

CURRICULUM VITAE

CLAUDE BARRAL
EXPERT SECURITY SCIENTIST

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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 (2002), 3 sons (1997, 2001, 2006)

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)
- [2013] IEEE Certified Biometrics Professional (CBP)
<http://www.ieeebiometricscertification.org/>

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 & new company status since 01/2013 -

Expertise & Activities

Electronic Design
Smart Cards and Portable Personal Devices
Biometrics and User Authentication, Match-on-Card
Cryptography and Communication Security
Secure Application Coding, Certification
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)

Language Knowledge

French	native
English	written, spoken and read fluently
German	high school basics

Interests

Music	Bass Guitar player in a band
Running	Marathons (10: 3xMarseille, 4xParis, Lausanne, Nice, La Rochelle) and numerous half-marathons
Others	Soccer, Swimming, Diving, Squash, Mountain Biking

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

Kevin Carta, Claude Barral, et al

On the Pitfalls of Videoconferences for Challenge-Based Face Liveness Detection - WMSCI, 2021

Kevin Carta, Claude Barral, et al

Video injection attacks on remote digital identity verification solution using face recognition - IMCIC, 2022

Kevin Carta, Claude Barral, et al

How video injection attacks can even challenge state-of-the-art Face Presentation Attack Detection Systems - IMCIC, 2023

Lectures

- [2003-2012] 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
- [2009-2012] Institut Supérieur de l'Electronique et du Numérique, Toulon, France

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

Award

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

Oral Communications

- 2000 From Smart Cards to Smart Objects (GDC'00, Montpellier, France)
- 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: Attack Standardization 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)
- 2013 PUF-Based security for Smart Objects (Puffin'2013, Berlin, Germany)
- 2014 Biometrics & Cryptography interaction (CryptoBG'14, Oriahovitza, Bulgaria)
- 2016 Automated fingerprint recognition... and its bypassing (CryptoBG'16, Oriahovitza, Bulgaria & World eID&Cybersecurity'16, Marseille, France & InPayCo'16, Paris, France)
- 2018 Evaluation of biometric systems: who said straightforward? (Phisic, France & CryptoBG, Bulgaria & eID Forum, Estonia)

Last update: November 22, 2023