Raphaël Cauderlier

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Education

2010 – 2012 **Research Master in Computer Science**, *MPRI*, Paris, *Mention Assez Bien*.

2009 – 2010 **Licence in Computer Science**, *ENS Cachan*, Cachan, *Mention Bien*.

2007 – 2009 **Classes Préparatoires (MPSI and MP*)**, *Lycée Henri-IV*, Paris.

2007 **Scientific Baccalauréat**, *Mention Très Bien*.

Phd thesis

Title *Object-oriented mechanisms for interoperability between proof systems*

Supervisor Catherine Dubois

Description We compile functional and object-oriented programming languages in a universal logical framework to ease interoperability between automated provers and proof assistants.

Research Experience

Sept. 2012 – July 2013 **10 month Internship**, *Inria, Deducteam*, Paris.
Compilation of the FoCaLiZe implementation of ML in Dedukti.

April 2012 – Sept. 2012 **Master Internship**, *Inria, Deducteam*, Paris.
Compilation of FoCaLiZe static object-oriented mechanisms in Dedukti.

April 2011 – Aug. 2011 **Master Internship**, *Technische Universität München (TUM), Theorem-Proving Group*, Munich.
Isabelle formalization of pushdown transition systems and accessibility proof.

Jul. 2010 – Aug. 2010 **Licence Internship**, *Duisburg Universität*, Duisburg.
Equivalence of a category-based logic and a graph-based logic.

Teaching Experience

During my PhD, I was in charge of the practical sessions for the following lectures at Université Paris 6 (UPMC):

Initiation to Programming, *C, Python*, L1.

Android application development, *Java*, L2.

Databases, *SQL*, L2.

Advanced programming, *C++*, M1.

Languages

First French Second English and German

Computer skills

Programming OCaml, Python, Java, C, C++
Proving Dedukti, Coq, Isabelle
Other System (Linux) and network administration

Publications

[1] Ali Assaf and Raphaël Cauderlier. Mixing HOL and Coq in Dedukti. In Kaliszyk, Cezary and Paskevich, Andrei, editor, *Proceedings 4th Workshop on Proof eXchange for Theorem Proving, Berlin, Germany, August 2-3, 2015*, volume 186 of *Electronic Proceedings in Theoretical Computer Science*, pages 89–96, Berlin, Germany, August 2015. Open Publishing Association.

[2] H. J. Sander Bruggink, Raphaël Cauderlier, Mathias Hülsbusch, and Barbara König. Conditional Reactive Systems. In Supratik Chakraborty and Amit Kumar, editors, *IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2011)*, volume 13 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 191–203, Dagstuhl, Germany, 2011. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik.

[3] Guillaume Bury, Raphaël Cauderlier, and Pierre Halmagrand. Implementing Polymorphism in Zenon. In *11th International Workshop on the Implementation of Logics (IWIL)*, Suva, Fiji, November 2015.

[4] Raphaël Cauderlier and Catherine Dubois. Objects and subtyping in the $\lambda\Pi$-calculus modulo. In *Post-proceedings of the 20th International Conference on Types for Proofs and Programs (TYPES 2014)*, Leibniz International Proceedings in Informatics (LIPIcs), Paris, 2014. Schloss Dagstuhl.

[5] Raphaël Cauderlier and Pierre Halmagrand. Checking Zenon Modulo Proofs in Dedukti. In Kaliszyk, Cezary and Paskevich, Andrei, editor, *Proceedings 4th Workshop on Proof eXchange for Theorem Proving, Berlin, Germany, August 2-3, 2015*, volume 186 of *Electronic Proceedings in Theoretical Computer Science*, pages 57–73, Berlin, Germany, August 2015. Open Publishing Association.