

# Pierre-Alain Reynier

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French Citizenship  
Birth date : April 29, 1980

## Education

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**2007–2008** : Post-Doct Fellow (funded by the Lavoisier Fellowship Programme of the French Ministry of Foreign Affairs) in the reasearch group “Formal Methods and Verification”, head Jean-François Raskin.

**2004–2007** : PhD Student in Computer Science in LSV (ENS Cachan) under the supervision of Patricia Bouyer and François Laroussinie : “Verification of timed and distributed systems : models, algorithms and implementability”. Defended on 21 June 2007.

**2003–2004** : “DEA” in Computer Science (Master 2) with distinction TB (ranked 2/35).

**2002–2003** : “Agrégation” in Mathematics (ranked 47/330).

**2001–2002** : “Maîtrise” in Computer Science (Master 1) with distinction TB.  
: “Maîtrise” in Mathematics (Master 1) with distinction TB.

**2001–2005** : Admission and scholarship at “École Normale Supérieure de Cachan”.

## Research interests

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My research works fall into the framework of the application of formal methods to software validation. More precisely, I am interested in the definition and the study of distributed and timed models, from their expressiveness to the development of dedicated model checking algorithms.

## Projects I am/was involved in

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- Participation to the ACI CORTOS (program of the French ministry of research) on control of timed systems, 2003–2006 (web site : <http://www.lsv.ens-cachan.fr/aci-cortos/>)
- Participation to the ANR DOTS (program of the French ministry of research) on distributed, open and timed systems, 2007–2010 (web site : <http://www.lsv.ens-cachan.fr/anr-dots/>)
- Participation to the IAP MoVES (Interuniversity Attraction Poles Programme) on Modelling, Verification and Evolution of Software, 2007–2011 (web site : <http://prog.vub.ac.be/moves/>)
- Participation to the program Quasimodo (funded by European Commission) on Quantitative System Properties in Model-Driven Design of Embedded Systems, 2008–2010.

## Stay in foreign countries

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- One-year post-doctoral stay at University of Brussels, Belgium, in 2007-2008.

- One stay of two weeks at Aalborg University (BRICS & CISS, Denmark) in October 2005 for a collaboration on UppAal with Kim Larsen.

## **Implication in Research**

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- Reviewer for several international conferences (TACAS'05, FORMATS'05, CONCUR'06, FORMATS'06, TACAS'07, MSR'07, STACS'08, TACAS'08, FOSSACS'08, WODES'08, ICATPN'08) and the european journal JESA.
- Participation to the organization of an international conference (FORMATS'06).

## **Teaching**

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I hold a position of Teaching Assistant in the department of Computer Science at “École Normale Supérieure de Cachan” between 2005 and 2007.

**2006–2007** : Computability in L3 (ENS Cachan).

: Project of Programmation (C) in M1 (ENS Cachan).

**2005–2006** : Language Theory in L3 (ENS Cachan).

: Project of Programmation (Java) in L3 (ENS Cachan).

**2004–2005** : Computer Science in Lycée Lakanal (Sceaux) : initiation to Maple, programmation and applications to mathematics.

: Interrogations in Mathematics in Lycée Lakanal (Sceaux).

**2003–2004** : Computer Science in Lycée Lakanal (Sceaux) : initiation to Maple, programmation and applications to mathematics.

## **Presentations and invited talks**

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International conferences :

ATVA'06, ICALP'06, FORMATS'05, MOVEP'04.

Invited talks :

– Meeting of ANR Dots and Averiss, Bordeaux, France, 2008.

– Meeting of ACI Persée, Cortos and Versydis, Cachan, France, 2006.

– Seminars in LACL (Créteil, France, 2005), IRISA (Rennes, France), ULB (Brussels, Belgium, 2006), LaBRI (Bordeaux, France), LIF (Marseille, France, 2007).

## **Misc**

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### **Administrative responsibilities**

– Member of the organization committee of “RED 2006” (Meeting for PhD students of ENS Cachan).

– President of “Solidarité Normalienne” in 2001-2002, student association for sustainable development (<http://www.sono.ens-cachan.fr/>).

**Foreign languages** : english read and spoken fluently, good notions of german.

## **Publications**

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My publications can be downloaded from the following webpage :

<http://www.ulb.ac.be/di/ssd/pareynier/pub.html>

## International Journals

- [1] Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Timed Petri nets and timed automata : On the discriminating power of Zeno sequences. *Information and Computation* 206 (1), pp. 73-107, 2008. Elsevier.

## International conferences

- [2] Patricia Bouyer, Nicolas Markey, and Pierre-Alain Reynier. Robust Analysis of Timed Automata via Channel Machines. In *Proc. 11th Int. Conf. on Foundations of Software Science and Computation Structures (FoSSaCS'08)*. To appear in *LNCS*. Springer, 2008.
- [3] Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Timed unfoldings for networks of timed automata. In *Proc. 4th Int. Symp. on Automated Technology for Verification and Analysis (ATVA'06)*, vol. 4218 of *LNCS*, pages 292–306. Springer.
- [4] Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Timed Petri nets and timed automata : On the discriminating power of Zeno sequences. In *Proc. 33rd Int. Coll. on Automata, Languages and Programming (ICALP'06) — Part II*, vol. 4052 of *LNCS*, pages 420–431. Springer.
- [5] Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Extended timed automata and time Petri nets. In *Proc. 6th Int. Conf. on Application of Concurrency to System Design (ACSD'06)*, pages 91–100. IEEE Computer Society Press.
- [6] Patricia Bouyer, Nicolas Markey, and Pierre-Alain Reynier. Robust model-checking of linear-time properties in timed automata. In *Proc. 7th Latin American Symposium on Theoretical Informatics (LATIN'06)*, vol. 3887 of *LNCS*, pages 238–249. Springer.
- [7] Patricia Bouyer, François Laroussinie, and Pierre-Alain Reynier. Diagonal constraints in timed automata : Forward analysis of timed systems. In *Proc. 3rd Int. Conf. on Formal Modelling and Analysis of Timed Systems (FORMATS'05)*, vol. 3829 of *LNCS*, pages 112–126. Springer.

## Invited paper

- [8] Karine Altisen, Nicolas Markey, Pierre-Alain Reynier, and Stavros Tripakis. Implémentabilité des automates temporisés. In *Actes du 5ème Colloque sur la Modélisation des Systèmes Réactifs (MSR'05)*, pages 395–406. Hermès.

## Submissions

- [9] Patricia Bouyer, Serge Haddad, and Pierre-Alain Reynier. Undecidability Results for Timed Automata with Silent Transitions. 22 pages. Under review for publication in *Fundamenta Informaticae*.

## Other publications

- [10] Pierre-Alain Reynier. Diagonal Constraints handled efficiently in UppAal. Research Report LSV-07-02. 4 pages. 2007.
- [11] Pierre-Alain Reynier. Vérification de systèmes temporisés et distribués : modèles, algorithmes et implémentabilité. PhD Thesis, Laboratoire Spécification et Vérification, ENS de Cachan, France, June 2007.