

# Guillaume LECONTE

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*Software Security Researcher*

## Educational Background

- 2004–2006 **PhD (not defended)**, *ENST*, Paris.  
Computer Science and Microelectronics
- 2004 **DEA**, *The University of Paris-XI*, Orsay.  
Distributed Computing
- 2001 **DEUG**, *The University of Paris-XI*, Orsay.  
Mathematics, Physics and Computer Science

## Experience

- 2016–present **Software Security Researcher**, *Qualys*, Paris.  
Member of the Qualys Security Advisory Team : source code audit, exploit writing, etc.  
Details on demand.
- 2013–2016 **Software Engineer**, *Qualys*, Paris.  
Design and conception of several daemons to extract data from the network and send them for (malware) analysis.
  - From data link layer to application layer, protocol analysis: Ethernet, IPv4, IPv6, GRE, ARP, ICMP, UDP, TCP, DNS, FTP, HTTP, SMTP
  - Generic module to manage Layer7 connection tracking
  - TCP reassembly, packet loss management, deduplication ...
  - Use of Qosmos SDK for application layer analysis
  - Developed several drivers to manage data exchange between components, to bench IOPS (on disk, redis, POSIX mqueues ...), to link metadata to a given file ...
  - Significant contributions to the library used by the whole team (from basic data structures to more specific ones: adaptative radix trees, skiplists)
  - Design and implementation of an unified and complete configuration system for daemons (JSON output on demand, real-time value modifications ...)
  - Keywords: C, Linux, Qosmos, Networking, IOPS, Performances, Threads, Git
- 2010–2013 **Software Engineer**, *Scality*, Paris.  
Cloud storage related development with huge performances constraints.
  - Massively scalable and almost 100% POSIX-compliant distributed file system
  - Occasional developments: Remote administration shell, disk I/O management daemon, ...
  - Open Source cloud storage library with several backends (Amazon S3, CDMI, etc): lib-droplet
  - Keywords: C, Linux, Strong Parallelism (POSIX threads), FUSE, Python, DVCS (Git, Subversion)

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- 2007–2010 **Software Engineer**, *Securactive*, Paris.  
Design and implementation of a network sniffer/protocol analyzer.
- Analysis and statistics: 802.3 layer, IPv4/IPv6, TCP/UDP, ICMP, traffic dedupe, Layer7 protocols
  - QOS measurement (jitter, MOS, latency, responsiveness) of VoIP flows (MGCP and SIP)
  - Keywords: C, Linux, POSIX threads, D-Bus, DVCS (Git, Subversion, Mercurial)
- 2007 **Software Engineer**, *Bertin Technologies*, Paris.  
Machine learning corpus generation for automatic translation. Basically, build a text/audio editor with annotations facilities.
- Network exchange and synchronization for sensitive data
  - Software license design and development
  - Keywords: C/C++, Linux, Network, ...
- 2006 **Software Engineer**, *ALTEN*, Paris.  
Contractor at Thales Communications. Wi-fi eavesdropping probe. Development of a WEP/WPA encryption breaker alongside a GTK GUI
- 802.11 data interception
  - Replay the traffic and break the encryption
  - Rebuild the full conversations (phone, fax, IM, e-mails, web, etc)
  - SMS capture, decapsulation and analysis
  - Keywords: C, GTK, Wi-Fi, WEP, WPA, SMS, SS7, Linux, Rational Clearcase
- 2004–2006 **PhD Thesis (not defended)**, *Telecom ParisTech*, Paris.  
LTCI Lab, Communications and Electronics department. Title *Security Based Methods for the Conception of Cryptoprocessors*
- Publication and presentation of an article in a peer-reviewed conference: The Failure of Probing Attacks Countermeasures.
  - Work on side-channel attacks
  - Keywords: Python, C, VHDL (a few), Computed-Aided Design, ISO 7816, DES/AES, Bibliography, Power Analysis, ...
- 2003 **Trainee**, *LIP6 (Laboratoire d'Informatique de Paris-6)*, Paris.  
Linux, DSP, Computer Architecture, Disassembling, Compilation Optimizations, Iterative Compilation
- 2002 **Software Developer (contractor)**, *LIMSI (Laboratoire d'Informatique et la Mécanique pour les Sciences de l'Ingénieur)*, Orsay.  
3D, OpenGL, C, Linux

## Skills

Systems	Daily use of Linux since 1998
Programming Languages	C (strong knowledge), OCaml and Python (basics), HTML, $\LaTeX$
	French (mothertongue), English (intermediate), Binary (fluent)

## Interests

- Go
- History
- Travels
- Reading

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