Gustavo Federico PETRI

Curriculum Vitæ

Personal Information

Place of birth:	Córdoba, Argentina	Address:	106 Dogwood Ct.,
Citizenship:	Argentine		West Lafayette, IN,
Affiliation:	Purdue University		(47906) USA
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Research Interests

My research interests lie in the areas of formal methods and programming languages – both in their formal and practical aspects –, as well as parallel programming and distributed systems in general.

Education

Ph.D. in Computer Science. INRIA – Sophia Antipolis, France (degree granted by the Université de Nice – Sophia Antipolis). Directed by **Gérard Boudol**. Thesis: "Operational Semantics of Relaxed Memory Models".

M.S. in Computer Science (equivalent) "Licenciado en Ciencias de la Computación", (five years C.S. degree) at Fa.M.A.F., Universidad Nacional de Córdoba (U.N.C.), Argentina.

B.S. in Computer science (equivalent) "Analista en Computación" (three years C.S. degree) at Fa.M.A.F., U.N.C., Córdoba, Argentina.

Research and Professional Activities

2013- *Visiting Assistant Professor* in the Computer Science Department at *Purdue University*. Working in collaboration with **Prof. Suresh Jagannathan** and **Prof. Jan Vitek**. on the verified compilation of concurrent managed languages.

2012-2013 *Postdoctoral Researcher* in the Computer Science Department at *Purdue University*. Collaborated with **Prof. Suresh Jagannathan** and **Prof. Jan Vitek**.

2011-2012 *Postdoctoral Researcher* at the Foundations of Programming Languages Group, School of Computing, DePaul University. Collaborated with **Prof. Radha Jagadeesan** and **Prof. James Riely** on the semantics and verification of programs in relaxed memory models.

2006–2006 *Intern* at the Everest Team, INRIA – Sophia Antipolis. Collaborated with **Marieke Huisman** on formalizing the Java Memory Model in the Coq proof assistant.

2005-2006 *Java Developer* at the Instituto Técnico Córdoba. Worked on a clean room development of the `java.rmi` library funded by the Intel Corporation.

Publications

H. Zhu, G. Petri and S. Jagannathan
Poling: SMT Aided Linearizability Proofs. To appear: CAV (2015).

G. Petri, J. Vitek and S. Jagannathan
Cooking the Books: Formalizing JMM Implementation Recipes. To appear: ECOOP (2015).

S. Jagannathan, V. Laporte, G. Petri, D. Pichardie and J. Vitek
Atomicity Refinement for Verified Compilation. In: ACM Transactions on Programming Languages and Systems (TOPLAS). Vol. 36-2 (July 2014), pp. 6 :1-6 :30. Accepted for presentation at PLDI'15, Edinburgh, U.K.

G. Petri *Studying Operational Models of Relaxed Concurrency.* In TGC (2013), pp. 254-272. Buenos Aires, Argentina.

R. Jagadeesan, G. Petri, C. Pitcher and James Riely
Quarantining Weakness: Compositional Reasoning Under Relaxed Memory Models (Extended Abstract). In: ESOP (2013), pp. 492-511. Rome, Italy.

G. Boudol, G. Petri and Bernard Serpette
Relaxed Semantics of Concurrent Programming Languages. In: EXPRESS/SOS Workshop 2012. Newcastle, UK.

R. Jagadeesan, G. Petri and James Riely
Brookes is Relaxed, Almost!. In FOSSACS (2012), pp. 180-194. Tallinn, Estonia.

G. Petri *Operational Semantics of Relaxed Memory Models.* Thesis. Université de Nice - Sophia Antipolis, France, 2010.
Reviewers: Andrew Appel and Jean-Jacques Lévy. **Committee**: Martín Abadi, *Gilles Barthe* (president), Gérard Boudol, Marieke Huisman and Xavier Leroy.

G. Boudol and G. Petri
A Theory of Speculative Computations. In: ESOP (2010), pp. 165-184. Paphos, Cyprus.

G. Boudol and G. Petri
Relaxed Memory Models: an Operational approach. In: POPL (2009), pp. 392-403. Savannah, GA., USA.

M. Huisman and G. Petri
BicolanoMT: a Formalization of Multi-threaded Java at Bytecode Level. In: Workshop on Bytecode Semantics, Verification, Analysis and Transformation (ByteCode) 2008. Budapest, Hungary.

M. Huisman and G. Petri
The Java Memory Model: a Formal Explanation. In: Verification and Analysis of Multi-threaded Java-like Programs Workshop (VAMP) 2007. Lisbon, Portugal.

Teaching Experience

Fall 2014 Instructor for the senior level undergraduate course "Programming Languages" (CS 456) at Purdue University.

Spring 2013 Instructor for the graduate level course "Programming Languages" (CS 565) at Purdue University.

2003-2005 Undergraduate Teaching Assistant (U.T.A.) at the University of Córdoba. I was an U.T.A. for six semesters on different courses including: *Programming Languages and Compilers*, *Data Bases*, *Discrete Mathematics II*, *Introduction to Logics and Programming*, and *Algorithms and Data Structures II* twice.

Grants and Awards

NSF CCF-1216613 Programming With Non Coherent Memory. Principal Investigator. National Science Foundation Award CCF-1216613.

NSF CCF-1318227 Havoc: Verified Compilation of Concurrent Managed Languages. Principal Investigator. National Science Foundation Award CCF-1318227.

DARPA FA8750-13-2-0242 Verified Compilation of Concurrent Managed Languages. Principal Investigator. D.O.D. DARPA Award FA8750-13-2-0242.

Community Service

I have contributed as a reviewer and sub-reviewers for several journals, conferences and workshops, including: Journal of Automated Reasoning (JAR), Journal of Object Technology (JOT), Automated Software Engineering (ASE), POPL, PLDI, ESOP, TACAS, CAV, SAS, APLAS, CONCUR, ICALP, MFSC, SAC-SVT, FSTTCS, TCS, TLDI, FTfJP and BYTECODE.

References

Gérard Boudol:	`Gerard.Boudol@inria.fr`
Suresh Jagannathan:	`suresh@cs.purdue.edu`
Jan Vitek:	`j.vitek@neu.edu`
Radha Jagadeesan:	`rjagadeesan@cs.depaul.edu`