

Steven DE OLIVEIRA

PhD Student in formal methods

NAME AND CONTACT

BIRTH France | December, 5th 1991
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WORK EXPERIENCE

<i>Current</i> FEBRUARY 2015	PhD Student in Formal analysis at CEA, List – Palaiseau <i>Specification and verification of temporal properties of C programs</i> Development of the model checking tool CaFE on the Frama-C framework Development of the invariant generator PILAT on the Frama-C framework
MAY 2016	Scientific vulgarisation at the Université Paris-Saclay – Orsay <i>Chemistry in colors</i> Chemistry workshop for elementary school kids about acidity
MARCH 2016 DECEMBER 2015	Teaching assistant at the French Ecole Polytechnique – Palaiseau <i>Concurrent and distributed programming</i> Java Complexity of distributed programs Threads, locks Map-reduce, Hadoop, RMI
FEBRUARY 2016 NOVEMBRE 2015	Teaching assistant at the French Ecole Polytechnique – Palaiseau <i>Web applications</i> HTML, CSS, PHP, Javascript Databases initiation (MySQL) Security, Ajax
DECEMBER 2014 JUNE 2014	Internship at CEA, List – Palaiseau <i>Temporal properties on C programs</i> Development of the temporal properties automatic specifier Aoraï in the Frama-C framework Development of the model checking tool CaFE on the Frama-C framework

PUBLICATIONS

- 2016 | **Synthesizing invariants by solving solvable loops**
De Oliveira Steven, Bensalem Saddek and Prevosto Virgile
Submitted at TACAS 2017
- Polynomial invariants by linear algebra**
De Oliveira Steven, Bensalem Saddek and Prevosto Virgile
In 14th International Symposium on Automated Technology for Verification and Analysis (ATVA 2016)
- Algèbre linéaire pour invariant polynomiaux**
De Oliveira Steven, Bensalem Saddek and Prevosto Virgile (2016, Juin)
In Approches Formelles dans l'Assistance au Développement Logiciel (AFADL 2016)
- 2015 | **Au temps en emporte le C**
De Oliveira Steven, Prevosto Virgile and Bardin Steven (2015, January)
In Vingt-sixièmes Journées Francophones des Langages Applicatifs (JFLA 2015)

DEVELOPPED TOOLS

Polynomial Invariants by Linear Algebra Tool	Loop invariant generator Annotation ACSL generation Matrices and polynomial libraries development Developed in the Frama-C in Ocaml Under LGPL license
Contribution	Full development
Wp for CaRet	Weakest precondition calculus Generation and verification of proof obligations Based on a generalization of ultimately périodic relations Developed in the Frama-C in Ocaml
Contribution	Full development
Caret Frama-c's Extension	Model-checker of C programs Basd on the temporal logic CaRet Developed in the Frama-C in Ocaml
Contribution	Full development
Aoraï	Annotations generator from temporal logic to ACSL Based on the linear temporal logic LTL Developed in the Frama-C in Ocaml Open-source
Contribution	Generation of C code respecting the generated annotations New LTL to Buchi automaton translator

PROGRAMMATION

Good knowledge : OCAML, C, JAVA, LINUX, \LaTeX
Medium knowledge : MatLab, Mathematica, C++, PHP, mysql, HTML, PYTHON, COQ

PRESENTATIONS

- 2016 | **Polynomial invariants by linear algebra**
International Symposium on Automated Technology for Verification and Analysis 2016
Approches Formelles dans l'Assistance au Développement Logiciel 2016
Laboratoire Spécification et Vérification, ENS Cachan
Université Paris 7 - Paris Diderot
Séminaire interne
- How to model-check with uncertainty ?**
Frama-C day 2016 (poster)
- 2015 | **CaFE, a Temporal Logic Model Checker for C programs**
CEA, Leti
Groupe de travail - Vérif 2015(GDR-GPL)
Journée des doctorants du CEA
Séminaire interne
- Frama-C, a framework for modular analysis of C programs**
EJCP 2015 (poster)
- Au temps en emporte le C**
Journées Francophones des Langages Applicatifs 2015
Séminaire interne