

Personal information

Surname(s) / First name(s) **Christophe Calvès**
Email(s) Christophe DOT Calves HAT kcl DOT ac DOT uk
Nationality(-ies) French
Date of birth 1981
Gender Male
Web page <http://www.dcs.kcl.ac.uk/pg/calves>

Mother tongue(s) Self-assessment European level

French

Understanding		Speaking		Writing	
Listening	Reading	Spoken interaction	Spoken production		
C2 Proficient user	C2 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user

English

Education

2010 Doctor of Philosophy degree at **King's College London**
2005 Master degree at the **Parisian Master of Research in Computer Science** [6]
2004 Maitrise degree in Mathematics at the **Paris Diderot University** and *École Normale Supérieure de Cachan*
2003 Pass the first year entrance examination of **École Normale Supérieure de Cachan**
2003 Licence degree in Mathematics at the *Paris Diderot University* and *École Normale Supérieure de Cachan*

Experience

2009 3 months visit at the **Basic Research in Computer Science** [1] PhD school with *Olivier Danvy* on the theory and applications of continuations
2006 - 2009 PhD student of *Dr. Maribel Fernández* at **King's College London**
We study the complexity of nominal unification and matching and their applications to rewriting and programming languages
It is a part of the **CANS** [2] project whose aim is to investigate applications of nominal sets (please refer to the website for more details) programming languages
2005 - 2006 1 year internship with *Dr. Ian Mackie* at **Laboratory for Informatics at Polytechnique School** [4]
2005 5 months internship with *Dr. Maribel Fernández* at *King's College London* on implementation of nominal unification
2004 2 months internship with *Jean-Paul Delahaye* at the **Computer Science Laboratory of Lille** [3] on variants of *The Prisoners' Dilemma*

Publications/Implementations¹

- 2009 Matching and alpha-equivalence check for nominal terms [7] published in *Journal of Computer and System Sciences*
- 2008 An efficient nominal matching and alpha-equivalence algorithm [9] presented at **WOLLIC 2008** and implemented in O’Caml and Haskell
- 2008 A polynomial-time nominal unification algorithm [10] based on graph rewriting published in **Theor. Comput. Sci.** and implemented in O’Caml
- 2007 A nominal unification implementation [8] presented at **TERMGRAPH 2006** implemented in MAUDE [5]

Research interest

- Terms Unification, matching and rewriting especially up to alpha-equivalence (nominal syntax , higher-order patterns)
- Language design and implementation Functional paradigm, rewriting paradigm, typing, meta-programming, domain specific languages
Monads, continuations, higher-order, . . .

Skills

- Theaching I have been teaching assistant at the courses: *Introduction to the Theory of Computation* (1st year of BSc) and *Programming Language Design Paradigms* (2nd year of BSc) at *King’s College London*
- Programming languages Haskell, O’Caml, MAUDE, Coq (beginner)

Employment

- 2007 - 2008 Teaching assistant at *Kings’s College London*
- 2003 - 2006 Civil Servant at *École Normale Supérieure de Cachan*

References

- [1] Basic research in computer science (brics):. <http://www.brics.dk/>
- [2] Computational applications of nominal sets (cans):. <http://www.dcs.kcl.ac.uk/staff/maribel/CANS/publications.shtml>
- [3] Computer science laboratory of lille:. <http://www.lifl.fr/index.en.html>
- [4] Laboratory for informatics at polytechnique school:!. <http://www.lix.polytechnique.fr/en/index.php>
- [5] The maude rewriting system:!. <http://maude.cs.uiuc.edu/>
- [6] Parisian master of research in computer science:!. <http://mpri.master.univ-paris7.fr/english/>
- [7] C. Calvès and M. Fernández. Matching and alpha-equivalence check for nominal terms. *Journal of Computer and System Sciences*, 2009
- [8] Christophe Calvès and Maribel Fernández. Implementing nominal unification. *Electr. Notes Theor. Comput. Sci.*, 176(1):25–37, 2007
- [9] Christophe Calvès and Maribel Fernández. Nominal matching and alpha-equivalence. In Wilfrid Hodges and Ruy J. G. B. de Queiroz, editors, *WoLLIC*, volume 5110 of *Lecture Notes in Computer Science*, pages 111–122. Springer, 2008
- [10] Christophe Calvès and Maribel Fernández. A polynomial nominal unification algorithm. *Theor. Comput. Sci.*, 403(2-3):285–306, 2008

¹The implementations are available at <http://www.dcs.kcl.ac.uk/pg/calves>