

# Jérémy Dubreil

Expert in formal methods for security analysis

## Research Interests

Formal verification of security properties. Model-checking, Model-Based Testing, Supervisory Control for confidentiality properties. Quantitative analysis of secret information leakage. Modal Logic and Games Theory for the design of secure systems.

## Current Position

Dec 2009 to Jan 2011 **Postdoctoral researcher** with INRIA grant in Comète Team of Catuscia Palamidessi at the LIX laboratory of École Polytechnique, Palaiseau, France

## Education

- 2006 - 2009 **PhD in Computer Science**, *University of Rennes 1 and INRIA Rennes, France.*  
*Monitoring and Supervisory Control for Opacity Properties*  
Supervised by Thierry Jéron and Hervé Marchand
- 2003 - 2006 **Engineering Degree in Telecommunication**, *TELECOM Bretagne, Brest, France.*
- 2004 - 2006 **Master of Science in Computer Science**, *Uppsala University, Uppsala, Sweden.*  
Master thesis "Non-interference on Symbolic Transition System" hosted in the VerTeCs Team, INRIA Rennes, France
- 2001 - 2003 **Maîtrise in Mathematics**, *University of Nantes, France.*
- 1999 - 2001 **Post-Secondary Preparatory School**, *Nantes, France.*  
Preparatory program for entrance examinations to the french *Grandes Écoles*, equivalent to two years of university studies in Mathematics and Physics

## Other Experience

- 2006 - 2009 **Lecturer** for the course *Introduction to Algorithmic* with the Scheme programming language, INSA Rennes, France.
- 2008 **Supervisor** with Hervé Marchand of the internship of Wassim Wehbi (ESIB, Lebanon) on the implementation in OCaml of monitors for the supervision of security properties
- 2003 **Tutor** in Mathematics for first year students in biology, University of Nantes, France
- 2001 - 2004 **Private lectures** in Mathematics and Physics for high school students
- 2006 - 2009 **Reviewer** for Conference on Decision and Control, Automatica, Workshop on Discrete Event Systems and IEEE Transactions on Automatic Control, CONCUR, and the Control Engineering Practice journal
- 2001 - 2003 **Developer** in Visual Basic of tools for detecting errors on databases, Airbus SAS, Nantes, France. Totally six months during summertime

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## Referees

**Philippe Darondeau**, *INRIA Senior Research Scientist (DR)*.

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**Thierry Jéron**, *INRIA Senior Research Scientist (DR)*.

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**Hervé Marchand**, *INRIA Research Scientist (CR)*.

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**Catuscia Palamidessi**, *INRIA Senior Research Scientist (DR)*.

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## Miscellaneous

2007 - 2008 President (2007) and vice-president (2008) of ADOC, the PhD student association of the IRISA laboratory

Computer Skills OCaml, Python,  $\text{\LaTeX}$ , Prolog, Scheme, Linux, MySQL

Languages French native and fluent in English  
Basics in German, Swedish, Turkish and Spanish

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## Publications

Jérémy Dubreil. *Monitoring and Supervisory Control for Opacity*. PhD thesis, Université de Rennes 1, France, November 2009.

Jérémy Dubreil, Philippe Darondeau, and Hervé Marchand. Supervisory control for opacity. *IEEE Transactions on Automatic Control*, 55(5):1089–1100, May 2010.

Phillipe Darondeau, Jérémy Dubreil, and Hervé Marchand. Supervisory control for modal specifications of services. In *Workshop on Discrete Event Systems, WODES'10*, pages 428–435, Berlin, Germany, August 2010.

Franck Cassez, Jérémy Dubreil, and Hervé Marchand. Dynamic observers for the synthesis of opaque systems. In *7th International Symposium on Automated Technology for Verification and Analysis (ATVA'09)*, Macao SAR, China, October 2009.

Jérémy Dubreil, Philippe Darondeau, and Hervé Marchand. Opacity Enforcing Control Synthesis. In *Proceedings of the 9th International Workshop on Discrete Event Systems (WODES'08)*, page 28–35, Göteborg, Sweden, May 2008. IEEE.

Hervé Marchand, Jérémy Dubreil, and Thierry Jéron. Automatic testing of access control for security properties. In *TestCom'09*, November 2009.

Jérémy Dubreil, Thierry Jéron, and Hervé Marchand. Monitoring confidentiality by diagnosis techniques. In *Proceedings of the 10th European Control Conference (ECC'09)*, Budapest, Hungary, August 2009.

Jérémy Dubreil. Opacity and abstractions. In *Proceedings of the First International Workshop on Abstractions for Petri Nets and Other Models of Concurrency (APNOC'09)*, Paris, France, June 2009.

Hervé Marchand, Jérémy Dubreil, and Thierry Jéron. Génération automatique de tests pour des propriétés de sécurité. In *4ème Conférence sur la Sécurité des Architectures Réseaux et des Systèmes d'Information*, page 157–174, June 2009.