

# Alessandro Barenghi

*Name* Alessandro Barenghi  
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## Position and Education

### RECORD OF EMPLOYMENT

*2nd May 2015 – present*

Assistant Professor (non tenure-track path, full-time job, according to the Italian Law n.240/2010-art.24, paragraph 3, letter A) at the Department of Electronics, Information and Bioengineering, Politecnico di Milano, Italy. Academic field for the Italian University Research and Teaching Regulation: ING-INF/05 Information Processing Systems, Academic Discipline: 09/H1 Information Processing Systems.

*1st April 2013 – 30th April 2015*

Post-Doctoral Research Assistant (according to the Italian law n.240/2010 - art.22) at the Department of Electronics and Computer Science of the Politecnico di Milano working on *Analysis and evaluation of methodologies and techniques for the design and securing of digital devices*.

*1st April 2011 – 31st March 2013*

Post-Doctoral Research Assistant (according to the Italian law n.449/1997 - art.51) at the Department of Electronics, Information and Bioengineering (DEIB) of the Politecnico di Milano working on *Study and evaluation of the design of efficient, reliable and secure digital cryptographic devices*.

*1st January 2008 – 17th February 2011*

Ph.D. student at the Department of Electronics and Computer Science of the Politecnico di Milano working on *Developments in side channel attacks to digital cryptographic devices: differential power and fault analysis*.

### EDUCATION

- Ph.D. in Information Technology at Politecnico di Milano. Title obtained on 17 February 2011.  
Title: *Developments in side channel attacks to digital cryptographic devices: differential power and fault analysis*  
Advisor: Prof. *Luca Breveglieri*  
Reviewers: Prof. *D. Naccache*, Prof. *J.P. Seifert*, Prof. *I. Verbauwhede*,  
Minor Research Title: *Techniques for the optimization of the transfer of learning in reinforcement learning algorithms* (January 2008 - September 2009).  
Advisor: Prof. *Andrea Bonarini*.
- Italian engineering licence (Professional practice examination), 1st session 2008, Politecnico di Milano.
- M.Sc. in Computer Science Engineering. April 2007.  
Thesis title: *Innovative and complex cryptographic functions: how to efficiently compute a Tate pairing in hardware (algorithm, design methodology, architecture and evaluation)*, Advisor Prof. *Luca Breveglieri*
- Cambridge *Certificate of Proficiency in English (CPE)* - Pass Grade B, Average mark 3.9/5

## VISITING EXPERIENCES

- Visiting researcher at ST Microelectronics Rousset, France (September 2009 - November 2009).
- Visiting researcher at Ruhr Universität Bochum, Bochum, Germany (February 2010 - April 2010).

## SCHOLARSHIPS

- Scholarship from STMicroelectronics (January 2008 - January 2010) for Ph.D. studies at Politecnico di Milano, Italy.
- Funding for External ECRYPT II Visitor (February 2010 - April 2010) for leading research on Differential Power Analysis at EMSEC group in Ruhr Universität Bochum.

## Awards

### AW.6. HiPEAC Paper Award

“Information Leakage Chaff: Feeding Red Herrings to Side Channel Attackers”, in *Proceedings of the 52nd Design Automation Conference (DAC 2015)*, ACM, 2015, pp. 210:1210:6 (ISBN: 978-1-4503-2730-5). [doi: <http://dx.doi.org/10.1145/2593069.2593073>]

### AW.5. SIN 2014 Best Paper Award

“Differential Fault Analysis for Block Ciphers: an Automated Conservative Analysis” in *Proceedings of the 7th International Conference on Security of Information and Networks (SIN 14)*. ACM 2014, pp. 171:1-171:8, (ISBN: 978-1-4503-3033-6/14/09). [doi: <http://doi.acm.org/10.1145/2659651.2659709>]

### AW.4. HiPEAC Paper Award

“A Multiple Equivalent Execution Trace Approach to Secure Cryptographic Embedded Software”, in *Proceedings of the 51st Design Automation Conference (DAC 2014)*, ACM, 2014, pp. 210:1210:6 (ISBN: 978-1-4503-2730-5). [doi: <http://dx.doi.org/10.1145/2593069.2593073>]

### AW.3. HiPEAC Paper Award

“Compiler-based Side Channel Vulnerability Analysis and Optimized Countermeasures Application”, in *Proceedings of the 50th Design Automation Conference (DAC 2013)*, June 2-6, 2013. Austin, Texas, USA. ACM 2013. ISBN 978-1-4503-2071-9. [doi: <http://dx.doi.org/10.1145/2463209.2488833>]

### AW.2. HiPEAC Paper Award

“A Code Morphing Methodology to Automate Power Analysis Countermeasures”, in *Proceedings of the 49th Design Automation Conference (DAC 2012)*, San Francisco, California, USA, 3-7 June 2012, ACM, ISBN 978-1-4503-1199-1 [doi: <http://dx.doi.org/10.1145/2228360.2228376>]

### AW.1. HOST 2011 Best Paper Award

“A Novel Fault Attack Against ECDSA”, in *Proceedings of IEEE International Symposium on Hardware-Oriented Security and Trust (HOST 2011)*, June 5-6, 2011, San Diego, California, USA. (ISBN: 978-1-4577-1059-9). [doi: <http://dx.doi.org/10.1109/HST.2011.5955015>].

# Teaching activity

2015-2016

Informatica (42 hours, **Lecturer**) - Undergraduate level - Bachelor of Science in Civil Engineering - BSc-IT , Politecnico di Milano.

**Lecturer** for the PhD course “Energy Aware Design of Computing Systems and Applications.” - Topic: Power Analysis Based Side Channel Attacks and Countermeasures (4 hours). - PhD Course in Information Technology (IT), Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano.

Formal Languages and Compilers (18 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Cryptography and Security of Digital Devices (16 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, at Politecnico di Milano, 2nd semester. Lecturer: Prof G. Pelosi

Software Platforms for Networking (20 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. W. Fornaciari.

2014-2015

Informatica (44 hours, **Lecturer**) - Undergraduate level - Bachelor of Science in Civil Engineering - BSc-IT , Politecnico di Milano.

Formal Languages and Compilers (18 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Cryptography and Security of Digital Devices (16 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, at Politecnico di Milano, 2nd semester. Lecturer: Prof G. Pelosi

Software Platforms for Networking (20 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. W. Fornaciari.

2013-2014

Informatica (42 hours, **Lecturer**) - Undergraduate level - Bachelor of Science in Civil Engineering - BSc-IT , Politecnico di Milano.

**Lecturer** for the PhD course “Energy Aware Design of Computing Systems and Applications.” - Topic: A Security Application of Fine Grain Power Measurement and Compiler-based Power Profile Manipulation (4 hours). - PhD Course in Information Technology (IT), Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano.

Formal Languages and Compilers (18 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Cryptography and Security of Digital Devices (16 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, at Politecnico di Milano, 2nd semester. Lecturer: Prof G. Pelosi

Software Platforms for Networking (16 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. W. Fornaciari.

2012-2013

Algorithms and Principles of Computer Science - Theoretical Computer Science (20 hours, Teaching Assistant) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. M. Pradella.

Algorithms and Principles of Computer Science - Algorithms and Data Structures (20 hours, Teaching Assistant) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. M. Pradella.

Formal Languages and Compilers (14 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Cryptography and Security of Digital Devices (16 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, at Politecnico di Milano, 2nd semester. Lecturer: Prof G. Pelosi

Software Platforms for Networking (16 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. W. Fornaciari.

#### *2011-2012*

Algorithms and Principles of Computer Science - Theoretical Computer Science (20 hours, Teaching Assistant) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. M. Pradella.

Algorithms and Principles of Computer Science - Algorithms and Data Structures (20 hours, Teaching Assistant) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. M. Pradella.

Formal Languages and Compilers (10 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Cryptography and Security of Digital Devices (16 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, at Politecnico di Milano, 2nd semester. Lecturer: Prof G. Pelosi

Software Platforms for Networking (16 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. G. Agosta.

#### *2010-2011*

Computer Architecture and Operating Systems (40 hours, Teaching Assistant) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. L. Breveglieri.

Software Platforms for Networking (20 hours, Teaching Assistant) - Undergraduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. G. Agosta.

Formal Languages and Compilers (10 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

#### *2009-2010*

Formal Languages and Compilers (10 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Fundamentals of Cryptography (18 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano (Campus Como), 1st semester. Lecturer:s Prof. A. Cherubini, Prof. L. Breveglieri.

2008-2009

Formal Languages and Compilers (10 hours, Teaching assistant) Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Fundamentals of Cryptography (18 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano (Campus Como), 1st semester. Lecturer:s Prof. A. Cherubini, Prof. L. Breveglieri.

Laboratory of Operating Systems and Software Design (12 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. G. Agosta.

2007-2008

Formal Languages and Compilers (10 hours, Teaching assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. L. Breveglieri.

Fundamentals of Cryptography (18 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano (Campus Como), 1st semester. Lecturer:s Prof. A. Cherubini, Prof. L. Breveglieri.

Computer Science II (48 hours, Lab Supervisor) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. L. Breveglieri.

2006-2007

Algorithms and Architectures for Cryptographic Systems (8 hours, Teaching Assistant) - Graduate level - Master of Science in Information Technology, MSc-IT, Politecnico di Milano, 1st semester. Lecturer: Prof. G. M. Bertoni.

Computer Science II (48 hours, Lab Tutor) - Undergraduate level - Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, 2nd semester. Lecturer: Prof. L. Breveglieri.

## STUDENTS SUPERVISION

### Graduate Students Supervision/Co-Advisor

- *Nicholas Mainardi*, 2015-2016, (in Italian) “A predicated grammar for X.509 certificates and its parser: systematically checking for syntactic soundness of digital certificates”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Alessandro Barenghi.
- *Emanuele Dedonatis*, 2015-2016, “Differential power analysis on embedded multicore platforms: experimenting with contactless power measurements”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Alessandro Barenghi.
- *Davide Macocchi*, 2014-2015, (in Italian) “Progettazione e validazione di circuiti aritmetico-logici resistenti a crittanalisi di tipo side-channel”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Alessandro Barenghi.
- *Dario Navoni*, 2013-2014, “Security in Building Automation Systems: a Study on Multi-party Key-agreement Protocols”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Alessandro Barenghi.
- *Francesco Fiduccia*, 2013-2014, “Fine-tuning of a Toolchain for the Automated Application of Side-channel Software Countermeasures”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Giovanni Agosta. Co-advisors: Dr. Gerardo Pelosi, Dr. Alessandro Barenghi

- *Michele Beretta, Alessandro Di Federico*, 2012-2013, “Security and Privacy in Social Networks”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Alessandro Barenghi.
- *Massimo Maggi*, 2012-2013, “Compiler-based Techniques to Assess the Side-channel Vulnerability of Cryptographic Implementations”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Dr. Giovanni Agosta, Alessandro Barenghi.
- *Francesco Fiduccia*, 2012-2013, “Implementation of a Tootchain for the Automated Application of Side-channel Software Countermeasures”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy. Advisor: Prof. Gerardo Pelosi. Co-advisor: Prof. Giovanni Agosta, Alessandro Barenghi.
- *Fabio Pozzi*, 2010-2011, (in Italian) “Analisi, Progettazione e Sviluppo di Contromisure per Vulnerabilità basate su Alterazioni del Flusso di Controllo LibDefender: una libreria dinamica per garantire l’integrità del flusso di esecuzione”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Gerardo Pelosi. Co-advisor: Alessandro Barenghi.
- *Valerio Ponte, Ermes Viviani*, 2010-2011, “Parallel Scalable Parsing With Floyd Grammars”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Stefano Crespi Reghizzi. Co-advisor: Alessandro Barenghi.
- *Paolo Bottaglia*, 2010-2011, (in Italian) “Aspetti di sicurezza informatica in centri servizi di grandi dimensioni: il caso di Lombardia Informatica”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Luca Breveglieri. Co-advisor: Alessandro Barenghi.
- *Andrea Palomba*, 2009-2010, (in Italian) “Novel Differential Fault Attack to Integer Multiplication in Elliptic Curve Digital Signature Algorithm based on Special Case Discrete Logarithm”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Luca Breveglieri. Co-advisor: Alessandro Barenghi.
- *Mauro Pellicoli*, 2008-2009, (in Italian) “Fault Attacks Against the AES Cryptographic System”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Luca Breveglieri. Co-advisor: Alessandro Barenghi.
- *Emanuele Parrinello*, 2008-2009, (in Italian) “Fault Attacks Against RSA”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Luca Breveglieri. Co-advisor: Alessandro Barenghi.
- *Antonio Parata*, 2008-2009, (in Italian) “Individuazione automatica di vulnerabilità in applicazioni PHP mediante Static Taint Analysis”. Master of Science in Information Technology, MSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Giovanni Agosta. Co-advisor: Gerardo Pelosi. Co-advisor: Alessandro Barenghi.

#### Undergraduate Students Supervision/Co-Advisor

- *Santi Raffa*, 2009-2010, (in English) “yACCESS: a Cryptographic Filesystem Layer in Userspace”. Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.

- *Yilai Chen, Antonio Dionisio*, 2009-2010, (in Italian) “Studio di Fattibilità per la progettazione di un coprocessore per il calcolo di funzioni di pairing”. Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.
- *Maurizio Dal Corno*, 2009-2010, (in Italian) “Return into Itself: costruzione di un insieme di istruzioni Turing-completo, per iniezione di codice in vulnerabilità di tipo buffer-overflow, mediante letture disallineate nel segmento di codice dell’eseguibile”. Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.
- *Andrea Cazzola, Giovanni Francesco del Nero*, 2009-2010, (in Italian) “Implementazione di un attacco pratico al crittosistema C2 per la protezione di diritti digitali CPRM/CPPM”. Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.
- *Daniele Rogora*, 2009-2010, (in Italian) “Fattorizzazione di interi su scheda grafica: ottimizzazione e valutazione del General Number Field Sieve”. Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Giovanni Agosta. Co-Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.
- *Michele Carminati - Roberto Caron* 2009-2010, “Progetto e ottimizzazione di un sistema di cifratura XTS-Blowfish per architetture GPGPU” Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Giovanni Agosta. Co-Advisor: Alessandro Barenghi.
- *Davide Macocchi - Rossella Macchi* 2008-2009, “Sviluppo di strategie di microcombattimento tramite apprendimento per rinforzo”, Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Giovanni Agosta. Co-Advisor: Alessandro Barenghi.
- *Francesco Marconi* 2008-2009, “Accelerazione di Crittografia per Memorie di Massa tramite GPU” Bachelor of Science in Information Technology, BSc-IT, Politecnico di Milano, Milano, Italy.  
Advisor: Prof. Giovanni Agosta. Co-Advisor: Gerardo Pelosi. Co-Advisor: Alessandro Barenghi.

## Professional Activities

### NATIONAL AND INTERNATIONAL RESEARCH PROJECTS

I contributed actively in the following research projects:

- *TOISE - Trusted Computing for European Embedded Systems*, ENIAC JOINT UNDERTAKING, 2010, [HTTP://WWW.TOISE.EU](http://www.toise.eu) (local project leader: prof. Luca Breveglieri)  
Topic: develop and validate trust hardware applicable both to lightweight embedded devices and as security anchors within related embedded platforms.

## CONFERENCE AND WORKSHOP ORGANIZATION

### Program Chair and Organization Committees

- Co-chair and Co-Organizer of the 3rd HiPEAC Workshop on Cryptography and Security in Computing Systems (CS2), Prague, Czech Republic, 19th January 2016. Proc. ACM. (ISBN: 978-1-4503-4065-6)
- Registration Chair for the ACM International Conference on Computing Frontiers 2016 Como, Italy, 16th - 18th May 2016. Proc. ACM.
- Co-chair and Co-Organizer of the 2nd HiPEAC Workshop on Cryptography and Security in Computing Systems (CS2), Amsterdam, The Netherlands, 19th January 2015. Proc. ACM. (ISBN: 978-1-4503-3187-6)
- Co-Organizer of the 1st HiPEAC Workshop on Cryptography and Security in Computing Systems (CS2), Vienna, Austria, 20th January 2014. Proc. ACM. (ISBN: 978-1-4503-2484-7)

## PROGRAM COMMITTEE MEMBERSHIP

I am a member of the Program Committee of the following conferences:

- 7th International Conference on Security of Information and Networks - SIN - (2014-2016). Proc. ACM.
- Workshop on Security Proofs for Embedded Systems - PROOFS - (2012 to 2016), Proc. Springer.
- International Conference on Information Systems Security and Privacy - ICISSP - (2015-2016). Proc. INSTCC.
- Workshop on Fault Diagnosis and Tolerance in Cryptography (FDTC 2012). Proc IEEE-CPS.

## REFEREE AND CHAIR SERVICES

I acted as a reviewer for the following conferences/journals:

- ACM Transactions on Design Automation of Electronic Systems (TODAES)
- IEEE Transactions on Computers (TC)
- IEEE Transactions on VLSI Systems (TVLSI)
- IEEE Transactions on Information Forensics and Security (TIFS)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)
- IEEE Transactions on Emerging Topics in Computing (TETC)
- IEEE Systems Journal - Special Issue on Security and Privacy in Complex Systems
- Journal VLSI Integration - Elsevier
- Journal of Systems and Software - Elsevier
- ACM/IEEE Design Automation Conference (DAC 2012 to 2016 as external reviewer, 2015 as expert reviewer)
- IEEE/ACM International Conference on Computer-Aided Design (ICCAD 2015 as external reviewer)
- IEEE/ACM International Conference on Design Automation and Test in Europe (DATE 2011-2013-2014) (external reviewer)



- International Conference on Security and Cryptography (SECRYPT 2011-2012-2014) (external reviewer)
- IEEE International Symposium on Computer Arithmetic (ARITH 2013)
- IEEE Symposium on Hardware-Oriented Security and Trust (HOST 2011-2012)
- International Cryptology Conference (CRYPTO 2011) (external reviewer)
- Annual IEEE/ACM International Symposium on Microarchitecture (MICRO-43, 2010) (external reviewer)

I acted as session chair for the tracks

- *Cryptographic Techniques 2* at the 7th International Conference on Security of Information and Networks (SIN '14)
- *Information Security and Privacy I-II-III* at the 9th International Conference on Information Technology: New Generations (ITNG 2012)
- *Security Attacks* at the Workshop in Information Security Theory and Practice (WISTP 2011)
- *Embedded Cryptographic Systems and Information Security and Privacy II* at the 5th International Conference on Information Technology: New Generations (ITNG 2008)

My Erdős Number is 2 : (Alessandro Barenghi → Israel Koren → Paul Erdős).

## Talks and Tutorials

### INVITED TALKS

- Panel session: “Does the Internet of Things need hardware security?” at the Workshop on Malicious Software and Hardware in Internet of Things, (MAL-IoT 2016) Como, Italy, 16th May 2016.
- Keynote speech: “Turning security from a feature into a design guideline” at Workshop on Practical Hardware Innovations in Security Implementation and Characterization (PHISIC 2013), 13-14 June 2013, held at the Centre Microélectronique de Provence, Gardanne
- “GPGPU Acceleration of Cryptographic Applications”, at the IEEE/ACM Workshop on Designing for Embedded Parallel Computing Platforms: Architectures, Design Tools, and Applications. Design Automation and Test in Europe, March 12, 2010, DATE 2010, Poster Session (w/o Proceedings).
- “Fault attacks to AES with every key length” March 16, 2010, held at UCL Crypto Group, Université catholique de Louvain, Louvain-la-neuve Belgium.
- “Attacking AES 256 Through Low Voltage Faults” April 15, 2010, held at Horst Görtz Institut für IT-Sicherheit, Ruhr Universität Bochum, Bochum, Germany.

### POSTER (PEER-REVIEWED) – INTERACTIVE PRESENTATIONS

- Giovanni Agosta, Alessandro Barenghi, Gerardo Pelosi and Michele Scandale. 2016. “Encasing Block Ciphers to Foil Key Recovery Attempts via Side Channel”, Work-in-Progress session at the 2016 Design Automation Conference (DAC'16), June 5, 2016, Austin, TX, USA.
- Giovanni Agosta, Alessandro Barenghi, Massimo Maggi and Gerardo Pelosi. 2014. “Extending the Design Space for Secure Embedded System Design”, Work-in-Progress session at the 2014 Design Automation Conference (DAC'14), June 5, 2014, San Francisco, CA, USA.

- Gerardo Pelosi in collaboration with Giovanni Agosta, Alessandro Barengi, and Massimo Maggi. 2014. “Compiler-based Side Channel Analysis”. Workshop on Parallel Programming and Run-Time Management Techniques for Many-core Architectures and Design Tools and Architectures for Multicore Embedded Computing Platform - PARMA-DITAM 2014 (Poster Submission Session), January 20, 2014, Vienna, Austria.

#### SUMMER SCHOOLS

- ECRYPT II Winter School: Mathematical Foundations in Cryptography at EPFL, Lausanne, Switzerland.

# Complete publication list

The research activity concerning publications involving multiple authors took place in a tightly knit collaboration among them, thus the contribution of each one of them to the publication itself is to be considered equal.

## PUBLICATION LIST

Refereed international journals _____	IJ (12)
Editorial contributions _____	ED (2)
Refereed international books and book chapters _____	IB (6)
Refereed international conferences _____	IC (41)
Patent (Pending) _____	PT (1)
Technical Reports and Theses _____	TR (7)

Bibliometry: Google Scholar (All - 2011): Citations 759 - 719, h-index 15 - 15, i10-index 22 - 21; Scopus: Citations 419, h-index: 11

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## REFEREED INTERNATIONAL JOURNALS

- IJ.12. Alessandro Barengi, Michele Beretta, Alessandro Di Federico, Gerardo Pelosi, "A privacy-preserving encrypted OSN with stateless server interaction: the Snake design", *Computers & Security*, vol.x, no. x, pp. x, 2016, [accepted pending minor revision] Elsevier, ISSN: 0167-4048.
- IJ.11. Alessandro Barengi, Stefano Crespi Reghizzi, Dino Mandrioli, Federica Panella, and Matteo Pradella, "Parallel Parsing Made Practical", *Science of Computer Programming*, vol.112, no. 3, pp. 195-226, 2015, Elsevier, ISSN: 0167-6423. (DOI: <http://dx.doi.org/doi:10.1016/j.scico.2015.09.002>)
- IJ.10. Alessandro Barengi, Guido M.Bertoni, Luca Breveglieri, Gerardo Pelosi, Stefano Sanfilippo, and Ruggero Susella. "A Fault-based Secret Key Retrieval Method for ECDSA: Analysis and Countermeasure". *ACM Journal on Emerging Technologies in Computing Systems (JETC)*, vol. 13, no. 1, pp. 8:1-8:26, 2016. ISSN: 1550-4832 (Print) 1550-4840 (Online). (DOI: <http://dx.doi.org/10.1145/2767132>)
- IJ.9. Giovanni Agosta, Alessandro Barengi, Gerardo Pelosi, and Michele Scandale. "The MEET Approach: Securing Cryptographic Embedded Software against Side Channel Attacks". *IEEE Transaction on Computer-Aided Design of Integrated Circuits and Systems*, vol.34, no. 8, pp.1320-1333. ISSN: 0278-0070 (Print). (DOI: <http://dx.doi.org/10.1109/TCAD.2015.2430320>)
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Available upon request.

Milan, June 14, 2016

Signature  
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*I agree to the treatment of personal data in accordance with privacy regulations*