

# Philippe Dumont

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Nationality: French

Marital status: Married

Driving licence



## EXPERT IN PARALLEL PROGRAMMING

### EXPERIENCE

- May 2013 **Personal sabbatical**  
Creation and development of a website dedicated to pastry, study of German
- Apr 2012 **Guest researcher** at the University of Kaiserslautern, Germany
- Dec 2010 Consultant on parallel programming in the Microelectronic Systems Design Research Group  
Initiator and supervisor of collaborations with the local Fraunhofer institute  
*MPSoc, virtual platform, high-level synthesis, OpenMP*
- Sep 2010 **Teaching assistant** at école Polytechnique, Paris area, France
- Sep 2009 Creation and supervision of exercises done by students  
*Operating systems: introduction and advanced concepts for Linux and Android*
- Sep 2010 **PostDoc** at NXP Semiconductors, Eindhoven, the Netherlands and INRIA, Paris, France
- Sep 2006 Research and development on domain-specific languages for streaming applications  
*Synchronous languages, dataflow model, runtime system*
- Sep 2006 **Research engineer** at the University of Lille 1, France
- Mar 2006 System administration in high availability environment  
*Shell programming, Oracle database*
- Aug 2005 **Ater (teaching and research assistant)** at the University of Lille 1, France
- Sep 2003 Proposition and supervision of 15 projects in Master  
Supervision of exercises done by students  
*Linux administration, C and shell programming, operating systems, networking*

### ACADEMIC BACKGROUND

- Dec 2005 **PhD in Computer Science**, University of Lille 1 (LIFL-INRIA), France  
*Title: Multidimensional specification for systematic signal processing*  
Model, optimize and simulate ArrayOL, a model of computation for radar and sonar applications  
*dataflow, code transformation, multidimensional dependencies, loop fusions*
- Jun 2001 **Master in Computer Science**, University of Bordeaux 1 (LaBRI), France
- Jun 1999 **Bachelor in Computer Science**, University of Limoges, France
- Jun 1996 **French Baccalauréat** (Equivalent A levels - Major in science)

### RESEARCH

**Topic:** High level parallelization thanks to model of computations (MOCC)

**Goal:** Deterministic behavior, portability of performance, optimization

**Main theoretical aspect:** Dataflow model (SDF, KPN), Synchronous model

**Main technologies:** low level: futexes, pthreads, high level: OpenMP, architectures: x86, ARM, Cell

## POSTDOC

### PostDoc of 4 years at NXP (Philips Semiconductors) and INRIA

Collaboration with Prof. [Albert Cohen](#) (INRIA) and Dr. Marc Duranton (NXP)

|                  |   |
|------------------|---|
| <b>Objective</b> | Ease the programming, compilation and optimization of stream-based multimedia applications (JPEG, H264)   |
| <b>Overview</b>  | Creation of a deterministic and concurrent programming model (implemented in GCC)<br>Development of a runtime library (C+Pthread) to provide portability of performance |

## PHD THESIS

### Multidimensional specification for systematic signal processing.

Thesis performed at the LIFL in the INRIA DART team under the supervision of Prof. [Pierre Boulet](#).

Defended on the 15th of December 2005 with high honours.

|                  |  |
|------------------|--|
| <b>Objective</b> | Specify, optimize and simulate Array-OL, a model of computation for radar and sonar applications developed and used by Thales  |
| <b>Overview</b>  | Modeling: Use of Java and Jogl to specify and visualize data dependencies in 3D<br>Optimization: Development of a transformation and optimization engine in Java<br>Simulation: Development of a Ptolemy II plugin in Java |

*Publications list available on my [website](#).*

## TECHNICAL SKILLS

|                                  |   |
|----------------------------------|---|
| <b>Procedural Languages</b>      | Pascal, Ada, C<br><i>C: used daily and taught to Bachelor's students for 2 years.</i>   |
| <b>Object Oriented Languages</b> | Objective C, C++, Java<br><i>Java: several developments during my thesis.</i>   |
| <b>Parallel programming</b>      | Pthread, MPI, OpenMP<br><i>Pthread: used daily and taught many times.</i>   |
| <b>Other languages and API</b>   | Shell, Ruby, UML<br><i>Shell: used daily and taught to Bachelor's students.</i>   |
| <b>Web Developments</b>          | (X)HTML, PHP, SQL, Javascript/ECMAScript, CSS, DOM<br><i>Creation of a website dedicated to pastry</i>                                    |
| <b>OS</b>                        | Unix/BSD, Linux, Android, Microsoft Windows<br><i>Linux: teaching of system administration and operating system to Master's students.</i> |
| <b>Tools</b>                     | L <sup>A</sup> T <sub>E</sub> X, emacs, Eclipse   |

## MISCELLANEOUS INFORMATIONS

### LANGUAGES

|                |   |
|----------------|---|
| <b>French</b>  | Mother tongue   |
| <b>English</b> | Full professional proficiency ( <i>Used daily in professional environment for more than 5 years</i> ) |
| <b>German</b>  | Elementary proficiency ( <i>Living in Germany for 2.5 years</i> )                                     |

### ACTIVITIES

|                    |  |
|--------------------|--|
| <b>Baking</b>      | Like to cook: cakes, pies, creams and other sweet things<br>Many recipes are available on my <a href="#">website</a> |
| <b>Photography</b> | Interested in photography as a way for self expression<br>Public gallery available on <a href="#">500px</a>          |