

Louis-Noël Pouchet
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French, age: 28

PhD candidate in Computer Science

EDUCATION

- 2006–...** ✓ **Ph.D candidate in Computer Science, INRIA Futurs / University of Paris-Sud XI**, ALCHEMY group, *Sampling and Operation Research in the space of affine schedules, for program parallelization and optimization*, advised by Albert Cohen and Cédric Bastoul. Expected in Oct. 2009
- 2005–2006** ✓ **M.S. in Computer Science, University of Paris-sud XI**, majoring in COGNITIVE SCIENCES, with highest honors
- 2001–2006** ✓ **French Graduate Engineering Degree from École Pour l'Informatique et les Techniques Avancées (le Kremlin-Bicêtre)**, majoring in SCIENTIFIC COMPUTING AND IMAGE PROCESSING, with highest honors

RESEARCH

- 2007** ✓ **IMEC (Leuven, Belgique)**, three months visit on ITERATIVE AND AUTOMATIC PARALLELIZATION IN THE POLYHEDRAL MODEL, HiPEAC grant, hosted by Arnout Vandecappelle
- 2006** ✓ **ALCHEMY, LRI - INRIA Futurs (Orsay)**, M.S. internship *Systematic exploration of the affine scheduling space of a program for its parallelization and optimization*, advised by Albert Cohen and Cédric Bastoul
- 2004–2005** ✓ **ÉPITA Research and Development Laboratory – LRDE (le Kremlin-Bicêtre)**, student researcher, under the direction of Akim Demaille, Jacques Sakarovitch and Sylvain Lombardy
- Research project : VAUCANSON, a finite state machine library
 - Research interests : new programming paradigms, static programming in C++, (finite) automata theory
- 2004** ✓ **École Nationale Supérieure des Télécommunications (Paris)**, 3 months internship *Graphical Interface and XML for the Vaucanson Library*, advised by Jacques Sakarovitch

Research interests

- Program optimization in the polyhedral model
- Machine learning
- New programming paradigms, meta-programming in C++

PUBLICATIONS

- (1) Louis-Noël Pouchet.
An interpreter for Vaucanson.
Technical report, EPITA Research and Development Laboratory Seminars, Le Kremlin-Bicetre, France, 2004.
- (2) Thomas Claveirole, Sylvain Lombardy, Sarah O'Connor, Louis-Noël Pouchet, and Jacques Sakarovitch.
Inside vaucanson.
In Jacques Farré, Igor Litovsky, and Sylvain Schmitz, editors, *Implementation and Application of Automata, 10th International Conference (CIAA'05), Sophia Antipolis, France, June 27-29, 2005, Revised Selected Papers*, volume 3845 of *Lecture Notes in Computer Science*, pages 116–128. Springer, 2006.

PUBLICATIONS (continued)

- (3) Louis-Noël Pouchet.
When iterative optimization meets the polyhedral model : One-dimensional date.
Master's thesis, University of Paris-Sud 11, Orsay, France, 2006.
- (4) Louis-Noël Pouchet, Cédric Bastoul, and Albert Cohen.
Iterative optimization in the polyhedral model : the one-dimensional affine scheduling case.
2nd HiPEAC Industrial Workshop, Eindhoven, the Netherlands, October 2006.
- (5) Louis-Noël Pouchet, Cédric Bastoul, Albert Cohen, and Nicolas Vasilache.
Iterative optimization in the polyhedral model : Part I, one-dimensional time.
In *Fifth International Symposium on Code Generation and Optimization (CGO'07)*, pages 144–156, San Jose, California, March 2007. IEEE Computer Society Press.
- (6) Louis-Noël Pouchet, Cédric Bastoul, and Albert Cohen.
LetSee : the LEgal Transformation SpacE Explorer.
Third International Summer School on Advanced Computer Architecture and Compilation for Embedded Systems (ACACES'07), L'Aquila, Italia, July 2007.
Extended abstract, pp 247–251.
- (7) Nicolas Vasilache, Albert Cohen, and Louis-Noël Pouchet.
Automatic correction of loop transformations.
In *16th International Conference on Parallel Architecture and Compilation Techniques (PACT'07)*, pages 292–304, Brasov, Romania, September 2007. IEEE Computer Society Press.
- (8) Louis-Noël Pouchet, Cédric Bastoul, John Cavazos, and Albert Cohen.
A note on the performance distribution of affine schedules.
2nd Workshop on Statistical and Machine learning approaches to ARchitectures and compilaTion (SMART'08), Göteborg, Sweden, January 2008.
- (9) Louis-Noël Pouchet, Cédric Bastoul, Albert Cohen, and John Cavazos.
Iterative optimization in the polyhedral model : Part II, multidimensional time.
In *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'08)*, pages 90–100, Tucson, Arizona, June 2008. ACM Press.
- (10) K. Ibrahim, J. Jaeger, Z. Liu, L.N. Pouchet, P. Lesnicki, L. Djoudi, D.Barthou, F. Bodin, C. Eisenbeis, G. Grosdidier, O. Pene, and P. Roudeau.
Simulation of the lattice qcd and technological trends in computation.
14th Workshop on Compilers for Parallel Computing (CPC'09), Zurich, Switzerland, January 2009.

EXPERIENCE

Teaching

- 2008 ✓ Components of computing systems (27h, labs), for 2nd year students (equiv. 4rd year University students) at Ecole Polytechnique (Palaiseau)
- 2007 ✓ System programming in C/UNIX (32h), for final year students (equiv. 2nd year University students) at IUT Informatique (Orsay)
- 2005 ✓ C/Unix (60h, labs), for 1st year students (equiv. 3rd year University students) at EPITA (Le Kremlin-Bicetre)
✓ Object Oriented programming (15h), for 1st year students (equiv. 3rd year University students) at EPITA (Le Kremlin-Bicetre)
- 2004 ✓ C/Unix (60h, labs), for 1st year students (equiv. 3rd year University students) at EPITA (Le Kremlin-Bicetre)

Computer Engineering

- 2002–2005 ✓ Association Cristal (EPITA, le Kremlin-Bicêtre)
Several short term projects, mainly web development and consulting

EXPERIENCE (continued)

- 2002** ✓ **General Mechanics** (Emerainville)
Fully in charge of a commercial web site project (3 months)
- 2001** ✓ **General Mechanics** (Emerainville)
In charge of the company's web site restructuration (2 months)
- 2000** ✓ **SAPRR** (Dijon)
Technical assistant, administrator of the GCOS server, software developer (6 months)
- 1999–2002** ✓ Several short term projects, mainly web developments

TECHNICAL KNOWLEDGE

- Languages** ✓ **C++** : advanced generic programming and meta-programming, STL, ...
 ✓ **C** : system programming under Unix / BSD.
 ✓ **Script** : Shell, Perl, Python, PHP.
 ✓ **Other** : Delphi, Java, OCaml, C#.
 ✓ **Internet** : ASP.Net, ASP, Javascript, DHTML, HTML.
- Operating Systems** ✓ Unix / Linux (BSD, Debian), Windows NT/2000/2003.
- Tools** ✓ IIS, Apache, MySql, SQLServer, Visual Studio, CVS, SVN, LaTeX, Autotools.

OTHER

- Languages** ✓ Fluent in French (mother tongue) and English
- Sports** ✓ 7 years of Volley-ball