Detailed Curruculum Vitæ

Florian Letombe

1 Personal Details

Nationality	French
Age	34 years old (October, the 16^{th} of 1979)
Birth place	Arras (Pas-de-Calais, France)
Work address	Synopsys Eurennepolis, 6, place Robert Schuman 38000, Grenoble, France
Phone number	+33 (0)4 76 43 98 53 (office)
E-mail	florian.letombe@synopsys.com
Web page	`http://f.letombe.free.fr`
Function	R&D Engineer at Synopsys
Foreign languages	820 points to the TOEIC in 2006 Fluent English Basic Spanish
Hobbies	Competitive handball (since 1989) Board of trustees of handball club (since 2011) Webmaster of `http://emhb.free.fr` Literature Animator in recreation centers from 1997 to 2002 Creator, treasurer of a recreation centers association Sing in a chorale from 1991 to 2001

2 Program of Study

2002-2005 **PhD in computer science**
Université d'Artois - Laboratory : Centre de Recherche en Informatique de Lens (CRIL)
Title : "The validity problem for quantified Boolean formulae : complexity study and tractable classes exploitation in a QBF solver" (in french)
Supervisors : Sylvie Coste-Marquis, Daniel Le Berre and Pierre Marquis (PhD supervisor)
Defensed 13 December 2005 (Summa cum laude)

2002 **Master's degree (DEA) in computer science**
Université des Sciences et Technologies de Lille - Laboratory : CRIL
Master thesis : "Implicit representations in propositional logic" (in french)
Supervisors : Sylvie Coste-Marquis, Daniel Le Berre and Pierre Marquis (cum laude)

2001 **French master's degree in computer science**
Université d'Artois - Laboratory : CRIL
French Master thesis : "Algorithms implantation founded on decomposable negation normal forms of propositional formulae" (in french)
Supervisors : Sylvie Coste-Marquis and Pierre Marquis (cum laude)

2000 **Bachelor's degree in computer science**
Université d'Artois (cum laude)

1999 **Ordinary Degree in Mathematics and Computer Science (French DEUG MIAS)**
Université d'Artois

1997 **Scientific Baccalauréat (equivalent to a High-School Leaving Certificate)**
Lycée Baudimont in Arras (62)

3 Work Experience

June 2008 Research and Development Engineer at Synopsys (formerly Certess and SpringSoft).
Keywords : functional qualification, mutation analysis, electronic design automation, code coverage, functional verification, embedded software.

2007-2008 Research Fellow at the University of Southampton, with EPSRC (Engineering and Physical Sciences Research Council) collaboration.
Subject : "NOTOS : New algOrithm for LTL mOdel checking with Satisfiability".

2005-2007 Assistant professor in computer science at the Université d'Artois (IUT de Lens).

2002-2005 Teaching assistant at CIES Nord - Pas de Calais - Picardie.
PhD student funded by a grant from the French Ministry of Research.
Keywords : quantified Boolean formulae, propositional logic, knowledge compilation, tractable restrictions, complexity, branching heuristics.

2002 5 months training class in master's degree in the CRIL.
Keywords : Propositional logic, implicit representation, implicants, implicates, Binary Decision Diagrams (BDDs), Meta-Products.

2001 4 months training class in master in the CRIL.
Keywords : Propositional logic, Decomposable Negation Normal Forms (DNNFs).

4 Publications, Seminars, and Reviews

Papers in international journals :

[1] F. Letombe, and J. Marques-Silva, "Hybrid Incremental Algorithms for Boolean Satisfiability", International Journal on Artificial Intelligence Tools (IJAIT), **21**(06), 2012.

[2] S. Coste-Marquis, D. Le Berre, F. Letombe, and P. Marquis, "Complexity Results for Quantified Boolean Formulae Based on Complete Propositional Languages", Journal on Satisfiability, Boolean Modeling and Computation (JSAT), **1**:61–88, 2006.

International Conferences :

[3] T. Xie, W. Müller, and F. Letombe, "Mutation-Analysis Driven Functional Verification of a Soft Microprocessor", In IEEE International System on Chip Conference (SoCC'12), p. 283–288, 2012.

[4] S. Bouvier, N. Sauzède, F. Letombe, and J. Torrès, "A Practical Approach to Measuring and Improving the Functional Verification of Embedded Software", In Design & Verification Conference (DVCon'12), 2012.

[5] T. Xie, W. Müller, and F. Letombe, "IP-XACT based System Level Mutation Testing", In IEEE International High Level Design Validation and Test Workshop (HLDVT'11), p. 65–71, 2011.

[6] T. Xie, W. Müller, and F. Letombe, "HDL-Mutation Based Simulation Data Generation by Propagation Guided Search", In Euromicro Conference on Digital System Design (DSD'11), p. 608–615, 2011.

[7] T. Xie, W. Müller, and F. Letombe, "Efficient Mutation-Analysis Coverage for Constrained Random Verification", In IFIP 21st World Computer Congress, TC10 Working Conference on Distributed and Parallel Embedded Systems (DIPES'10), p. 114–124, 2010.

[8] G. Di Guglielmo, F. Fummi, G. Pravadelli, M. Hampton, and F. Letombe, "On the Functional Qualification of a Platform Model", In IEEE International Symposium on Defect and Fault Tolerance in VLSI Systems (DFT'09), p. 182–190, 2009.

[9] N. Bombieri, F. Fummi, M. Hampton, F. Letombe, and G. Pravadelli, "Functional Qualification of TLM Verification", Special session for Conference on Design, Automation & Test in Europe (DATE'09), p. 190–195, 2009.

[10] P. Matos, J. Planes, F. Letombe, and J. Marques-Silva, "A MAX-SAT Algorithm Portfolio", In European Conference on Artificial Intelligence (ECAI'08), p. 911–912, 2008 (Poster).

[11] F. Letombe and J. Marques-Silva, "Improvements to Hybrid Incremental SAT Algorithms", In International Conference on Theory and Applications of Satisfiability Testing (SAT'08), LNCS 4996, p. 168–181, 2008.

[12] S. Coste-Marquis, D. Le Berre, F. Letombe, and P. Marquis, "Propositional Fragments for Knowledge Compilation and Quantified Boolean Formulae", In National Conference on Artificial Intelligence (AAAI'05), p. 288–293, 2005.

[13] S. Coste-Marquis, D. Le Berre, and F. Letombe, "A Branching Heuristic Directed to Renamable Quantified Horn Formulas", In International Conference on Theory and Applications of Satisfiability Testing (SAT'05), LNCS 3569, p. 393–399, 2005 (Poster).

National Conferences :

[14] F. Letombe et B. Zanuttini, "Une approche DLPP pour l'abduction", In Journées Francophones de Programmation par Contraintes (JFPC'07), p. 11–20, 2007.

[15] F. Letombe, "Deux fragments polynomiaux complets pour le problème de la validité des formules booléennes quantifiées", In Journées Francophones de Programmation par Contraintes (JFPC'06), p. 387–396, 2006.

[16] S. Coste-Marquis, D. Le Berre, F. Letombe, and P. Marquis, "Fragments propositionnels pour la compilation de connaissances et formules booléennes quantifiées", In Congrès Francophone AFRIF-AFIA Reconnaissance des Formes et Intelligence Artificielle (RFIA'06), 2006.

[17] F. Letombe, "Une heuristique de branchement dirigée vers les formules Horn renommables quantifiées", In Rencontres des Jeunes Chercheurs en Intelligence Artificielle (RJCIA'05), p. 183–196, 2005.

Dissertations :

[18] F. Letombe, "De la validité des formules booléennes quantifiées : étude de complexité et exploitation de classes traitables au sein d'un prouveur QBF", PhD, Centre de Recherche en Informatique de Lens, CNRS FRE 2499, defensed 13 December 2005.

[19] F. Letombe, "Représentations implicites en logique propositionnelle", Master Thesis, Centre de Recherche en Informatique de Lens, CNRS FRE 2499, 2002.

Technical reports :

[20] F. Letombe, Miscellaneous specifications for the Certitude^{TM} tool, Verification Group, Synopsys, since 2008.

[21] F. Letombe, "Algorithmique pour les Formules Booléennes Quantifiées", Centre de Recherche en Informatique de Lens, CNRS FRE 2499, 2003.

[22] F. Letombe, "Classes polynomiales pour les Formules Booléennes Quantifiées", Centre de Recherche en Informatique de Lens, CNRS FRE 2499, 2004.

Conferences :

I have presented my works during national and international following conferences :

— international conferences : AAAI'05 in Pittsburgh (Pensylvania, USA), SAT'08 in Guangzhou (P. R. China), DATE'09 in Nice (France),

— national conferences : RJCIA'05 in Nice, RFIA'06 in Tours, JFPC'06 in Nîmes.

Seminars :

— Miscellaneous Certitude^{TM} tool features, Verification Group, Synopsys, since 2008.

— "Improvements to Hybrid Incremental SAT Algorithms", DSSE, Southampton, 2008.

— "The validity problem for quantified Boolean formulae : complexity study and tractable classes exploitation in a QBF solver", DSSE, Southampton, 2007.

— "Formules booléennes quantifiées et problèmes d'abduction", GREYC (Caen), LIRMM (Montpellier), LIFO (Orléans), 2007.

— "Algorithmique pour les Formules Booléennes Quantifiées", Centre de Recherche en Informatique de Lens, CNRS FRE 2499, Paris, 2003. As part of the Action Spécifique n°83 of the STIC department of the CNRS during the year 2002-2003.

— "Classes polynomiales pour les Formules Booléennes Quantifiées", Centre de Recherche en Informatique de Lens, CNRS FRE 2499, Lens, 2004.

Papers reviewing :

EUC'14 Member of the technical programme committee for the 12th IEEE/IFIP International Conference on Embedded and Ubiquitous Computing.

DATE'12-14 Member of the technical programme committee for the 15th to 17th Conferences on Design, Automation & Test in Europe.

DATE'08-09 Reviewer for the 11th and 12th DATE Conferences.

ICFEM'08 Reviewer for the 10th International Conference on Formal Engineering Methods.

JFPC'08 Reviewer for the 4èmes Journées Francophones de Programmation par contraintes.

RJCIA'07 Member of the programme committee of the 8èmes Rencontres nationales des Jeunes Chercheurs en Intelligence Artificielle.

IRI'06 Reviewer for 2006 IEEE International Conference on Information Reuse and Integration.

5 Teaching Activities

During two years, I was assistant professor (ATER) at the IUT de Lens (Université d'Artois) in the department Services et Réseaux de Communication (SRC). During my three PhD thesis years, I have been teaching at the Faculté des Sciences Jean Perrin de Lens (Université d'Artois) as teaching assistant as monitor of higher education. At last, I have been teaching as temporary employee (vacataire) during my training class in master's degree (french DEA). The following table synthesize my teaching activities.

Assistant professor Years 2005–2006 and 2006–2007			
Formation	**Matter**	**Type**	**Hours**
SRC 1^{st} Year	Algorithmic	CM TD TP	36h 96h 64h
SRC 1^{st} Year	Operating systems and Computers architecture	CM TD TP	9h 12h 16h
SRC 2^{nd} Year	Object-oriented programming	CM TD TP	18h 12h 28h
		Total :	291h

Monitor Years 2002–2003 to 2004–2005			
Formation	**Matter**	**Type**	**Hours**
LMI 3^{rd} Year	Algorithmic	TP	16h
LMI 1^{st} Year	Programming in Scheme	TD TP	24h 28h
LMI 2^{nd} Year	Programming in Pascal	TP	20h
LMI 1^{st} Year	Programming in Pascal	TD TP	22h 43h
DEUG SV 1^{st} Year	Programming en Maple	TD TP	20h 20h
		Total :	193h

Temporary employee Year 2001–2002			
Formation	**Matter**	**Type**	**Hours**
DEUG MIAS 1^{st} Year	Programming in Pascal	TP	40h
DEUG SV 1^{st} Year	Office software	TP	8h
		Total :	48h

6 Grants and Collective Responsibilities

DATE'14 Co-Chair of the "System-level evaluation" session for DATE'14 (17^{th} Conference on Design, Automation & Test in Europe) in Dresden, Germany, March 2014.

Certitude technical brief Participation in writing "Functional Qualification Technical Brief" by Certess Inc. CTO Mark Hampton , published in The EDA DesignLine (`http://www.edadesignline.com/215600203`).

Mutation Testing Online (`http://www.mutationtest.net`) Participation to web site administration and animation. Editorials redaction for registered members.

Coconut project (`http://coconut-project.edalab.it`) Participation to the Coconut (A COrrect-by-CONstrUcTion Workbench for Design and Verification of Embedded Systems) European project meetings, first for the University of Southampton (slide show on "SAT & Model Checking in Coconut"), and then for Certess, organisation of partners interactions with Certess, responsible for Certess deliverables and work packages.

Vertigo project (`http://www.vertigo-project.eu`) Involved in the Vertigo European project : Verification and Validation of Embedded System Design Workbench.

Notos project (`http://gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/E012973/1`) Involved in the Notos EPSRC project : New algOrithm for LTL mOdel checking with Satisfiability.

Miscellaneous events Participation to the differents "tremplins d'automne" which aim at showing to college students opportunities in computer science. I have also animated a "journée à Science en Fête", explaining to primary students in a playful way some applications (ants colonies, travelling salesman problem, ...).

Exams/Juries Supervision of exams and diverse juries for teaching activities.

JFPC'05 Member of the organization committee of JFPC'05 (Premières Journées Francophones de Programmation par Contraintes) in Lens in June 2005.

Board of laboratory Elected member of the board of laboratory from January to June, 2007 representing post-docs and substitute elected member of the board of laboratory representing PhD students from 2003 to 2006.

7 Programming skills

— Qt library,
— svn and Perforce revision control systems,
— Features developing for Certitude$^{\text{TM}}$ in C++ under KDevelop and Qt Creator environments,
— Scripts and algorithms developing for Certitude$^{\text{TM}}$ in TCL,
— SAT solver **Hinotos** in C++ language,
— Abduction problems solver **Zlas**, in collaboration with B. Zanuttini, in C++ language,
— QBF solver **Qbfl** in C language,
— Use of the BDD library **CUDD** from the University of Colorado,
— Java, Maple, Scheme, shell languages...