Olivier Gérard

French, married, born on February 26, 1971 in Reims, France.

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Objective

As a computer scientist, apply my knowledge of neural networks, pattern recognition and 2D-3D image processing and visualization analysis to engineer new applications

Employment history

1999 - **Project leader at Philips Research Lab, Paris (LEP)**
2D and 3D medical image processing and visualization for X-ray (spine) and ultrasound cardiac applications.
Skills used: 2D and 3D image visualization and processing.

1995 - 1999: **Research Scientist at Philips Research Lab, Paris (LEP)**
• Development and implementation of a new smart battery management method for portable equipments in a collaboration with Fluke Inc.
Skills used: neural networks, statistics, time series analysis, control theory.
• Development of an automatic contour extraction technique applied to digital X-ray images of the human heart.
Skills used: neural networks, image processing, Hidden Markov Models.

June-Sept. 1992: Consulting report: credit card database management for a bank (CIC Paris). Detailed study of the database and the queries between the server and the cash (ATM) machines.

June-Sept. 1991: Research work: time series analysis with neural networks at the *Banque de France.* Study of new methods for currency exchange rates predictions.

Computer skills

General: Artificial intelligence, neural networks, statistics, pattern recognition, 2D and 3D image visualization and processing, speech processing, multimedia technologies
OS: Dos, Windows, Unix, Linux
Programming: Languages: C, C++, Java, Matlab , SmallTalk, Lisp, Prolog
Internet: HTML, Javascript, Java applets, Webmaster of group for 2 years
Tools: Unix shell scripts, Awk, Linux administration
Office: Word processing (Latex, Word), spreadsheet and presentation.

Educational background

1995 - 1999: **PhD candidate in computer science within the LIP6** (CS Lab. of Paris 6 U.). Defended in June 1999, with distinction. Research in artificial neural networks in collaboration with LEP, the French research lab for **Philips N.V.** Development of algorithms for estimating of evolving parameters with neural networks. Applications in an original system for smart battery management and in a detection task of medical images.

1994 - 1995: **DEA (one year master), Paris 6 University**, with distinction. Courses in artificial intelligence and pattern recognition. Projects in genetic algorithms and artificial neural networks. Six months thesis at LEP, development of a system for smart battery management based on neural networks.

1993 - 1994: **Master of Computer Science of Florida Tech**, GPA: 4.0. (*a.k.a.* Florida Institute of Technology, Melbourne, Florida) Courses on computer graphics, object-oriented programming, formal languages, database management systems, ...

1991 - 1994: **Engineer Degree of Computer Science from EISTI.** Studying programming techniques (OS, Unix, algorithms, Pascal, C, C++, Prolog), database management (theory, SQL), control theory,... . Third year specialization in Human - Machine interface and more specifically in computer graphics and speech recognition. Development of a speech recognizer for the spoken French digits.

Linguistic skills

French: Mother tongue.
English: Fluent oral and written (10 months stay in the USA).
German: Elementary knowledge.
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Hobbies

Leisure: Travel (Europe, America), Reading (Sci-Fi,...), Computer (games, personal).
Sports: Basket-ball, downhill skiing, swimming and bicycle riding.
Misc.: Voluntary worker in international projects: environmental protection (Warsaw, Poland, 1988), Habitat for Humanity (Chicago, 1990).

Research publications

O. Gérard, P. Lelong, M. Planells-Rodriguez, S. Makram-Ebeid, B. Verdonck, M. Breeuwer, R. Nijlunsing, J. Cheung, A. Veldhuizen, *Semi-automatic Landmark Detection in Digital X-Ray Images of the Spine*, Proc. of the inter. Conf. on Spinal Deformities Clermont-Ferrand, May 2000, to be printed

P. Lelong, O. Gérard, S. Makram-Ebeid, B. Verdonck, M. Breeuwer, R. Nijlunsing, J. Cheung, A. Veldhuizen, *3D Reconstruction and Analysis of the Vertebral Body Line*, Proc. of the intern. conf. on Spinal Deformities Clermont-Ferrand, May 2000, to be printed

J.-L. Hébert, D. Chemla, O. Gérard, K. Zamani, R. Franck, Y. Lecarpentier, G. Fontaine, *Contribution of the Crista Supraventricularis to Tricuspid Annulus Excursion in Arrhytmogenic Right Ventricular Dysplasia*, Proc. of the Americain Thoracic Society Conference, Toronto, Canada, May 2000

J.-L. Hébert, D. Chemla, O. Gérard, K. Zamani, R. Franck, Y. Lecarpentier, G. Fontaine, *Evaluation nouvelle de la dysplasie ventriculaire droite arythmogène (DVDA) par ventriculographie droite et gauche* Proc. des Journées Européennes de la Société Française de Cardiologie, Paris, France, Janvier 2000

O. Gérard, *Modélisation de séquences par techniques adaptatives : prévision de décharges de batterie et extraction de contours dans des images médicales*.
PhD Thesis of the Computer Lab of University Paris 6
Defended June 29th 1999, with distinction

O. Gérard, F. d'Alché-Buc, S. Markam-Ebeid, P. Gallinari, T. Artières, *Automatic Contour Extraction in Images using a 2-D Hidden Markov Model*.
ICANN'99, p. 455-460, IEE Conf. Publication Vol. No 470 Edimburgh, UK, September 7-10, 1999 **Awarded Best Application Paper**

O. Gérard, J.-N. Patillon, F. d'Alché-Buc, *Discharge Prediction of Rechargeable Batteries with Neural Networks*, International Journal of Integrated Computer-Aided Engineering, 6(1):41-53, 1999.

O. Gérard, F. d'Alché-Buc, S. Markam-Ebeid, P. Gallinari, T. Artières. *Modèle Markovien et Programmation Dynamique pour l'extraction de contours : application à des images médicales*. GRETSI'99, p. 1205-1208 Vannes, France, Septembre, 1999

O. Gérard, S. Makram-Ebeid, *Automatic Contour Detection by Encoding Knowledge into Active Contours Models*, 4th IEEE Workshop on Applications of Computer Vision, October 1998, Princeton, NJ.

O. Gérard, J.-N. Patillon, F. d'Alché-Buc, *Adaptive Modeling of Battery Behavior*, International Conference on Artificial Neural Networks, October 1997, Lausanne,

O. Gérard, J.-N. Patillon, *An automatic method for tuning the internal slopes of a neural network*, Valgo'96, July 1996, *in French.*.

J.-N. Patillon, O. Gérard, F. d'Alché-Buc, S. Gourrier, J.-P. Nadal, *Smart Battery Management*, LEP Annual Review, 1995.

O. Gérard, *Adaptive System for Smart Battery Management based on Neural Networks*, DEA thesis, Paris 6 University, September 1995.