

Curriculum Vitae : Ocan SANKUR

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Positions

2015 – : CNRS Researcher (CR2), Irisa (UMR 6074), Rennes, France.
Part of the SUMO team.

2013 – 2015 : Post-doctoral researcher in Université Libre de Bruxelles, Brussels, Belgium.
ERC Project inVEST headed by Jean-François Raskin.

Education

2010 – 2013 : LSV, École Normale Supérieure de Cachan & CNRS, Cachan, France.
PhD in computer science on *Robustness in Timed Automata : Analysis, Synthesis, Implementation*, supervised by Patricia Bouyer and Nicolas Markey.

2007 – 2010 : École Normale Supérieure, Paris, France.

Licence and Master's degrees (*Master Parisien de Recherche en Informatique*)

2005 – 2007 : Lycée Henri IV, Paris, France. Preparatory classes for graduate schools.

(In parallel, Computer Engineering department of Bogazici University, Istanbul.)

1997 – 2005 : Lycée de Galatasaray, Istanbul, Turkey.

Stays - Internships

- Brown University, RI, USA. Six months research internship supervised by Claire Mathieu (2009).
- LIAFA, Université Paris-Diderot, Paris, France. Three months research internship supervised by Olivier Carton (2008).
- Polytechnic University, NY, USA. Three months internship supervised by Nasir Memon (2004).

Scientific Service

- Program committee member of FORMATS'14, SYNCOP'16
- Reviews for conferences STACS'14, TACAS'14, ICALP'12-13, LICS'12, FSTTCS'11, FORMATS'11, and the journals Theoretical Computer Science, Information & Computation, Science of Computer Programming.

Distinctions

- First prize in the sequential track of the synthesis competition SYNT 2014 and SYNT 2015 (joint with R. Brenguier, G. Perez, J.-F. Raskin). Our tool AbsSynthe synthesizes small circuits that control a given synchronous circuit so as to satisfy a specification.
- Some distinctions for research projects in high school : 3rd prize in EU Young Researcher's Contest 2004 (Ireland), 3rd prize in INTEL International Science Fair 2005 (USA).

Misc

- Software : Developer of shri nktech and symrob, robustness analysis tools for timed automata (C++ and OCaml). I also contribute to AbsSynthe synthesis tool for succinctly given systems as synchronous circuits.
- I speak : Turkish (mother tongue), French (bilingual), English (fluent).
- I contributed to the library database system and its web interface (in PHP and mysql) in LSV (2012).

Teaching

- 2010-2013 : (64 hours/year for three years) Teaching assistant for computer science courses in ENS Cachan (level L3). Courses : Algorithms 1, Advanced programming, C Programming, Java project.
- 2008-2010 : (40 hours) Lab sessions of the computer science course (OCaml and Maple) in Lycée Janson-de-Sailly and Lycée Saint-Louis, Paris.

Publications in Journals

- [1] Patricia Bouyer, Nicolas Markey, and Ocan Sankur. Robust reachability in timed automata and games : A game-based approach. *Theoretical Computer Science*, 563(0) :43 – 74, 2015.
- [2] Ocan Sankur, Patricia Bouyer, and Nicolas Markey. Shrinking timed automata. *Information and Computation*, 234(0) :107 – 132, 2014.

Publications in International Conferences

- [1] Romain Brenguier, Jean-François Raskin, and Ocan Sankur. Assume-admissible synthesis. In *Proceedings of the 26th International Conference on Concurrency Theory (CONCUR'15)*, 2015.
- [2] Mickael Randour, Jean-François Raskin, and Ocan Sankur. Percentile queries in multi-dimensional markov decision processes. In *Proceedings of the 25th International Conference on Computer Aided Verification (CAV'15)*, 2015.
- [3] Mickael Randour, Jean-François Raskin, and Ocan Sankur. Variations on the stochastic shortest path problem. In *16th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI'15)*, 2015.
- [4] Ocan Sankur. Symbolic quantitative robustness analysis of timed automata. To appear in *Tools and Algorithms for the Construction and Analysis of Systems (TACAS'15)*, 2014.
- [5] Jean-Francois Raskin and Ocan Sankur. Multiple-Environment Markov Decision Processes. In Venkatesh Raman and S. P. Suresh, editors, *34th International Conference on Foundation of Software Technology and Theoretical Computer Science (FSTTCS 2014)*, volume 29 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 531–543. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2014.
- [6] Youssouf Oualhadj, Pierre-Alain Reynier, and Ocan Sankur. Probabilistic robust timed games. In Paolo Baldan and Daniele Gorla, editors, *Proceedings of the 25th International Conference on Concurrency Theory (CONCUR'14)*, volume 8704 of *Lecture Notes in Computer Science*, pages 203–217. Springer, 2014.
- [7] Patricia Bouyer, Nicolas Markey, and Ocan Sankur. Robust weighted timed automata and games. In Victor Braberman and Laurent Fribourg, editors, *Proceedings of the 11th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'13)*, volume 8053 of *Lecture Notes in Computer Science*, pages 31–46, Buenos Aires, Argentina, August 2013. Springer.
- [8] Ocan Sankur, Patricia Bouyer, Nicolas Markey, and Pierre-Alain Reynier. Robust controller synthesis in timed automata. In Pedro R. D'Argenio and Hernán Melgratti, editors, *Proceedings of the 24th International Conference on Concurrency Theory (CONCUR'13)*, volume 8052 of *Lecture Notes in Computer Science*, pages 546–560, Buenos Aires, Argentina, August 2013. Springer.
- [9] Ocan Sankur. Shrinktech : A tool for the robustness analysis of timed automata. In Natasha Sharygina and Helmut Veith, editors, *Proceedings of the 23th International Conference on Computer Aided Verification (CAV'13)*, volume 8044 of *Lecture Notes in Computer Science*, pages 1006–1012, Saint Petersburg, Russia, July 2013. Springer.
- [10] Patricia Bouyer, Nicolas Markey, and Ocan Sankur. Robust reachability in timed automata : A game-based approach. In Artur Czumaj, Kurt Mehlhorn, Andrew Pitts, and Roger Wattenhofer, editors, *Proceedings of the 39th International Colloquium on Automata, Languages and Programming (ICALP'12) – Part II*, volume 7392 of *Lecture Notes in Computer Science*, pages 128–140, Warwick, UK, July 2012. Springer.

- [11] Romain Brenguier, Stefan Göller, and Ocan Sankur. A comparison of succinctly represented finite-state systems. In Maciej Koutny and Irek Ulidowski, editors, *Proceedings of the 23rd International Conference on Concurrency Theory (CONCUR'12)*, volume 7454 of *Lecture Notes in Computer Science*, pages 147–161, Newcastle, UK, September 2012. Springer.
- [12] Ocan Sankur, Patricia Bouyer, and Nicolas Markey. Shrinking timed automata. In Supratik Chakraborty and Amit Kumar, editors, *Proceedings of the 31st Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS'11)*, Leibniz International Proceedings in Informatics, pages 90–102, Mumbai, India, December 2011. Leibniz-Zentrum für Informatik.
- [13] Patricia Bouyer, Kim G. Larsen, Nicolas Markey, Ocan Sankur, and Claus Thrane. Timed automata can always be made implementable. In Joost-Pieter Katoen and Barbara König, editors, *Proceedings of the 22nd International Conference on Concurrency Theory (CONCUR'11)*, volume 6901 of *Lecture Notes in Computer Science*, pages 76–91, Aachen, Germany, September 2011. Springer.
- [14] Patricia Bouyer, Nicolas Markey, and Ocan Sankur. Robust model-checking of timed automata via pumping in channel machines. In Uli Fahrenberg and Stavros Tripakis, editors, *Proceedings of the 9th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'11)*, volume 6919 of *Lecture Notes in Computer Science*, pages 97–112, Aalborg, Denmark, September 2011. Springer.
- [15] Ocan Sankur. Untimed language preservation in timed systems. In Filip Murlak and Piotr Sankowski, editors, *Proceedings of the 36th International Symposium on Mathematical Foundations of Computer Science (MFCS'11)*, volume 6907 of *Lecture Notes in Computer Science*, pages 556–567, Warsaw, Poland, August 2011. Springer.
- [16] Claire Mathieu, Ocan Sankur, and Warren Schudy. Online correlation clustering. In Jean-Yves Marion and Thomas Schwentick, editors, *Proceedings of the 27th Annual Symposium on Theoretical Aspects of Computer Science (STACS'10)*, volume 5 of *Leibniz International Proceedings in Informatics*, pages 573–584, Nancy, France, March 2010. Leibniz-Zentrum für Informatik.

Invited Papers

- [1] Mickael Randour, Jean-François Raskin, and Ocan Sankur. Variations on the stochastic shortest path problem. In *16th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI'15)*, 2015.
- [2] Patricia Bouyer, Nicolas Markey, and Ocan Sankur. Robustness in timed automata. In Parosh Aziz Abdulla and Igor Potapov, editors, *Proceedings of the 7th Workshop on Reachability Problems in Computational Models (RP'13)*, volume 8169 of *Lecture Notes in Computer Science*, pages 1–18, Uppsala, Sweden, September 2013. Springer.

Publications in International Workshops

- [1] Romain Brenguier, Guillermo A. Pérez, Jean-François Raskin, and Ocan Sankur. Compositional algorithms for succinct safety games. In *Proceedings 4th Workshop on Synthesis (SYNT'15)*, 2015.
- [2] Romain Brenguier, Guillermo A. Pérez, Jean-François Raskin, and Ocan Sankur. Absynthe : abstract synthesis from succinct safety specifications. In Krishnendu Chatterjee, Rüdiger Ehlers, and Susmit Jha, editors, *Proceedings 3rd Workshop on Synthesis (SYNT'14)*, volume 157 of *Electronic Proceedings in Theoretical Computer Science*, pages 100–116. Open Publishing Association, 2014.

Theses

- [1] Ocan Sankur. Model-checking robuste des automates temporisés *via* les machines à canaux. Master's thesis, École Normale Supérieure, Paris, France, September 2010.
- [2] Ocan Sankur. *Robustness in Timed Automata : Analysis, Synthesis, Implementation*. Ph.d. thesis, Laboratoire Spécification et Vérification, ENS Cachan, France, June 2013.

Unpublished Research Reports