Daniel STAN

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Education

2011-2013	**MPRI**, *ENS Cachan*, *Mention Bien*. Parisian Master of Research in Computer Science.
2010-2011	**Joint Degree**, *ENS Cachan*, *Mentions Très Bien* and *Bien*. Computer Science and Mathematics.
2008–2010	**Classes Préparatoires**, *Lycée Saint-Louis*, Paris. Major in Mathematics and Physics.
2008	**Scientific Baccalauréat**, *Mention Très Bien*.

PhD Thesis (in progress)

Title	*Mixed strategies in Concurrent Games*
Supervisors	Nicolas Markey and Patricia Bouyer-Decitre
Description	We study games played on graphs by an arbitrary number of players with non-zero sum objectives. The players represent agents (programs, processes or devices) that can interact to achieve their own objectives as much as possible. Solution concepts, as Nash Equilibrium, for such optimal plays, need not exist when restricting to pure deterministic strategies, even with simple reachability or safety objectives. The symmetry induced by deterministic behaviours motivates the studies where either the players or the environment can use randomization. In the first case, we show that classical concepts are undecidable with a fixed number of agents and propose computable approximations. In the second case, we study randomization as a reasonable policy for scheduling an arbitrary number of processes.
Funding	FP7 CASSTING ("Collective Adaptive System Synthesis Using Non-zero-sum Games");
Defense date	Expected for the fall of 2016.

Research Experience

April–August 2013	**Master Internship**, *LSV*, Cachan. *Mixed Nash Equilibria in Concurrent Games*, supervised by Nicolas Markey and Patricia Bouyer-Decitre (Report | Slides).
May–August 2012	**Master Internship**, *i2 RWTH*, Aachen. *Automated Analysis of Probabilistic Programs*, supervised by Friedrich Gretz and Joost-Pieter Katoen (Report | Slides).
June–July 2011	**Licence Internship**, *INRIA Rhônes-Alpes*, Grenoble. *Synchronisation of Independent Processes*, supervised by Bruno Gaujal and Jean-Marc Vincent.
May–June 2011	**Licence Internship**, *Centre de Mathématiques et de leur applications*, Cachan. *Empirical Mode Decomposition*, under the supervision of Corinne Vachier-Mammar. Joint work with Maud Kerebel and Luc Pellissier.

Publications

- Patricia Bouyer, Nicolas Markey, Mickael Randour, Arnaud Sangnier, and Daniel Stan. Reachability in networks of register protocols under stochastic schedulers. In Tiziana Calamoneri, Daniele Gorla, Yuval Rabani, Davide Sangiorgi, and Michael Mitzenmacher, editors, *Proceedings of the 43rd International Colloquium on Automata, Languages and Programming (ICALP'16) – Part II*, Leibniz International Proceedings in Informatics, Rome, Italy, July 2016. Leibniz-Zentrum für Informatik. To appear.

- Patricia Bouyer, Nicolas Markey, and Daniel Stan. Mixed Nash equilibria in concurrent games. In Venkatesh Raman and S. P. Suresh, editors, *Proceedings of the 34th Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS'14)*, volume 29 of *Leibniz International Proceedings in Informatics*, pages 351–363, New Dehli, India, December 2014. Leibniz-Zentrum für Informatik.

- Patricia Bouyer, Nicolas Markey, and Daniel Stan. Stochastic equilibria under imprecise deviations in terminal-reward concurrent games. In Domenico Cantone and Giorgio Delzanno, editors, *Proceedings of the 7th International Symposium on Games, Automata, Logics, and Formal Verification (GandALF'16)*, Electronic Proceedings in Theoretical Computer Science, Catania, Italy, September 2016. To appear.

Teaching Experience

During my PhD, I was in charge of the following lectures at ENS Cachan:
- *Basics of Verification*, exercice class and homework (50%), M1.
- *Advanced algorithmics*, exercice class (100%), L3.

Languages

French	**Native language**	English	**Proficient**
Romanian	**Fluent spoken and basic written**	German	**Basic knowledge**

Computer skills

Programming	Python, Bash, OCaml, C/C++.	GNU/Linux	System, Network Administration.
Versioning	Git, Mercurial, Subversion.		

Interests

Inline Skating	Weekly road skating in Paris.
Electronics	Home-automation projects based on Arduino and Raspberry-Pi boards.
Crans Volunteer	Student Internet provider for the ~ 1300 inhabitants of Cachan campus. I used to be administrative president (2011-12) then head of the technical team (2014-15).