Nicolas Marti

Curriculum Vitae

Bunkyo-ku, Hongo 6-18-9 (703)
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E-mail: `nicolas.marti@lehman.com`

Nationality French
Born: 06/28/1978 (Tours, France)

PROFESSIONAL EXPERIENCES	**Lehman Brothers Japan Inc.**, Tokyo, Japan **April 2008 -**

Fixed Income Analytics
Fixed Income Research Asias-Pacific

National Institute for Advance Industrial Science and Technology (AIST)

Research Center for Information Security (RCIS)　　**August 2006 - March 2008**

Technological Trainee
- Verification of embedded software (MIPS architecture)
- Verification of cryptographic protocols
- Implementation of an interpreter, in Ocaml, for a probabilistic language
- Implementation of a theorem prover for first order logic, in Ocaml
- Implementation of a proof assistant, in Ocaml (`http://savannah.nongnu.org/projects/poussin/`)

EDUCATION

University of Tokyo, Hongo campus, Tokyo, JAPAN
Ph.D. Candidate, Computer science, April 2005 (expected graduation date: March 2008)
- Dissertation Topic: "Formal Verification of Low-level Software"
- Advisor: Akinori Yonezawa
- Contents:
  - Topsy operating system model, and verification in the SPIN model checker
  - Model of a subset of C and assembly in the Coq proof assistant
  - Specification and verification of C and assembly source code
  - Implementation of a certified code verifier and simple compiler

Polytech Tours (Engineering School), Tours, France
M.S., Computer science, July, 2003 (Major)

IUP Informatique (Computer Science Professional University Institute), Blois, France
B.A., Computer science, April 2002

RESEARCH AWARD

From Japanese Society for Software Science and Technology:

Takahashi Best Presentation Award, 2005

PPL Best Paper Award, 2007

RESEARCH INTERESTS	Algorithms, Decision procedures, Programming languages, formal methods, proof assistant, model checking, low-level software, compiler, operating system.

CHOSEN PUBLICATIONS

Nicolas Marti and Reynald Affeldt,
Towards Formal Verification of Memory Properties using Separation Logic,
Japan Society for Software Science and Technology, Electronic proceedings (ISSN 1348-0901).
Slides: `http://web.yl.is.s.u-tokyo.ac.jp/~nicolas/documents/seplog-jssst.pdf`
Draft: `http://web.yl.is.s.u-tokyo.ac.jp/~nicolas/documents/marti-affeldt-yonezawa.pdf`

Nicolas Marti and Reynald Affeldt and Akinori Yonezawa,
Formal Verification of the Heap Manager of an Operating System using Separation Logic,
8th International Conference on Formal Engineering Methods (ICFEM 2006), Macao SAR, China, October 29–November 3, 2006
Draft: `http://web.yl.is.s.u-tokyo.ac.jp/~nicolas/documents/icfem06.pdf`

Nicolas Marti and Reynald Affeldt and Akinori Yonezawa,
Model-checking of a Multi-threaded Operating System,
23rd Workshop of the Japan Society for Software Science and Technology, University of Tokyo, Tokyo, Japan, September 13–15, 2006
Draft: `http://web.yl.is.s.u-tokyo.ac.jp/~nicolas/documents/marti-jssst2006-en.pdf`

Reynald Affeldt and Nicolas Marti,
An Approach to Formal Verification of Arithmetic Functions in Assembly,
11th Annual Asian Computing Science Conference (ASIAN 2006), Focusing on Secure Software and Related Issues
Draft: `http://staff.aist.go.jp/reynald.affeldt/documents/affeldt-asian2006.pdf`

Nicolas Marti and Reynald Affeldt,
A Certified Verifier for a Fragment of Separation Logic,
9th JSSST Workshop on Programming and Programming Languages (PPL 2007)
Draft: `http://web.yl.is.s.u-tokyo.ac.jp/~nicolas/documents/ppl2007.pdf`

Reynald Affeldt, Miki Tanaka, and Nicolas Marti,
Formal proof of provable security by game-playing in a proof assistant,
1st International Conference on Provable Security (Provsec 2007)
Abstract: `http://staff.aist.go.jp/reynald.affeldt/documents/abstract_provsec2007.txt`

COMPUTER SKILLS

- Programming Languages: C, C++, Ocaml, Assembly(x86, MIPS), SQL, Php, Java
- Administraton: Bind, MySQL, Qmail, LDAP
- Formal methods tools: Coq, SPIN, Maxima, Scilab
- Operating Systems: Unix/Linux
- Word processing: LaTeX, METAPOST
- Presentation: Powerpoint, Beamer

LANGUAGE

- French: native
- English: competent
- Japanese: basic
- Spanish: basic