Sasha Rubin

Curriculum Vitae

November 2012

– Personal Data –

Date of Birth	16 February 1976
Citizenship	New Zealand
Language	English
Address	IST Austria Am Campus 1 3400 Klosterneuburg, Austria

– University –

Postdoctoral

3.2012 – present: Postdoctoral Researcher, IST Austria and TU Vienna, Austria.

5.2011 – 8.2011: Visiting Researcher, Department of Computer Science, Tel Aviv University.

2.2010 – 5.2010: Visiting Lecturer, Department of Mathematics, University of Cape Town.

08.2008 – 12.2009: Visiting Assistant Professor, Department of Mathematics, Cornell University.

12.2005 – 02.2008: Honorary Research Fellow in the Department of Computer Science, University of Auckland. Supported by a New Zealand Science and Technology Postdoctoral Fellowship UOAX0413.

PhD – Mathematics and Computer Science

1999 – 2004: University of Auckland, New Zealand.
Supervisor: Bakhadyr Khoussainov
Thesis Title: Automatic Structures

– Summary of Research Interests –

My work studies the limitations of automata theory and mathematical logic for describing computer systems and mathematical structures. Concretely, I have worked in the area of automatic structures, the automata-theoretic approach to verification, and in finite model theory. I am currently working on the analysis of distributed systems and algorithms using logical and automata-theoretic methods.

– Research Activities –

Recent Seminar Talks

Workshop on Finite and Algorithmic Model Theory in Les Houches (2012), IST Austria and TU Vienna (2011, 2012), CNRS Liafa Paris 7 (2011), Tel Aviv University (2011), University of Cape Town (2010)

Invited Talks

Working group reunion at LABRI Bordeaux (06.2008), Dagstuhl workshop 07441 'Algorithmic-Logical Theory of Infinite Structures' (10.2007), Workshop on Logic and Algorithms satellite meeting 'Finite and Algorithmic Model Theory' in Durham (01.2006), Workshop on Automata, Structures and Logic in Auckland (12.2004).

Recent research visits

Łukasz Kaiser at Liafa (10.2011).

Automata theory and applications, IMS programme, Singapore (09.2011).

Aniello Murano in Napoli (07.2011).

Refereed

Journal of Symbolic Logic (JSL), Information and Computation, Journal of Logic and Computation, IEEE Symposium on Logic in Computer Science (LICS), Central European Journal of Mathematics, Symposium on Theoretical Aspects of Computer Science (STACS), Logical Methods in Computer Science (LMCS), International Conference on Foundations of Software Science and Computation Structures (FoSSaCS), IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, Theory and Practice of Logic Programming.

Publications

Automatic Structures in *Automata: From mathematics to applications*, to be published by EMS and AutomathA network.

A Myhill-Nerode Theorem for Automata with Advice with A. Kruckman, J. Sheridan and B. Zax, accepted to *GandALF 2012*.

Interpretations in trees with countably many branches with A. Rabinovich, appeared in *Proceedings of 27th Annual IEEE Symposium on Logic in Computer Science,* $551 - 560$*,* 2012.

Alternating Traps in Parity Games with P. Phalitnonkiat, A. Grinshpun, A.Tarfulea, *accepted to* Theoretical Computer Science.

Automata based presentations of infinite structures with V. Bárány and E. Grädel, in *Finite and Algorithmic Model Theory*, Series: London Mathematical Society Lecture Note Series (No. 379), 2011.

Cardinality and counting quantifiers on omega-automatic structures, with V. Bárány and Ł. Kaiser, 25th Annual Symposium on Theoretical Aspects of Computer Science, 2008.

Order invariant MSO is stronger than counting MSO, with T. Ganzow, 25th Annual Symposium on Theoretical Aspects of Computer Science, 2008.

Automata presenting structures: A survey of the finite-string case, The Bulletin of Symbolic Logic, Volume 14, Issue 2, 2008, 169-209.

Automatic Structures: Richness and Limitations, with B. Khoussainov, A. Nies and F. Stephan, Logical Methods in Computer Science, Vol 3, 2007. Appeared in Proceedings of 19th Annual IEEE Symposium on Logic in Computer Science, $44 - 53$, 2004.

Automatic linear orders and trees, with B. Khoussainov and F. Stephan, ACM Transactions on Computational Logic, $6(4), 675 - 700, 2005$. Appeared in Proceedings of 18th Annual IEEE Symposium on Logic in Computer Science, 2003, as *Automatic Partial Orders*.

Verifying ω-regular Properties of Markov Chains, with D. Bustan and M.Y. Vardi, 16th International conference on Computer Aided Verification, $189 - 201, 2004$.

Definability and Regularity in Automatic Structures, with B. Khoussainov and F. Stephan, 21st Annual Symposium on Theoretical Aspects of Computer Science, $440 - 451, 2004$.

Automatic Structures - Overview and Future Directions, with B. Khoussainov, Journal of Automata, Languages and Combinatorics, $8(2), 287 - 301, 2003$.

Some Results on Automatic Structures, with B. Khoussainov and H. Ishihara, 17th Annual IEEE Symposium on Logic in Computer Science, 2002.

Graphs with Automatic Presentations over a Unary Alphabet Journal of Automata, Languages and Combinatorics, $6(4), 467 - 480, 2001$.

Finite Automata and Well Ordered Sets, New Zealand Journal of Computing, $7(2), 39 - 46, 1999$.

– Academic References –

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– Teaching References –

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