

CURRICULUM VITÆ

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ÉDUCATION

- 2002–2007 **PhD thesis** in computer science from [Université de Rennes 1](#) and [Kansas State University](#).
- Title: Confidentiality Enforcement Using Dynamic Information Flow Analyses
- Advisors: [Thomas Jensen](#), [David Schmidt](#) and [Anindya Banerjee](#)
- Grants: **Research Grant** from the French research government department, **Mobility Grant** from the French research government department, **Graduate Research Assistantship** from Kansas State University and **Graduate Teaching Assistantship** from Université de Rennes 1 (ATER).
- Defense: 27th of September 2007 in France and 25th of October 2007 in the US
- 2003 One year of studies spent at **Kansas State University**.
- 2002 *Research Master* (Diplôme d'Études Approfondies — DEA) in computer science from [INSA Rennes](#) and [IRISA](#).
- 2002 *Professional Master* (Diplôme d'ingénieur) in computer science from [INSA Rennes](#).

POSTDOCS

- 2010-2012 In the [theory group](#) at KTH/CSC with [Mads Dam](#).
- 2007-2009 At [INRIA-Microsoft Research Joint Center](#) with [Cédric Fournet](#) and [Tamara Rezk](#).

PUBLICATIONS

Thesis

PhD Gurvan Le Guernic (2007). **Confidentiality Enforcement Using Dynamic Information Flow Analyses**. PhD thesis, Kansas State University & Université de Rennes 1.

International Refereed Conferences and Workshops

- CSF'12 Musard Balliu, Mads Dam, and Gurvan Le Guernic (June 2012). **ENCOVER: Symbolic Exploration for Information Flow Security**. In *Proc. of the Computer Security Foundations Symposium*. Cambridge, USA. To appear. IEEE.
- PLAS'11 Musard Balliu, Mads Dam, and Gurvan Le Guernic (June 2011). **Epistemic Temporal Logic for Information Flow Security**. In *Proceedings of the ACM SIGPLAN Workshop on Programming Languages and Analysis for Security*. San Jose, USA. Article No 6. ACM Digital Library.
- CCS'09 Cédric Fournet, Gurvan Le Guernic and Tamara Rezk (2009). **A Security-Preserving Compiler for Distributed Programs**. In *Proceedings of the ACM Conference on Computer and Communications Security*. Chicago, USA. pp 432–441.
- VERIFY'08 Gurvan Le Guernic (2008). **Precise Dynamic Verification of Confidentiality**. In *Proceedings of the International Verification Workshop*. Sydney, Australia. CEUR Workshop Proceedings 372, pp 82–96.
- ASIAN'07 Gurvan Le Guernic (2007). **Information Flow Testing**. In *Proceedings of the Annual Asian Computing Science Conference*. Doha, Qatar. LNCS 4846, pp 33–47.
- CSF'07 Gurvan Le Guernic (2007). **Automaton-based Confidentiality Monitoring of Concurrent Programs**. In *Proceedings of the IEEE Computer Security Foundations Symposium*. Venice, Italy. pp 218–232.
- RULE'07 Gurvan Le Guernic and Julien Perret (2007). **FLIC: Application to Caching of a Dynamic Dependency Analysis for a 3D Oriented CRS**. In *Proceedings of the International Workshop on Rule-Based Programming*. Paris, France.
- ASIAN'06 Gurvan Le Guernic, Anindya Banerjee, Thomas Jensen and David Schmidt (2006). **Automata-based Confidentiality Monitoring**. In *Proceedings of the Annual Asian Computing Science Conference*. Tokyo, Japan. LNCS 4435, pp 75–89.
- FCS'05 Gurvan Le Guernic and Thomas Jensen (2005). **Monitoring Information Flow**. In *Proceedings of the Workshop on Foundations of Computer Security*. Chicago, USA. pp. 19–30. Published by DePaul University.

International French-speaking Refereed Conferences

- MajecSTIC'06 Nicolas Bonnel and Gurvan Le Guernic (2006). **Système de recherche de méthodes Java basé sur leur signature**. In *Proc. Majecstic 2006*. Lorient, France.
- MajecSTIC'05 Gurvan Le Guernic and Julien Perret (2005). **FL-system's Intelligent Cache**. In *Proc. Majecstic 2005*. Rennes, France. pp 79–88.

Technical Reports

- TR-2008 Gurvan Le Guernic (2008). **Precise Dynamic Verification of Noninterference**. Technical report, July 2008.
- TR-2007b Gurvan Le Guernic (2007). **Dynamic Noninterference Analysis Using Context Sensitive Static Analyses**. Technical Report Nr. 2007-5. CIS, KSU, KS 66506, USA.
- TR-2007a Gurvan Le Guernic (2007). **Automaton-based Non-interference Monitoring of Concurrent Programs**. Technical Report Nr. 2007-1. CIS, KSU, KS 66506, USA.
- TR-2006 Gurvan Le Guernic, Anindya Banerjee and David Schmidt (2006). **Automaton-based Non-interference Monitoring**. Technical Report Nr. 2006-1. CIS, KSU, KS 66506, USA.

MOBILITY

- KTH (Sweden) PostDoc with [Mads Dam](#) at [KTH Royal Institute of Technology](#) from April 2010 to May 2012.
- KSU (USA) joint PhD with [Kansas State University](#): spent the full year of 2003 studying and working on research project at KSU and spent 5 months from October 2005 to February 2006 working on research project at KSU, in addition to shorter stays.

SCIENTIFIC INTERACTIONS

- ~7 reviews Reviewed papers for journals, such as [Journal of Computer Security](#) and [IET Information Security Journal](#), and conferences, such as [CCS](#) and [RV](#).
- ~40 presentations Invited presentations to [FormaCrypt](#), [DIWALL](#) and [TNG Security](#) in addition to conferences and workshops, such as the [Annual Asian Computing Science Conference](#) or the [Computer Security Foundations Symposium](#), and project meetings, such as the [EU FP7 Project HATS](#).

CONTRACTUAL ACTIVITIES

- [EU FP7 HATS](#) The main goal of the project is the development of a formal framework for the creation and maintenance of product families. The project participants study and develop techniques aiming at high adaptability and trustworthiness of software resulting from the composition of pieces of code mainly written in the dedicated ABS language. The work package I am involved in studies techniques to verify or ensure the trustworthiness of the resulting software.
- Participants: Chalmers University of Technology, Universitetet i Oslo, Kungliga Tekniska Högskolan, Universidad Politécnica de Madrid and IMDEA Software, Universität Kaiserslautern, Università di Bologna, Centrum voor Wiskunde en Informatica, Norsk Regnesentral, Fredhopper, Fraunhofer Institute for Experimental Software Engineering, Katholieke Universiteit Leuven, Institute of Cybernetics.
- [ANR ParSec](#) The project studies security-related issues of concurrent programming. In this project, my work focus on the dynamic information flow analysis of concurrent programs, and the noninterference free compilation of communicating programs.
- Participants: INRIA Sophia-Antipolis, Université Paris 7 (PPS Laboratory), INRIA Rocquencourt (MOSCOVA) and INRIA Rennes (Lande).
- [ACI PoTestAT](#) The main goal of the project is to verify system-wide formal security policies using testing-oriented methodologies. The work package, I am concerned with, focus on verifying information flow related sub-policies of processes running on the network.
- Participants: LSR/IMAG - INPG (Vasco), VERIMAG (DCS) and IRISA (Vertecs, Lande and DistribCom).

PROTOTYPES

- ENCoVer** *Lead developer [Java (~6.000 lines of code), JavaPathFinder].* Verification of Java programs confidentiality based on the epistemic logic, implemented on top of Java-PathFinder and Z3.
First prototype operational. Distribution planned after publication.
- CFlow** *Sole developer [F# (~11.000 lines of code), .NET].* Compiler for distributed programs enforcing safe information flows via cryptography.
CeCILL-B license (BSD-like license). <http://www.le-guernic.info/cflow.html>
First version operational for a simple sequential language. Theoretical developments to extend the language, mainly with parallelism, under way before future implementation.
- JMBrowser** *Lead developer [Java (~6.000 lines of code), SWT, Derby].* Java method browser based on method signature distances.
GPL v3 license. <http://www.le-guernic.info/jmbrowser.html>
First prototype operational. Efficiency improvements planned before wider diffusion.

TEACHING

Courses followed

Teaching and Learning in Higher Education KTH course for university teachers (7.5 credits, 200 workload, course book: “Teaching for Quality Learning at University”, John Biggs and Catherine Tang, Open University Press, 2007).

Experiences

- Graduate level** *Introduction to XML* (6h of lab work in 2007), *Internet Networks and Communications* (6h of course work and 20h of lab work in 2006), *Methodologies for Object Oriented Design* (8h of course work and 24h of lab work in 2006), *Information Flow Analysis and Type Systems* (6h of course work, 4h of exercises session and 4h of lab work in 2012)
- Undergraduate level** *Computer Hardware Architecture* (48h of lab work in 2007), *Introduction to the PHP language* (10h of course work in 2007), *Initiation to Algorithms* (18h of lab work in 2004 and 28h of lab work in 2002)

OTHER EXPERIENCES

- February to June 2002 Internship at [IRISA](#) on the analysis of concurrent Java programs.
- July and August 2001 Development of a network supervision tool at ReefEdge, USA.
- July and August 2000 Development and maintenance of web sites at [MBA multimédia](#).
- August 1999 Summer job at [France Telecom](#), France.
- July and August 1998 Summer job at [Yellowstone National Park](#), USA.