

Floréal Morandat

PhD, Computer Science

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Education

- 2006-2010 **PhD in Computer Science**, *University of Montpellier II (honors)*.
Funded by a MNRT allocation (competitive admission process) and teaching fellow position in University of Montpellier II.
- 2005-2006 **MSc in Computer Science**, *University of Montpellier II (honors)*.
Major: Software Engineering & Compilation, Minor: Artificial Intelligence & Multi-Agent Systems.
- 2003-2004 **BSc in Computer Science**, *University of Montpellier II (honors)*.
- 2000-2003 **Two years degree in Mathematics & Computer Sciences**, *University of Montpellier II*.
(DEUG MIAS) Major: Algorithmic, Algebra, Functional programming.
- 2000 **French “Baccalauréat”**, *Lycée J. Mermoz, Montpellier (honors)*.
Scientific specialization (Mathematics, Physics, Electronic, Mechanic).

PhD Thesis

- title *Contribution à l'efficacité de la programmation par objets :
Evaluation des implémentations de l'héritage multiple en typage statique*
- affiliation Laboratoire Informatique, Robotique et Microélectronique de Montpellier — LIRMM,
CNRS & University of Montpellier II, D'OC Research team.
- supervisor Pr Roland DUCOURNAU, *University of Montpellier II*.
- comittee Dr Pascal GIORGI, Pr Jean PRIVAT, Pr Manuel SERRANO, Pr Peter VAN ROY, Pr Jan VITEK &
Dr Olivier ZENDRA
- description This thesis focuses on common implementation techniques compatible with multiple inheritance and a new promising alternative, *perfect class hashing*. Different compilation schemes are considered, from open world assumption to closed world assumption. These techniques and schemes are implemented in the PRM bootstrapped compiler. Efficiency influence of all these artifacts have been tested with a rigorous meta-compilation experimental protocol.

Research Interest

- keywords Software Engineering, Language Design & Implementation & Compilation, Object Programming
- I'm interested in language design and their efficient implementation. After starting investigating how to efficiently implement objected oriented languages with multiple inheritance and static typing — compilers, interpreters, virtual machines — at the LIRMM, I'm now focusing on highly dynamic languages at Purdue University.

Professional Experience

- 2011 - ... **PostDoctoral Research Fellow**, *SSS Team, CS Dept. Purdue University IN, USA*.
- 2009 - 2010 **Teacher Assistant (ATER 50%)**, *University of Montpellier I*.
- 2006 - 2009 **Research Assistant**, *LIRMM, CNRS & University of Montpellier II*.
- 2006 - 2009 **Teacher Assistant (Moniteur)**, *University of Montpellier II*.
- 2001 **Developer**, *Carrefour, Saint Jean de Védas*.
- 2001 **Developer**, *NetMobil, Montpellier*.
- 2000 **Developer**, *Codeline, Montpellier*.

Grants & Awards

2006 - 2009 **MNRT doctoral grant**, French Research Ministry Beneficiary, *University of Montpellier II*, 60 000 €. Three years funding (competitive admission process)

Publications

- 2011 **Towards a Full Multiple-Inheritance Virtual Machine**
Ducournau R., Morandat F.
Journal of Object Technology. (to appear)
- 2011 **Perfect Class Hashing and Numbering for Object Oriented Implementation**
Ducournau R., Morandat F.
Software : Practice and Experience, 41(6): 661–694.
- 2010 **Empirical Assessment of C++-Like Implementation for Multiple Inheritance**
Morandat F., Ducournau R.
ICOOOLPS'10: ECOOP Workshop on the Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems, Slovenia
- 2010 **Towards a Full Multiple-Inheritance Virtual Machine**
Ducournau R., Morandat F.
ICOOOLPS'10: ECOOP Workshop on the Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems, Slovenia
- 2010 **Évaluation de l'efficacité des implémentations de l'héritage multiple en typage statique**
Morandat F., Ducournau R., Privat J.
GPL'10: Journées du GDR Génie de la Programmation et du Logiciel, France
- 2009 **Empirical Assessment of Object-Oriented Implementations with Multiple Inheritance and Static Typing**
Ducournau R., Morandat F., Privat J.
OOPSLA'09: Object-Oriented Programming, Systems, Languages, and Applications
- 2009 **Évaluation de l'efficacité des implémentations de l'héritage multiple en typage statique**
Morandat F., Ducournau R., Privat J.
LMO'09 : Langages et Modèles à Objets, France
- 2008 **Coloring for Shared Object-Oriented Libraries**
Privat J., Morandat F.
ICOOOLPS'08: ECOOP Workshop on the Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems, Cyprus
- 2006 **Efficient Separate Compilation of OO languages**
Privat J., Morandat F., Ducournau R.
ICOOOLPS'06: ECOOP Workshop on the Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems, France

Teaching

- graduate Software engineering & Design Patterns, Network and communication, Introduction to artificial intelligence (> 94h, *University of Montpellier II*)
- undergrad Operating systems, Algorithms and imperative programming, Office automation and introduction to computer science (> 270h, *University of Montpellier I & II*)

Supervising

- Ph.D One student at 50% during one year
- graduate Six student at 50% from 2 months (3), 6 months (2) to one year (1)
- undergrad One group of six students for 3 months at 50%