

Mikhail Raskin

Curriculum vitae

Personal details

Date and place of birth 21 August 1987, Moscow, Russia
Nationality Russia
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Current position

Since Dec 2018 Scientific employee, Department of Informatics, Technical University of Munich

Previous positions

Mar 2017 – Aug 2018 Research Engineer, University of Bordeaux, LaBRI
Dec 2015 – Feb 2017 Postdoc, Department of CS, Aarhus University

Research interests

Expressive power and properties of programming languages. Special computation models. Combinatorial and probabilistic constructions in theoretical computer science. Algorithm design.

Education

2008–2014 PhD, Moscow State University, Dept. of mechanics and mathematics
PhD thesis supervisor: Prof. Nikolay K. Vereshchagin
PhD thesis title: Automata on infinite words: direct and semidirect products approach.
2002–2008 Master of Science, Independent University of Moscow
2003–2008 Master of Science, Moscow State University, Dept. of mechanics and mathematics (cum laude)
MSc thesis supervisor: Prof. Nikolay K. Vereshchagin
MSc thesis title: Partial orderings on measures on the set of infinite words over a two-symbol alphabet

Selected publications

1. Arnaud Casteigts, Michael Raskin, Malte Renken, Viktor Zamaraev. Sharp Thresholds in Random Simple Temporal Graphs. *Symposium on Foundations of Computer Science*, to appear in 2022.
2. Michael Blondin, Mikhail Raskin. The Complexity of Reachability in Affine Vector Addition Systems with States. *Logical Methods in Computer Science*, 2021.
3. Javier Esparza, Mikhail A. Raskin, Christoph Welzel. Computing Parameterized Invariants of Parameterized Petri Nets. *Proceedings of International Conference on Application and Theory of Petri Nets*, 2021.
4. Michael A. Raskin, Mark Simkin. Perfectly Secure Oblivious RAM with Sublinear Bandwidth Overhead. *Proceedings of International Conference on the Theory and Application of Cryptology and Information Security*, 2019.
5. Kristoffer Arnsfelt Hansen, Mikhail A. Raskin. A two-player stay-in-a-set game with perfect information and without Nash equilibria. *International Symposium on Games, Automata, Logics, and Formal Verification*, 2019.
6. Javier Esparza, Mikhail A. Raskin, Chana Weil-Kennedy. Parameterized Analysis of Immediate Observation Petri Nets. *Proceedings of International Conference on Application and Theory of Petri Nets*, 2019.
7. Mikhail Raskin. A superpolynomial lower bound for the size of non-deterministic complement of an unambiguous automaton. *International Colloquium on Automata, Languages, and Programming*, 2018.
8. Michael Raskin. Writing a best-effort portable code walker in Common Lisp. *European Lisp Symposium*, 2017.
9. Krishnendu Chatterjee, Monika Henzinger, Sebastian Krinninger, Veronika Loitzenbauer, Michael A. Raskin. Approximating the minimum cycle mean. *Theoretical Computer Science*, 2014.
10. Michael A. Raskin. Toom's Partial Order Is Transitive. *Problems of Information Transmission*, 2012.

Reviewed talks

1. Mikhail Raskin. Population protocols with unreliable communication. *International Symposium on Algorithmics of Wireless Networks (ALGOSENSORS 2021)*, online.
2. Michael Raskin. Lisp in the middle: using Lisp to manage a Linux system. *European Lisp Symposium (ELS 2021)*, online.
3. Michael Raskin, Chana Weil-Kennedy. Efficient Restrictions of Immediate Observation Petri Nets. *International Conference on Reachability Problems (RP 2020)*, online.

4. Michael Blondin, Mikhail Raskin. The Complexity of Reachability in Affine Vector Addition Systems with States. *International Conference on Reachability Problems* (RP 2020), online.
5. Michael Raskin. Bridging the stepping stones: using pieces of NixOS without full commitment. *NixCon*, 2020, online.
6. Michael Blondin, Mikhail Raskin. The Complexity of Reachability in Affine Vector Addition Systems with States. *Logic in Computer Science* (LICS 2020), online.
7. Kristoffer Arnsfelt Hansen, Mikhail A. Raskin. A two-player stay-in-a-set game with perfect information and without Nash equilibria. *International Symposium on Games, Automata, Logics, and Formal Verification* (GandALF 2019), Bordeaux, France.
8. Michael A. Raskin, Christoph Welzel. Working with first-order proofs and provers. *European Lisp Symposium* (ELS 2019), Genoa, Italy.
9. Mikhail Raskin. A superpolynomial lower bound for the size of non-deterministic complement of an unambiguous automaton. *International Colloquium on Automata, Languages, and Programming* (ICALP 2018), Prague, Czech Republic.
10. Michael A. Raskin. A linear lower bound for incrementing a space-optimal integer representation in the bit-probe model. *International Colloquium on Automata, Languages, and Programming* (ICALP 2017), Warsaw, Poland.
11. Michael Raskin. Writing a best-effort portable code walker in Common Lisp. *European Lisp Symposium* (ELS 2017), Brussels, Belgium.
12. Michael Raskin, Nikita Nikitenkov. Paradox of choice in social network games with product choice. *Game theory society congress* (GAMES 2016), Maastricht, Netherlands.
13. Michael Raskin, Nikita Mamardashvili. Accessing local variables during debugging. *European Lisp Symposium* (ELS 2016), Krakow, Poland.
14. Mikhail A. Raskin. Computable measures that are couplable but not computably couplable. *International Conference on Computability, Complexity and Randomness* (CCR 2013), Moscow, Russia.
15. Michael Raskin. Data-transformer: an example of data-centered tool set. *European Lisp Symposium* (ELS 2013), Madrid, Spain.
16. Mikhail Raskin, Yuri Pritykin. Almost periodicity and finite automata.. *Workshop on Infinite Words, Automata and Dynamics*, 2007, Ekaterinburg, Russia.

Conference awards

Best paper award. *International Conference on Application and Theory of Petri Nets, 2021*
 Best paper award. *International Conference on Application and Theory of Petri Nets, 2019*

Teaching experience

TU Munich (2019–2021):

Supervision: Interactive Tool for Developing and Verifying First-Order Proofs
in Integration with Existing Automated provers (BSc thesis)

Supervision: Fast Simulation of Population Protocols (BSc thesis)

Lecturer and Teaching assistant: Practical course «Algorithms for programming contests»

Teaching assistant: Complexity theory

University of Bordeaux (2018):

Teaching assistant: Array algorithms

Independent University of Moscow (2007–2015):

Lecture courses: Introduction to probability theory, Set theory, Mathematical logic

Teaching assistant: Geometry, Algebra, Mathematical analysis

Lomonosov Moscow State University (2015):

Co-supervision of an MSc thesis project

“Paradoxical examples of social network games with product choice”

Moscow Institute of Physics and Technology (2011–2014):

Teaching Assistant: Mathematical logic, Algorithmic complexity.

Lecture Courses at the Summer School “Contemporary Mathematics” (2007–2019)

- “Between nonsense and unknowable. What we can claim, verify, prove”;
- “Toy examples of games”;
- “Blind counting”;
- “The objects that happen to exist” (probabilistic proofs of existence);
- “We cannot wait for favors from Nature” (forcing method in set theory model construction);
- “Who am I? Where am I?” (on sampling assumptions);
- A set of conventions and conventions about sets (a survey of alternative set theories);
- Cellular automata;
- Classical nonclassical logics and standard nonstandard models;
- Fortune-teller is of no use (what can and what cannot be predicted),
- Conditional probability and other probabilistic notions;
- Introduction to game theory;
- Sequences, close to periodical (with Yu.Pritykin).

Programming experience

Main languages: Common Lisp, Python, Pascal (Free Pascal Compiler, Delphi),
POSIX Shell/Bash, Nix

Other: Julia, Scheme, C, C++, JavaScript, OCaml

Service to community

Program committee member:

International Conference on Formal Modeling and Analysis of Timed Systems (FORMATS): 2021
European Lisp Symposium (ELS): 2022

Reviewer at request of PC members or editors:

Computer Science in Russia (CSR): 2011, 2012, 2018
European Symposium on Algorithms (ESA): 2018
European Lisp Symposium (ELS): 2018
Symposium on Theoretical and Applied Computer Science (STACS): 2020
International Symposium on Mathematical Foundations of Computer Science (MFCS): 2020
International Symposium on Automated Technology for Verification and Analysis (ATVA): 2020
International Conference on Application and Theory of Petri Nets: 2021
Computability in Europe Conference (CiE): 2021
International Colloquium on Automata, Languages, and Programming (ICALP): 2021
Information Processing Letters: 2021
Symposium on Fundamentals of Computation Theory (FCT): 2021
Data Compression Conference (DCC): 2022

Summer school organising committee and scientific committee member:

Summer School «Contemporary Mathematics», since 2017

Participation in conference/workshop organisation:

Meeting of German scientists working in the area of Concurrency Theory (D-CON) 2019

Languages spoken

- Russian (native)
- English (advanced)
- French (good)