive entrance exams to the French 'Grandes Écoles'.

Work experience

2005 - Present: **Newtone Technologies**: Innovation and Development manager in real time embedded systems for color and surface appearance analysis and fast image processing.

2003 - 2005: **University of North Carolina** at Chapel Hill: Senior Software Engineer for the Neurodevelopmental Disorders Research Center.

2002 - 2003: **Laboratory of Molecular and Ionic Spectroscopy** at Lyon (France): Senior Software Engineer for image and data processing. Software development in C/C++ and Labview.

2001 - 2002: **Delta Technologies** at Toulouse (France): VHDL programmer for fast image processing on FPGA Altera FLEX 10K integrated for a CCD camera

2000 - 2001: **University of North Carolina** at Chapel Hill: Medical Imaging and Display Analysis Lab: One year Internship. Software development for 3D surfaces comparison. 'Valmet' is now used for comparing structural segmentations between patients.

June 2000: Project leader. Conception and realization of a CCD camera from a TH7852 matrix and microcontroller.

Relevant projects

- Creation of an innovative device with high spatial resolution sensor for color, gloss and color texture acquisition and analysis (MultiSpectral imaging, Electronic and CAD)
- Innovative device development for skin gloss and color analysis based on image processing (image processing, neural network, color classifier)
- Innovative web solution for creating graphics, chart, interactive images with presentation creator and multi-user real time sharing (HTML5, Ajax, WebGL, PHP/MySql)
- Image processing embedded system for fast color analysis and pattern recognition for security paper (Signal processing, Electronic)
- Pipeline automation software for creating image processing multithreaded pipeline
- ITK (www.itk.org, NLM Insight tool kit) image processing algorithm development. Added compression for GIPL images and add new features for the GE image reader.
- Diffusion Tensor Imaging fiber tracts analysis: 'Fiber Viewer' is a new tool to analyse fiber tracts between patient based on functional magnetic resonance images (fMRI)

Patent

Device for printed document detection
*Philippe Spay - **Matthieu Jomier***
FR2896326 (A1) – 2007/07/20 - G07D7/12; G06K9/00; *G07D7/00; G06K9/00*

Publications

1. Nicolas Bechetoille, Pierre Séroul, Aurélie Boher, Solène Charpy, **Matthieu Jomier** and Valérie André-Frei. 3D modeling of dermal macrophages-containing dermis equivalent. To be published on May 2012 issue of the Journal of Investigative Dermatology (JID).

2. Carissa J. Cascio, Martin Styner, Rachel G. Smith, Michele D. Poe, Guido Gerig, Heather C. Hazlett, **Matthieu Jomier**, Roland Bammer, and Joseph Piven, Tractography-based segmentation of the corpus callosum reveals a reduced relationship to cortical white matter volume in young children with developmental delay, Am J Psychiatry, Dec 2006; 163: 2157 - 2163

3. Guido Gerig, Brad Davis, Peter Lorenzen, Shun Xu, **Matthieu Jomier**, Joseph Piven, Sarang C. Joshi: Computational Anatomy to Assess Longitudinal Trajectory of Brain Growth. 3DPVT 2006: 1041-1047

4. Martin Andreas Styner, **Matthieu Jomier**, Guido Gerig: Closed and open source neuroimage analysis tools and libraries at UNC. ISBI 2006: 702-705

5. Martin Andreas Styner, Ipek Oguz, Rachel Gimpel Smith, Carissa Cascio, **Matthieu Jomier** : Corpus Callosum Subdivision Based on a Probabilistic Model of Inter-hemispheric Connectivity. MICCAI 2005 - 765-772

6. C. Goodlett, I. Corouge, **M. Jomier**, and G. Gerig, A Quantitative DTI Fiber Tract Analysis Suite, The Insight Journal, vol. ISC/NAMIC/ MICCAI Workshop on Open-Source Software, 2005.

7. Gerig Guido, Gilmore John H, **Jomier Matthieu**, Joshi Sarang, Piven Joseph, Computational anatomy to assess growth pattern of early brain development in healthy and disease populations, American Congress of Pharmacology ACNP, Dec. 2005.

8. Sarang Joshi, Brad Davis, **Matthieu Jomier**, and Guido Gerig, "Unbiased Diffeomorphic Atlas Construction for Computational Anatomy," NeuroImage; Supplement issue on Mathematics in Brain Imaging, (PM Thompson, MI Miller, T Ratnanather, RA Poldrack, and TE Nichols, eds.), vol. 23, no. Supplement1, pp. S151-S160, Elsevier, Inc, 2004.

9. G. Gerig, **M. Jomier** and M. Chakos, VALMET: A new validation tool for assessing and improving 3D object segmentation, Proc. MICCAI2001, Proc. MICCAI 2001, Springer LNCS 2208, pp. 516-523

10. M Styner, **M Jomier**, D.W. Jones, D Weinberger, JA Lieberman, G Gerig, Shape analysis of ventricular structures in mono and dizygotic twin study, Schizophrenia Research, Vol. 49, April 28, 2001, p. 167

11. G Gerig, **M Jomier**, M Chakos, JA Lieberman, Segmentation of hippocampal shape: Improved reliability by 2D and 3D visualization of segmented objects and of intra-/inter-rater variability. Schizophrenia Research, Vol. 49, Nos. 1-2, Elsevier, April 28, 2001, p. 154

Software

Intensity Rescaler:	MRI imaging automatic intensity calibration tool based on White, Gray matter and CSF maps.
Head Circumference:	Circumference tool base on Fourier harmonics for MRI data.
MRI Watcher:	Multi images viewer for comparing MRI datasets
Valmet:	2D and 3D segmentations comparison software with real time 3D visualisation
Imagine:	Graphical Development Tool for fast image processing development using pipeline techniques and distributed cloud algorithms.
ColorSkin:	Color registration tool for multiple images processing, spatial registration and correlation
PaintMatcher:	Multi-angles spectrum analysis for paint and coating in industrial applications

Languages

French:	Native language
English:	Fluent (2 years working in the USA)
Spanish:	Basic

Skills

Computing:	C/C++, .NET, MPI, MFC, UML, Linux, Solaris, Windows, Qt, FLTK
Web:	HTML, PHP, Ajax, Java, MySQL, HTML5, WebGL
Networking:	CVS, SVN, ASP
Image Processing:	Open GL, ITK, VTK, OpenCV, MatLab, OpenNI, ROS
Electronics:	VHDL, CADENCE, Quartus II, Max+ II, ModelSim, Léonardo Spectrum, Labview, Proteus, Kicad
CAD:	Pro/Engineer

Hobbies

Sports:	Volleyball (Regional team for 10 years), tennis, swimming, skiing
Astronomy:	Member of the astronomy club of Lyon
Music:	Play piano for 8 years and guitar player in a band since 9 years
Graphics:	Digital drawing and website designing