

# CURRICULUM VITAE

CLAUDE BARRAL

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## ADDRESS

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## PERSONAL DETAILS

Gender: Male  
Date of birth: 27th of October, 1968  
Place of birth: Marseille, France  
Present Citizenship: French  
Marital Status: Married, 3 children

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## EDUCATION

1984–1988	Baccalaureat (E-level) : Mathematics and Technologies Lycée polyvalent Antonin Artaud, Marseille, France
1988–1990	Diplôme Universitaire de Technologie GEII : Electronics Institut Univ. de Technologie, St Jérôme, Marseille, France (international level equivalence: L -Bachelor-)
1993–1994	Diplôme d'Etude Supérieure Technique : Signal Processing Institut de Promotion Supérieure du Travail, Marseille, France (international level equivalence: M -Master-)
1995	Diplôme d'Etude Supérieure Technique : Electronics Conservatoire National des Arts & Métiers, Marseille, France (international level equivalence: M -Master-)
1999	Engineering Degree in Electronics Conservatoire National des Arts & Métiers, Marseille, France

2010 PhD in Computer Sciences, Swiss Federal Institute of Technology (EPFL) in Lausanne, Switzerland  
Thesis title: *Biometrics & Security: Combining Fingerprints, Smart Cards and Cryptography*  
Available here: <http://library.epfl.ch/theses/?nr=4748>  
Supervisor: Prof. Serge Vaudenay, head of IT Security and Cryptography labs (EPFL/LASEC)

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## WORKING EXPERIENCE

**03/1992–01/1998 Technical Consultant in various public or private entities**

**02/1998–07/2012 Gemplus/Gemalto (see details hereunder)**

02/1998–12/2005 Research Engineer at Gemplus, Gémenos, France

01/2006–02/2008 Research Scientist at Gemalto, La Ciotat, France

03/2008–12/2009 **part-time Scientist/Lecturer at Ecole des Mines and CEA-Leti, Gardanne, France**

& part-time Research Scientist at Gemalto

01/2010–07/2012 Biometrics & Security Senior Scientist at Gemalto

since **09/2010 Founding Scientist at Bactech, Aix-en-Provence, France**  
(<http://www.bactech.fr>) - Full time activity since 07/2012 -

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## EXPERTISE & ACTIVITIES

Electronic Design

Smart Cards and Portable Personal Devices

Biometrics and Personal Authentication

Match-on-Card

Cryptography and Communication Security

Physical Unclonable Functions (PUFs)

Scientific Communication, Patents

Education (*Associate Professor* qualification)

Standardization Activities and Funded Projects

Regular expertises for French and European research agencies (project selection and evaluation)

Setting up funded projects, consortium leader

Industrial and Academic Relationships

Scientific discovery for young people (activities in schools and leisure centres around fingerprint games)

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## LANGUAGE KNOWLEDGE

<b>French</b>	native
<b>English</b>	written, spoken and read fluently
<b>German</b>	high school basics

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## INTERESTS

<b>Music</b>	Bass Guitar player in a band
<b>Running</b>	Marathons (7: 3xMarseille, 2xParis, Lausanne, Nice)
<b>Others</b>	Soccer, Swimming, Diving, Squash, Mountain Biking

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## PUBLICATIONS

Claude Barral, Denis Praca  
From Smart Cards to Smart Objects: the road to new smart technologies  
(Computer Networks n°36, 2001)

Claude Barral, Jean-Sébastien Coron, David Naccache  
Externalized Fingerprint Matching (ICBA 2004 / LNCS 3070)

Claude Barral, Serge Vaudenay  
A Protection Scheme For MoC-Enabled Smart Cards (BSYM'06, IEEE Xplore online)

Claude Barral, Assia Tria  
Fake Fingers in Fingerprint Recognition: Glycerin supersedes Gelatin  
(SICS'08, LNCS 5458)

Claude Barral  
La biométrie faciale se laisse bernier - Expert's Point of View (01 Informatique n°1985, March 2009)

Claude Barral  
Biometrics & Security: Combining Fingerprints, Smart Cards and Cryptography - PhD Thesis, 2010

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## LECTURES

since 2003	Gemplus & Gemalto, La Ciotat, France (trainings)
2005, 2006	Ecole Supérieure d'Ingénieur de Luminy, Marseille, France
2005, 2006, 2007	ENSIMAG, Grenoble, France
since 2005	Ecole Centrale, Marseille, France
2007	Institut Supérieur d'Optique, Saint-Etienne, France
since 2007	Ecole Supérieure des Mines de Saint-Etienne, Gardanne, France
since 2009	Telecom SudParis, Evry, France
since 2010	Institut Supérieur de l'Electronique et du Numérique, Toulon, France

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## PATENTS

2003	Biometric identification method and device adapted to verification on chip cards - EP1634220
2007	Method and device for automatic authentication of a set of points - EP1990757
2009	Method for True Random Number Generation from a biometric sample - EP09306243.8
2011	Method and device for Intrinsic Pseudo-Identities generation - EP11305745.9 PUF-signed eID data - EP11306659.1
2012	Method of generating an identifier of an electronic device - EP12305058.5 Method of authenticating a device - EP12305138.5 Method, device and system for accessing a service - EP12305383.7

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## AWARD

2004	Innovation award at Cartes'04 with BioEasy (Fingerprint Recognition in a Smart Card)
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## ORAL COMMUNICATIONS

2000	From Smart Cards to Smart Objects (GDC'00, Montpellier, France)
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- 2003 Half-day initiation on biometrics and smart cards (eSmart'03, Sophia-Antipolis, France)
- 2004 Externalized Fingerprint Matching (ICBA'04, Hong Kong, China)
- 2004 BioEasy (Cartes'04, Paris, France)
- 2005 A Cryptographic Approach of Match-on-Card (Identech'05, Marseille, France)
- 2006 About the duality "Biometrics vs. Password" (World e-ID'06, Sophia-Antipolis, France)
- 2006 A Biometric Challenge-Response Protocol (eSmart'06, Sophia-Antipolis, France)
- 2006 A Protection Scheme for MoC-Enabled Smart Cards (Biometric Symposium 2006, Baltimore, United States)
- 2007 Forum Sécurité Atena "Cryptographie & Biométrie" (INT Evry, France)
- 2007 Workshop COST2101 - Biometrics for Identity Documents and Smart Cards (Lausanne, Switzerland)
- 2007 The Fuzzy Interaction between Cryptography & Biometrics (eSmart'07, Sophia-Antipolis, France)
- 2009 ASFIP: **A**ttack **S**tandardization for **F**inger**P**rint system certification (eSmart'09, Sophia-Antipolis, France)
- 2010 Inkjet printing of false fingers in fingerprint recognition (eSmart'10, Sophia-Antipolis, France)
- 2011 Enhancing Secure Access Modules with Physical Unclonable Functions (eSmart'11, Sophia-Antipolis, France)

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