Alan Schmitt

29 November 2010

CV

Birth: 02 April 1974 (Nancy, France)
Citizenship: French
Married, three children

Work coordinates

Address:	INRIA Rhône-Alpes, Projet SARDES 655 avenue de l'Europe, ZIRST Montbonnot St Martin, 38334 Saint-Ismier Cedex, France.
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Home coordinates

Address:	1 chemin de la Capuche 38100 Grenoble, France.
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Diplomas

2002	Ph.D. in computer science, Ecole Polytechnique.
1999	DEA in semantics, proofs and programming. "Mention très bien".
1998	Engineer diploma of Ecole Polytechnique (Internship Award in Applied Mathematics).
1993	Baccalauréat série E. "Mention Très bien".
1992	American Highschool Graduation, Lincoln High School, Nebraska.

Education

Oct 1999 – Sep 2002: Ph.D., Moscova Project, INRIA Rocquencourt. "Conception et Implémentation de Calculs d'Agents Mobiles". Supervisor: Jean-Jacques Lévy.

Oct 1998 – Oct 1999: DEA in semantics, proofs and programming, University of Paris VII.

Sep 1996 – Apr 1998: Ecole Polytechnique, major in computer science.

Aug 1991 – May 1992: Senior highscool year, Lincoln High School, Nebraska.

Employment

Jan 2004 – present: Researcher at INRIA Rhône-Alpes, Sardes Project. Experienced researcher (CR1) since January 2005.

Sep 2007 – Aug 2008: Sabbatical at University of Bologna, Italy, to work with Davide Sangiorgi.

Sep 2002 – Jan 2004: Postdoc researcher at University of Pennsylvania, Philadelphia, with Benjamin Pierce, in Xtatic and Harmony projects.

Teaching

Feb – Apr 2010: Course on Bisimulations and Process Calculi, post-graduate level, Université Joseph Fourier.

Jan – Apr 2010: Course on Models of Computation, graduate level, Université Joseph Fourier.

Feb – Mar 2008: Course on type systems and OS, graduate level, University de Bologna.

Research interests

Programming languages and static analyses for component-based distributed systems, including type systems for process calculi and behavioral theory of distributed systems.

Rich type systems for safe XML processing, such as regular types for XML pattern matching and logics to model XPath queries.

Formalization of these two research themes in the Coq proof assistant.

Refereed journal papers

"On the Expressiveness and Decidability of Higher-Order Process Calculi", with Ivan Lanese, Jorge A. Pérez et Davide Sangiorgi. Information and Computation, 2010. To appear.

"Combinators for Bi-Directional Tree Transformations: A Linguistic Approach to the View Update Problem", with J. Nathan Foster, Michael B. Greenwald, Jonathan T. Moore, and Benjamin C. Pierce. ACM Transactions on Programming Languages and Systems (TOPLAS), 29(3):17.

"Exploiting Schemas in Data Synchronization", with J. Nathan Foster, Michael B. Greenwald, Christian Kirkegaard, and Benjamin C. Pierce. Journal of Computer and System Sciences, 73(4), June 2007.

Lecture Notes

"JoCaml: a Language for Concurrent Distributed and Mobile Programming", with Fabrice Le Fessant, Cédric Fournet, and Luc Maranget. Proceedings of the 4th Summer School on Advanced Functional Programming, Oxford, 19-24 August 2002. LNCS. Springer Verlag. November 2002.

Major refereed conference papers

"On the Expressiveness of Polyadic and Synchronous Communication in Higher-Order Process Calculi", with Ivan Lanese, Jorge A. Pérez, and Davide Sangiorgi. *Proceedings of the 37th International Colloquium on Automata, Languages and Programming (ICALP 2010)* (Bordeaux, France, June 2010).

"Howe's Method for Calculi with Passivation", with Sergueï Lenglet and Jean-Bernard Stefani. *Proceedings of the 20th International Conference on Concurrency Theory (CONCUR 2009)* (Bologna, Italy, September 2009). LNCS 5710, pages 448–462.

"On the Expressiveness and Decidability of Higher-Order Process Calculi", with Ivan Lanese, Jorge A. Pérez, and Davide Sangiorgi. *Proceedings of the 23rd Annual IEEE Symposium on Logic in Computer Science (LICS 2008)* (Pittsburgh, Pennsylvania, USA, June 2008). Pages 145-155.

"Boomerang: Resourceful Lenses for String Data", with Aaron Bohannon, J. Nathan Foster, Benjamin C. Pierce, and Alexandre Pilkiewicz. *ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'08)* (San Francisco, California, January 2008). Pages 407–419.

"Efficient Static Analysis of XML Paths and Types", with Pierre Genevès and Nabil Layaïda. *Proceedings of PLDI 2007* (San Diego, USA). Pages 342-351.

"Agreeing to Agree: Conflict Resolution for Optimistically Replicated Data", with Michael B. Greenwald, Sanjeev Khanna, Keshav Kunal, and Benjamin C. Pierce. *Proceedings of 20th International Symposium on Distributed Computing (DISC), Stockholm, Sweden, September 2006*. LNCS 4167, pages 269-283.

"Combinators for Bi-Directional Tree Transformations: A Linguistic Approach to the View Update Problem", with J. Nathan Foster, Michael B. Greenwald, Jonathan T. Moore, et Benjamin C. Pierce. *Proceedings of POPL 2005* (Los Angeles, USA). Pages 233-246.

"The M-calculus: a higher-order distributed process calculus", with Jean-Bernard Stefani. *Proceedings of POPL 2003* (New Orleans, USA). Pages 50–61.

Refereed conference papers

"Typing Component-Based Communication Systems" with Michaël Lienhardt, Claudio Antares Mezzina, and Jean-Bernard Stefani. *Proceedings of the 11th Formal Methods for Open Object-Based Distributed Systems (FMOODS) & 29th Formal Techniques for Networked and Distributed Systems (FORTE)* (Lisbon, Portugal, June 2009). LNCS 5522, pages 167–181.

"Normal bisimulations in process calculi with passivation", with Sergueï Lenglet and Jean-Bernard Stefani. *Proceedings of the 12th International Conference on Foundations of Software Science and Computational Structures (FOSSACS 2009)* (York, Royaume Uni, March 2009). LNCS 5504, pages 257–271.

"Typing Communicating Component Assemblages", with Michaël Lienhardt and Jean-Bernard Stefani. *Proceedings of the 7th International Conference on Generative Programming and Component Engineering (GPCE'08)* (Nashville, Tennessee, USA). Pages 125-136.

"Oz/K: A Kernel Language for Component-Based Open Programming", with Michaël Lienhardt and Jean-Bernard Stefani. *ACM, editor, 6th International Conference on Generative Programming and Component Engineering (GPCE'07)* (October 2007). Pages 43–52.

"Component-Oriented Programming with Sharing: Containment is not Ownership", with Daniel Hirschkoff, Tom Hirschowitz, Damien Pous, and Jean-Bernard Stefani. *Proceedings of Generative Programming and Component Engineering (GPCE) 2005*. LNCS 3676, pages 389–404.

"Exploiting Schemas in Data Synchronization", with J. Nathan Foster, Michael B. Greenwald, Christian Kirkegaard, and Benjamin C. Pierce. *Proceedings of Database Programming Languages (DBPL) 2005*.

"An Abstract Machine for the Kell Calculus", with Philippe Bidinger, and Jean-Bernard Stefani. *Proceedings of Formal Methods for Object-Based Distributed Systems (FMOODS) 2005*. LNCS 3535, pages 31–46. This paper received the "Best Paper Award".

"XML goes native: Run-time representations for Xtatic", with Vladimir Gapeyev, Michael Y. Levin, and Benjamin C. Pierce. *Proceedings of Compiler Construction (CC) 2005*. LNCS 3443, pages 43–58.

"Safe Dynamic Binding in the Join Calculus". *Proceedings of the International IFIP Conference TCS 2002* (Montréal, Canada). Kluwer IFIP96, pages 563–575.

"An Asynchronous, Distributed Implementation of Mobile Ambients", with Cédric Fournet and Jean-Jacques Lévy. *Proceedings of the International IFIP Conference TCS 2000* (Sendai, Japan). LNCS 1872, pages 348–364.

Software

Camlgrenouille and coregrenouille, multi-platform clients for `http://grenouille.com/` (main developper).

Harmony and boomerang, bidirectional languages (collaborator). `http://www.cis.upenn.edu/~bcpierce/harmony/`

Unison, a file system synchronizer (collaborator). `http://www.cis.upenn.edu/~bcpierce/unison/`

Xtatic, an extension of C# for type safe XML manipulation (experimental, collaborator). `http://www.cis.upenn.edu/~bcpierce/xtatic/`

Patents

" Information services provision in a telecommunications network", with Ronnie Taib and Bernard Burg. European patent EP1069792. USA patent US6512922.

Invited talks

Xtatic : "Foundations of Object-Oriented Languages" workshop, Venice, Italy, 2004.

Harmony : "XML and Data Binding" workshop, Avaya Labs, USA, 2003; Ecole Polytechnique, Palaiseau, France, 2005; "Programmable Structured Documents" workshop, Tokyo, Japan, 2005.

Higher Order Calculi : CONFER 2, Paris, France, 1999; Microsoft Research seminar, Cambridge, UK, 2000; PPS seminar, Paris, France, 2001, 2002, 2009; PL Club, University of Pennsylvania, USA, 2003, 2008; Global Computing workshop, Venice, Italy, 2004; INRIA-Microsoft seminar, Saclay, France, 2009.

Type Systems : ICAR summer school, Autrans, France, 2006; CPR seminar, Paris, France, 2007; University of Bologna seminar, Italy, 2007.

Conference organization

Vingtièmes journées francophones des langages applicatifs (JFLA 2009).

Ocaml Meeting 2009 (local organizer).

Project coordination

Coordinator of the ANR Blanc project PiCoq (2010–2014).

Member of the steering committee for the Journées Francophones des Langages Applicatifs (JFLA) since 2010.

Coordinator of the Associated Team BACON with University of Bologna (2008).

Program committees

Journées Francophones des Langages Applicatifs (JFLA): 2006, 2007, 2008 (vice president), 2009 (president), 2010. Types workshop: 2009. International Symposium on Database Programming Languages (DBPL): 2005, 2009. ACM SIGPLAN International Conference on Functional Programming (ICFP): 2008. Symposium on Trustworthy Global Computing (TGC): 2007. Programming Language Techniques for XML (PLAN-X): 2007.

Other

Foreign languages: English: fluent. Italian: good notions.

Programming languages: Objective Caml, C, Java, C#.

Competition: Member of the team "Camls R'Us", which came in first place in the ICFP Programming Contest 1999, and in second place in the ICFP Programming Contest 2000.