

# List of Publications and Talks of Prof. Dr. Laura Kovács

*Last updated in January 2024*

## 1 Textbooks

1. Adalbert Kovács, Gheorghe Țigan, Laura Kovács, and Constantin Milici. *Computer Assisted Mathematics (in Romanian)*. “Politehnica” Publisher, Timișoara, 3rd edition, 2012.

## 2 Invited Papers

2. Laura Kovács. Algebraic Reasoning for (Un)Solvable Loops. In *Proceedings of the 48th International Symposium on Mathematical Foundations of Computer Science (MFCS)*, volume 272 of LIPIcs, pages 4:1–4:2, 2023.
3. Laura Kovács. Algebra-Based Loop Analysis. In *Proceedings of the 28th International Symposium on International Symposium on Symbolic and Algebraic Computation (ISSAC)*, ACM, pages 41-42, 2023.
4. Laura Kovács. Symbolic Computation in Automated Program Reasoning. In *Proceedings of the 25th International Symposium on Formal Methods (FM)*, volume 14000 of LNCS, pages 3–9, 2023.
5. Laura Kovács. Induction in Saturation-Based Reasoning (Invited Abstract). In *Proceedings of the 14th International Conference on Intelligent Computer Mathematics (CICM)*, volume 12833 of LNCS, pages i-xx, 2021.
6. Andreas Humenberger and Laura Kovács. Algebra-Based Synthesis of Loops and Their Invariants (Invited Paper). In *Proceedings of the 22nd International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)*, volume 12597 of LNCS, pages 17-28, 2021.
7. Laura Kovács. First-Order Interpolation and Grey Areas of Proofs (Invited Talk). In *Proceedings of the 26th EACSL Annual Conference on Computer Science Logic (CSL)*, volume 82 of LIPIcs, pages 3:1-3:1, 2017.
8. Laura Kovács. Symbolic Computation and Automated Reasoning for Program Analysis. In *Proceedings of the International Conference on integrated Formal Methods (iFM 2016)*, volume 9681 of LNCS, pages 20-27, 2016.
9. Laura Kovács. Symbol Elimination for Automated Generation of Program Properties. In *Proceedings of the International Workshop on Automated Verification of Critical Systems (AVoCS 2014)*, volume 70 of ECEASST, pages 1-2, 2014.
10. Laura Kovács and Andrei Voronkov. First-Order Theorem Proving and Vampire. In *Proceedings of the International Conference on Computer Aided Verification (CAV)*, volume 8044 of LNCS, pages 1-35, 2013.
11. Laura Kovács. Symbol Elimination in Program Analysis. In *Proceedings of the International Conference on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, volume P3964 of *IEEE Computer Society*, page 12, 2011.
12. Laura Kovács and Andrei Voronkov. Finding Loop Invariants for Programs over Arrays using a Theorem Prover. In *Proceedings of the International Conference on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, volume P3964 of *IEEE Computer Society*, page 10, 2009.

## 3 Journal Articles

13. Maximilian Jaroschek, Manuel Kauers, and Laura Kovács. Lonely Points in Simplices. *Journal of Discrete & Computational Geometry*, 69(1): 4-25, 2023.
14. Marcel Moosbrugger, Ezio Bartocci, Joost-Pieter Katoen, and Laura Kovács. The Probabilistic Termination Tool Amber. *Formal Methods in System Design*, 61: 90-109, 2022.
15. Andreas Humenberger, Daneshvar Amrollahi, Nikolaj Bjørner, and Laura Kovács. Algebra-based Reasoning for Loop Synthesis. *Formal Aspects of Computing*, 34(1): 1-31, 2022.

16. Miroslav Stankovic, Ezio Bartocci, and Laura Kovács. Moment-Based Analysis of Bayesian Network Properties. *Journal of Theoretical Computer Science*, 903:113-133, 2022.
17. Jens Knoop, Laura Kovács and Jakob Zwirchmayr. Replacing Conjectures by Positive Knowledge: Inferring Proven Precise Worst-Case Execution Time Bounds Using Symbolic Execution. *Journal of Symbolic Computation*, 80: 101-124, 2017.
18. Bruno Buchberger, Adrian Craciun, Tudor Jebelean, Laura Kovács, Temur Kutsia, Koji Nakagawa, Florina Piroi, Nikolaj Popov, Judith Robu, Markus Rosenkranz, and Wolfgang Windsteiger. Theorema: Towards Computer-Aided Mathematical Theory Exploration. *Journal of Applied Logic*, 4(4):470–504, 2006.
19. Adalbert Kovács and Laura Kovács. The Lagrange Interpolation Formula in Determining the Fluid’s Velocity Potential through Profile Grids. *Bulletins for Applied and Computer Mathematics*, CVIII(2252):126–135, 2005.
20. Laura Kovács, Tudor Jebelean, and Adalbert Kovács. Practical Aspects of Algebraic Invariant Generation for Loops with Conditionals. *Bulletins for Applied and Computer Mathematics*, CVIII(2251):116–125, 2005.
21. Laura Kovács, Nikolaj Popov, and Tudor Jebelean. A Verification Environment for Imperative and Functional Programs in the Theorema System. *Annals of Mathematics, Computing and Teleinformatics (AMCT), TEI Larissa, Greece*, 1(2):27–34, 2005.
22. Laura Kovács and Tudor Jebelean. Automated Generation of Loop Invariants by Recurrence Solving in Theorema. *Annals of the West University of Timișoara. Series Mathematics - Computer Science*, XLII:151–166, 2004.
23. Laura Kovács and Tudor Jebelean. Generation of Loop Invariants in Theorema by Combinatorial and Algebraic Methods. *Bulletins for Applied and Computer Mathematics*, CVI(2172):125–134, 2004.
24. Laura Kovács and Tudor Jebelean. Practical Aspects of Imperative Program Verification in Theorema. *Annals of the West University of Timișoara. Series Mathematics - Computer Science*, XLI:135–154, 2003.

## 4 Refereed Publications in Proceedings

Note: Refereed publications have been published in proceedings and presented at conferences/workshops.

### Refereed Papers in Conference Proceedings

25. Singh Hitarth, George Kenison, Laura Kovács, and Anton Varonka. Linear Loop Synthesis for Quadratic Invariants. In *International Symposium on Theoretical Aspects of Computer Science (STACS)*, 2024. To appear.
26. Julian Müllner, Marcel Moosbrugger, and Laura Kovács. Strong Invariants Are Hard. In *ACM SIGPLAN Symposium on Principles of Programming Language (POPL)*, 8(30):pages 882–910, 2024.
27. Lea Brugger, Laura Kovács, Anja Komel, Sophie Rain, and Michael Rawson. CheckMate: Automated Game-Theoretic Security Reasoning. In *International ACM SIGSAC Conference on Computer and Communications Security (CCS)*, pages 1407–1421, 2023.
28. Marcel Moosbrugger, Julian Müllner, and Laura Kovács. Automated Sensitivity Analysis for Probabilistic Loops. In *International Conference on integrated Formal Methods (iFM)*, volume 14300 of LNCS, pages 21–39, 2023.
29. Martina Landman, Sophie Rain, Gerald Futschek, and Laura Kovács. Reshaping Unplugged Computer Science Workshops for Primary School Education. In *International Conference on Informatics in Schools (ISSSEP)*, 2023. To appear.
30. Clemens Eisenhofer, Ruba Alaassaf, Michael Rawson, and Laura Kovács. Non-Classical Logics in Satisfiability Modulo Theories. In *Proceedings of the International Conference on Automated Reasoning with Analytic Tableaux and Related Methods (TABLEAUX)*, volume 14278 of LNAI, pages 24–36, 2023.
31. Petra Hozzová, Laura Kovács, Chase Normann, and Andrei Voronkov. Program Synthesis in Saturation. In *Proceedings of the International Conference on Automated Deduction (CADE)*, volume 1432 of LNCS, pages 307–324, 2023.

32. Robin Couteil, Laura Kovács, Michael Rawson, and Jakob Rath. SAT-Based Subsumption Resolution. In *Proceedings of the International Conference on Automated Deduction (CADE)*, volume 1432 of LNCS, pages 190–206, 2023.
33. Thomas Hader, Daniela Kaufmann, and Laura Kovács. SMT Solving over Finite Field Arithmetic. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 94 of EPIc Series in Computing, pages 238–256, 2023.
34. Ahmed Bhayat, Konstantin Korovin, Laura Kovács, and Johannes Schoisswohl. Refining Unification with Abstraction. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 94 of EPIc Series in Computing, pages 36–47, 2023.
35. George Kenison, Laura Kovács, and Anton Varonka. From Polynomial Invariants to Linear Loops. In *Proceedings of the International Symposium on Symbolic and Algebraic Computation (ISSAC)*, ACM, pages 398–406, 2023.
36. Johannes Schoisswohl, Laura Kovács, Giles Reger, Konstantin Korovin, and Andrei Voronkov. ALASCA: Reasoning in Quantified Linear Arithmetic. In *Proceedings of the International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 13993 of LNCS, pages 647–665, 2023. s
37. Laura Kovács and Anton Varonka. What Else is Undecidable about Loops? In *Proceedings of the International Conference on Relational and Algebraic Methods in Computer Science (RAMICS)*, volume 13896 of LNCS, pages 176–193, 2023.
38. Clemens Eisenhofer, Nikolaj Bjørner and Laura Kovács. Satisfiability Modulo Custom Theories in Z3. In *Proceedings of the International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)*, volume 13881 of LNCS, pages 91–105, 2023.
39. Márton Hajdu, Petra Hozzová, Laura Kovács, Giles Reger, and Andrei Voronkov (2022). Getting Saturated with Induction. In *Principles of Systems Design – Essays Dedicated to Thomas A. Henzinger on the Occasion of His 60th Birthday*, volume 13660 of LNCS, pages 306–322, 2022.
40. Marcel Moosbrugger, Miroslav Stankovic, Ezio Bartocci and Laura Kovács. This is the Moment for Probabilistic Loops. In *Proceedings of the ACM Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*, volume 6 of ACM Program. Lang. (OOPSLA2), pages 1497–1525, 2022.
41. Daneshvar Amrollahi, Ezio Bartocci, George Kenison, Laura Kovács, Marcel Moosbrugger and Miroslav Stankovic. Solving Invariant Generation for Unsolvable Loops. In *Proceedings of the 29th International Static Analysis Symposium (SAS)*, volume 13790 of LNCS, pages 19–43, 2022. **Radhia Cousot Best Paper Award 2022.**
42. Jakob Rath, Armin Biere and Laura Kovács. First-Order Subsumption via SAT Solving. In *Proceedings of the 22nd International International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, pages 161–169, 2022.
43. Pamina Georgiou, Bernhard Gleiss, Ahmed Bhayat, Michael Rawson, Laura Kovács and Giles Reger. The Rapid Software Verification Framework. In *Proceedings of the 22nd International International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, pages 255–260, 2022.
44. Ahmed Bhayat, Pamina Georgiou, Clemens Eisenhofer, Laura Kovacs and Giles Reger. Lemmaless Induction in Trace Logic. In *Proceedings of the Proceedings of the 15th International Conference on Intelligent Computer Mathematics (CICM)*, volume 13467 of LNCS, pages 191–208, 2022.
45. Ahmad Karimi, Miroslav Stankovic, Marcel Moosbrugger, Laura Kovács, Ezio Bartocci and Efstathia Bura. Distribution Estimation for Probabilistic Loops. In *Proceedings of the 19th International Conference on Quantitative Evaluation of SysTems (QEST)*, volume 13479 of LNCS, pages 26–42, 2022.
46. Marcel Moosbrugger, Ezio Bartocci, Joost-Pieter Katoen and Laura Kovács. The Probabilistic Termination Tool Amber. In *Proceedings of the 24th International Symposium on Formal Methods (FM)*, volume 13047 of LNCS, pages 667–675, 2021.
47. Márton Hajdú, Petra Hozzová, Laura Kovács and Andrei Voronkov. Induction with Recursive Definitions in Superposition. In *Proceedings of the 21st International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, pages 1–10, 2021.

48. Márton Hajdú, Petra Hozzová, Laura Kovács, Johannes Schoisswohl and Andrei Voronkov. Inductive Benchmarks for Automated Reasoning. in *Proceedings of the 14th International Conference on Intelligent Computer Mathematics (CICM)*, volume 12833 of LNCS, pages 124–129, 2021. T
49. Petra Hozzová, Laura Kovács and Jakob Rath. Automated Generation of Exam Sheets for Automated Deduction. in *Proceedings of the 14th International Conference on Intelligent Computer Mathematics (CICM)*, volume 12833 of LNCS, pages 185–196, 2021.
50. Neta Elad, Sophie Rain, Neil Immerman, Laura Kovács and Mooly Sagiv. Summing Up Smart Transitions. In *Proceedings of the 33rd International Conference on Computer-Aided Verification (CAV)*, volume 12759 of LNCS, pages 317–340, 2021.
51. Petra Hozzová, Laura Kovács and Andrei Voronkov. Integer Induction in Saturation. In *Proceedings of the 28th International Conference on Automated Deduction (CADE)*, volume 12699 of LNCS, pages 361–377, 2021.
52. Marcel Moosbrugger, Ezio Bartocci, Joost-Pieter Katoen and Laura Kovács. Automated Termination Analysis of Polynomial Probabilistic Programs. In *Proceedings of the 30th European Symposium on Programming (ESOP)*, volume 12648 of LNCS, pages 491–518, 2021.
53. Ezio Bartocci, Laura Kovács and Miroslav Stankovic. Analysis of Bayesian Networks via Prob-Solvable Loops. In *Proceedings of the 17th International Colloquium on Theoretical Aspects of Computing (ICTAC)*, volume 12545 of LNCS, pages 221–241, 2020.
54. Andreas Humenberger, Nikolaj Bjørner and Laura Kovács. Algebra-based Loop Synthesis. In *Proceedings of the 16th International Conference on integrated Formal Methods (iFM)*, volume 12546 of LNCS, pages 440–459, 2020.
55. Pamina Georgiou, Bernhard Gleiss and Laura Kovács. Trace Logic for Inductive Loop Reasoning. In *Proceedings of the 20th International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, pages 255–263, 2020.
56. Bernhard Gleiss, Laura Kovács and Jakob Rath. Subsumption Demodulation in First-Order Theorem Proving. In *Proceedings of the International Joint Conference on Automated Reasoning (IJCAR)*, volume 12166 of LNCS, pages 297–315, 2020.
57. Laura Kovács, Hanna Lachnitt and Stefan Szeider. Formalizing Graph Trail Properties in Isabelle/HOL. In *Proceedings of the International Conference on Intelligent Computer Mathematics (CICM)*, volume 12236 of LNCS, pages 190–205, 2020.
58. Marton Hajdú, Petra Hozzová, Laura Kovács, Johannes Schoisswohl and Andrei Voronkov. Induction with Generalization in Superposition Reasoning. In *Proceedings of the International Conference on Intelligent Computer Mathematics (CICM)*, volume 12236 of LNCS, pages 123–137, 2020.
59. Ezio Bartocci, Laura Kovács and Miroslav Stankovic. MORA - Automatic Generation of Moment-Based Invariants. In *Proceedings of the 26th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 12078 of LNCS, pages 492–498, 2020.
60. Bernhard Gleiss, Laura Kovács and Lena Schnedlitz. Interactive Visualization of Saturation Attempts in Vampire. In *Proceedings of the 15th International Conference on Integrated Formal Methods (iFM)*, volume 11918 of LNCS, pages 504–513, 2019.
61. Gilles Barthe, Renate Eilers, Pamina Georgiou, Bernhard Gleiss, Laura Kovács and Matteo Maffei. Verifying Relational Properties using Trace Logic. In *Proceedings of the 19th International Conference on Formal Methods in Computer-Aided Design (FMCAD)*, IEEE, pages 170–178, 2019.
62. Ezio Bartocci, Laura Kovács and Miroslav Stankovic. Automatic Generation of Moment-Based Invariants for Prob-Solvable Loops. In *Proceedings of the 17th International Symposium on Automated Technology for Verification and Analysis (ATVA)*, volume 11781 of LNCS, pages 255–276, 2019.
63. Gergely Kovásznai, Gajdár Krisztián and Laura Kovács. Portfolio SAT and SMT Solving of Cardinality Constraints in Sensor Network Optimization. In *Proceedings of the 21st International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, IEEE Computer Society, pages 85–91, 2019.

64. David Damestani, Laura Kovács and Martin Suda. Superposition Reasoning about Quantified Bitvector Formulas. In *Proceedings of the 21st International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, IEEE Computer Society, pages 95-99, 2019.
65. Bernhard Gleiss, Laura Kovács and Simon Robillard. Loop Analysis by Quantification over Iterations. In *Proceedings of the 22nd International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 57 of EasyChair EPIc Series in Computing, pages 381-399, 2018.
66. Evgenii Kotelnikov, Laura Kovács and Andrei Voronkov. A FOOLish Encoding of the Next State Relations of Imperative Programs. In *Proceedings of the 9th International Joint Conference on Automated Reasoning (IJCAR)*, volume 10900 of LNCS, pages 405-421, 2018.
67. Andreas Humenberger, Maximilian Jaroschek and Laura Kovács. Invariant Generation for Multi-Path Loops with Polynomial Assignments. In *Proceedings of the 19th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)*, volume 10747 of LNCS, pages 226-246, 2018.
68. Andreas Humenberger, Maximilian Jaroschek and Laura Kovács. Aligator.jl – A Julia Package for Loop Invariant Generation. In *Proceedings of the 11th Conference on Intelligent Computer Mathematics (CICM)*, volume 11006 of LNCS, pages 111-117, 2018.
69. Bernhard Gleiss, Laura Kovács and Martin Suda. Splitting Proofs for Interpolation. In *Proceedings of the 26th International Conference on Automated Deduction (CADE)*, volume 10395 of LNCS, pages 291-309, 2017.
70. Koen Claessen, Jonatan Kilhamn, Laura Kovács and Bengt Lennartson. A Supervisory Control Algorithm Based on Property-Directed Reachability. In *Proceedings of the 13th International Haifa Verification Conference (HVC)*, volume 10629 of LNCS, pages 115-130, 2017.
71. Andreas Humenberger, Maximilian Jaroschek and Laura Kovács. Automated Generation of Non-Linear Loop Invariants Utilizing Hypergeometric Sequences. In *Proceedings of the 2017 ACM on International Symposium on Symbolic and Algebraic Computation (ISSAC)*, ACM press, pages 221-228, 2017.
72. Laura Kovács and Andrei Voronkov. First-Order Interpolation and Interpolating Proofs Systems. In *Proceedings of 21st International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 46 of EasyChair EPIc Series in Computing 46, pages 49-64, 2017.
73. Laura Kovács, Simon Robillard and Andrei Voronkov. Coming to Terms with Quantified Reasoning. In *Proceedings of ACM SIGACT-SIGPLAN International Symposium on Principles of Programming Languages (POPL)*, pages 260-270, ACM press, 2017.
74. Evgenii Kotelnikov, Laura Kovács, Martin Suda and Andrei Voronkov. A Clausal Normal Form Translation for FOOL. In *Proceedings of the 2nd Global Conference on Artificial Intelligence (GCAI)*, volume 41 of EPIc Series in Computing, pages 53-71, 2016.
75. Evgenii Kotelnikov, Laura Kovács, Giles Reger and Andrei Voronkov. The Vampire and The FOOL. In *Proceedings of the ACM SIGPLAN Conference on Certified Programs and Proofs (CPP)*, ACM Press, pages 37-48, 2016.
76. Wolfgang Ahrendt, Laura Kovács, and Simon Robillard. Reasoning About Loops Using Vampire in KeY. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 9450 of LNCS, pages 434-443, 2015.
77. Evgenii Kotelnikov, Laura Kovács, and Andrei Voronkov. A First Class Boolean Sort in First-Order Theorem Proving and TPTP. In *Proceedings of the International Conference on Intelligent Computer Mathematics (CICM) – Calculemus Track*, volume 9150 of LNCS, pages 71-86, 2015.
78. Pavol Cerny, Thomas A. Henzinger, Laura Kovács, Arjun Radhakrishna, and Jakob Zwirchmayr. Segment Abstraction for Worst-Case Execution Time Analysis. In *Proceedings of the European Symposium on Programming (ESOP)*, volume 9032 of LNCS, pages 105-131, 2015.
79. Ashutosh Gupta, Laura Kovács, Bernhard Kragl and Andrei Voronkov. Extensional Crisis and Proving Identity. In *Proceedings of the International Symposium on Automated Technology for Verification and Analysis (ATVA)*, volume 8837 of LNCS, pages 185-200, 2014.

80. Mohammad Reza Shoaie, Laura Kovács, and Bengt Lennartson. Supervisory Control of Discrete-Event Systems via IC3. In *Proceedings of the International Haifa Verification Conference (HVC)*, volume 8855 of LNCS, pages 252-266, 2014.
81. Armin Biere, Ioan Dragan, Laura Kovács, and Andrei Voronkov. Experimenting with SAT Solvers in Vampire. In *Proceedings of the Mexican International Conference on Artificial Intelligence (MICAI)*, volume 8856 of LNCS, pages 431-442, 2014.
82. Ioan Dragan and Laura Kovács. Lingva: Generating and Proving Program Properties using Symbol Elimination. In *Proceedings of the International Conference on Perspectives of System Informatics (PSI)*, volume 8974 of LNCS, pages 67-75, 2014.
83. Régis Blanc, Ashutosh Gupta, Laura Kovács, and Bernhard Kragl. Tree Interpolation in Vampire. In *Proceedings of the International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR)*, volume 8312 of LNCS, pages 173-181, 2013.
84. Laura Kovács, Andrei Mantsivoda, and Andrei Voronkov. The Inverse Method for Many-Valued Logics. In *Proceedings of the Mexican International Conference on Artificial Intelligence (MICAI)*, volume 8265 of LNAI, pages 12-23, 2013.
85. Laura Kovács, Natasha Sharygina, and Simone Fulvio Rollini. A Parametric Interpolation Framework for First-Order Theories. In *Proceedings of the Mexican International Conference on Artificial Intelligence (MICAI)*, volume 8265 of LNAI, pages 24-40, 2013.
86. Armin Biere, Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. SmacC: A Retargetable Symbolic Execution Engine. In *Proceedings of the International Symposium on Automated Technology for Verification and Analysis (ATVA)*, volume 8172 of LNCS, pages 482-286, 2013.
87. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. WCET Squeezing: On-Demand Feasibility Refinement for Proven Precise WCET-Bounds. In *Proceedings of the International Conference on Real-Time Networks and Systems (RTNS)*, ACM, pages 161-170, 2013.
88. Ioan Dragan, Konstantin Korovin, Laura Kovács, and Andrei Voronkov. Bound Propagation for Arithmetic Reasoning in Vampire. In *Proceedings of the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, IEEE, pages 169-176, 2013.
89. Kryštof Hoder and Laura Kovács and Andrei Voronkov. Playing in the Grey Area of Proofs. In *Proceedings of ACM SIGACT-SIGPLAN International Symposium on Principles of Programming Languages (POPL)*, volume 47 of *ACM SIGPLAN Notices*, pages 259-272, 2012.
90. Armelle Bonenfant, Hugues Cassé, Marianne De Michiel, Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. FFX: A Portable WCET Annotation Language. In *Proceedings of the ACM International Conference on Real-Time and Network Systems (RTNS)*, pages 91-100, ACM, 2012.
91. Kryštof Hoder, Andreas Holzer, Laura Kovács, and Andrei Voronkov. Vinter: A Vampire-Based Tool for Interpolation. In *Proceedings of Asian Symposium on Programming Languages and Systems (APLAS)*, volume 7705 of LNCS, pages 148-146, 2012.
92. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. r-TuBound: Loop Bounds for WCET Analysis (Tool Paper). In *Proceedings of International Conference on Logic for Programming, Artificial Intelligence, and Reasoning (LPAR)*, volume 7180 of LNCS, pages 435-444, 2012.
93. Laura Kovács, Béla Paláncz, and Levente Kovács. Solving Robust Glucose-Insulin Control by Dixon Resultant Computations. In *Proceedings of International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, IEEE Computer Society 978-0-7695-4934-7/12, pages 53-61, 2012.
94. Adalbert Kovács and Laura Kovács. A Hodographic Approximation Method for Analyzing the Fluid Motion Through Network Profiles. In *Proceedings of 23rd International DAAAM Symposium*, volume 23 of *DAAAM International*, pages 125-128, 2012.
95. Adalbert Kovács, Laura Kovács, and Levente Kovács. The Boundary Element Method in the Study of Non-Stationary Movements Through Network Profiles. In *Proceedings of 13th International Conference on Mathematics and its Applications (ICMA)*, Scientific Bulletin of Politehnica University Timișoara (ISSN 1224-6069), pages 241-248, 2012.

96. Laura Kovács and Adalbert Kovács. Symbol Elimination and its Applications in Program Verification. In *Proceedings of 13th International Conference on Mathematics and its Applications (ICMA)*, Scientific Bulletin of Politehnica University Timișoara (ISSN 1224-6069), pages 329–334, 2012.
97. Kryštof Hoder, Laura Kovács, and Andrei Voronkov. Case Studies on Invariant Generation Using a Saturation Theorem Prover. In *Proceedings of the Mexican International Conference on Artificial Intelligence (MICAI)*, volume 7094 of *LNAI*, pages 1–15, 2011.
98. Kryštof Hoder, Laura Kovács, and Andrei Voronkov. Invariant Generation in Vampire. In *Proceedings of the International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 6605 of *LNCS*, pages 60–64, 2011.
99. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. Symbolic Loop Bound Computation for WCET Analysis. In *Proceedings of the International Conference on Perspectives of System Informatics (PSI)*, volume 7162 of *LNCS*, pages 224–239, 2011.
100. Laura Kovács, Georg Moser, and Andrei Voronkov. On Transfinite Knuth-Bendix Orders. In *Proceedings of the International Conference on Automated Deduction (CADE)*, volume 6803 of *LNAI*, pages 384–399, 2011.
101. Adalbert Kovács and Laura Kovács. Analyzing the Fluid Motion Through Network Profiles Using the Boundary Element Method. In *Proceedings of 22nd International DAAAM Symposium: Intelligent Manufacturing and Automation*, volume 2 of *DAAAM International*, pages 1147–1148, 2011.
102. Laura Kovács and Adalbert Kovács. Aligator: Experiments and Limitations. In *Proceedings of 22nd International DAAAM Symposium: Intelligent Manufacturing and Automation*, volume 2 of *DAAAM International*, pages 1145–1146, 2011.
103. Régis Blanc, Thomas A. Henzinger, Thibaud Hottelier, and Laura Kovács. ABC: Algebraic Bound Computation for Loops. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 6355 of *LNAI*, pages 103–118, 2010.
104. Thomas A. Henzinger, Thibaud Hottelier, Laura Kovács, and Andrey Rybalchenko. Aligators for Arrays (Tool Paper). In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, volume 6397 of *LNCS*, pages 348–356, 2010.
105. Thomas A. Henzinger, Thibaud Hottelier, Laura Kovács, and Andrei Voronkov. Invariant and Type Inference for Matrices. In *Proceedings of the International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)*, volume 5944 of *LNCS*, pages 163–179, 2010.
106. Kryštof Hoder and Laura Kovács and Andrei Voronkov. Interpolation and Symbol Elimination in Vampire. In *Proceedings of the International Joint Conference on Automated Reasoning (IJCAR)*, volume 6173 of *LNCS*, pages 188–195, 2010.
107. Laura Kovács. A Complete Invariant Generation Approach for P-solvable Loops. In *Proceedings of the International Conference on Perspectives of System Informatics (PSI)*, volume 5947 of *LNCS*, pages 242–256, 2009.
108. Laura Kovács and Andrei Voronkov. Finding Loop Invariants for Programs over Arrays Using a Theorem Prover. In *Proceedings of the International Conference on Fundamental Approaches to Software Engineering (FASE)*, volume 5503 of *LNCS*, pages 470–485, 2009.
109. Laura Kovács and Andrei Voronkov. Interpolation and Symbol Elimination. In *Proceedings of the International Conference on Automated Deduction (CADE)*, volume 5663 of *LNCS*, pages 199–213, 2009.
110. Laura Kovács and Adalbert Kovács. Deciding Properties of Affine Loops. In *Proceedings of the International Symposium of Mathematics and its Applications (ISMA)*, Scientific Bulletins of the Politehnica, University of Timișoara, Transactions on Mathematics and Physics, pages 401–406, 2009.
111. Laura Kovács and Adalbert Kovács. Solving the Four Fundamental Problems from the Theory of Profile Grids via BEM. In *Proceedings of the International Symposium of Mathematics and its Applications (ISMA)*, Scientific Bulletins of the Politehnica, University of Timișoara, Transactions on Mathematics and Physics, pages 393–400, 2009.

112. Thomas A. Henzinger, Thibaud Hottelier, and Laura Kovács. Valigator: A Verification Tool with Bound and Invariant Generation. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR)*, LNCS, pages 333–342, 2008.
113. Laura Kovács. Aligator: A Mathematica Package for Invariant Generation (System Description). In *Proceedings of the International Joint Conference on Automated Reasoning (IJCAR)*, volume 5195 of LNCS, pages 275–282, 2008.
114. Laura Kovács. Invariant Generation for P-solvable Loops with Assignments Only. In *Proceedings of Computer Science in Russia (CSR)*, volume 5010 of LNCS, pages 349–359, 2008. **Best Paper Award in the Application Track.**
115. Laura Kovács. Reasoning Algebraically About P-solvable Loops. In *Proceedings of the International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, volume 4963 of LNCS, pages 249–264, 2008.
116. Laura Kovács. Aligator: a Package for Reasoning about Loops. In *Proceedings of the International Conference on Logic for Programming, Artificial Intelligence and Reasoning – Short Papers (LPAR)*, pages 5–8, 2007.
117. Laura Kovács, Nikolaj Popov, and Tudor Jebelean. Combining Logic and Algebraic Techniques for Program Verification in Theorema. In *Proceedings of the International Conference on Leveraging Applications of Formal Methods, Verification and Validation (ISOLA)*, pages 59–67, 2006.
118. Laura Kovács and Tudor Jebelean. An Algorithm for Automated Generation of Invariants for Loops with Conditionals. In *Proceedings of the International Conference on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, IEEE Computer Society, pages 245–249, 2005.
119. Tudor Jebelean, Laura Kovács, and Nikolaj Popov. Experimental Program Verification in the Theorema System. In *Proceedings of the International Conference on Leveraging Applications of Formal Methods (ISOLA)*, pages 92–99, 2004.
120. Laura Kovács and Tudor Jebelean. Automated Generation of Loop Invariants by Recurrence Solving in Theorema. In *Proceedings of the International Conference on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, pages 451–464, 2004.
121. Adalbert Kovács and Laura Kovács. The Calculus Algorithm for the Integral Equation of the Compressible Fluid’s Speeds Potentials through Specialized Networks (in german). In *Proceedings of the International Symposium of Mathematics and its Application (ISMA)*, Scientific Bulletins of the Politehnica” University of Timișoara, Transactions on Mathematics and Physics, pages 427–434, 2003.
122. Laura Kovács and Tudor Jebelean. Generation of Invariants in Theorema. In *Proceedings of the International Symposium of Mathematics and its Application (ISMA)*, Scientific Bulletins of the Politehnica” University Timișoara, Transactions on Mathematics and Physics, pages 407–415, 2003.
123. Laura Kovács and Tudor Jebelean. Practical Aspects of Imperative Program Verification in Theorema. In *Proceedings of the International Conference on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC)*, pages 317–320, 2003.

## Refereed Papers in Workshop Proceedings

124. Nikolaj Bjørner, Clemens Eisenhofer, and Laura Kovács. User-Propagators for Custom Theories in SMT Solving. In *Proceedings of the 10th International Workshop on Satisfiability Modulo Theories (SMT)*, volume 3185 of CEUR Workshop Proceedings, pages 70-79, 2022.
125. Thomas Hader and Laura Kovács. An SMT Approach for Solving Polynomials over Finite Fields. In *Proceedings of the 10th International Workshop on Satisfiability Modulo Theories (SMT)*, volume 3185 of CEUR Workshop Proceedings, pages 90-98, 2022.
126. Petra Hozzová, Laura Kovács, and Andrei Voronkov. Towards Synthesis in Superposition. In *Proceedings of the 7th International Workshop on Synthesis, (SYNTH)*, EasyChair Preprint no. 818, 2022.
127. Márton Hajuú, Laura Kovács, Michael Rawson, and Andrei Voronkov. The Vampire Approach to Induction. In *Proceedings of the 7th International Workshop on Practical Aspects of Automated Reasoning (PAAR)*, volume 3201 of CEUR Workshop Proceedings, 2022.



128. Johannes Schoisswohl and Laura Kovács. Automating Induction by Reflection. In *Proceedings of the 16th International Workshop on Logical Frameworks and Meta-Languages: Theory and Practice (LFMTP)*, volume 337 of EPTCS, pages 39–54, 2021.
129. Yuting Chen, Laura Kovács and Simon Robillard. Theory-Specific Reasoning about Loops with Arrays using Vampire. In *Proceedings of the 3rd Vampire Workshop*, volume 44 of EPiC Series in Computing, pages 16-32, 2017.
130. Laura Kovács and Simon Robillard. Reasoning About Loops Using Vampire. In *Proceedings of the 1st and 2nd Vampire Workshops 2014 and 2015*, volume 38 of EPiC Series in Computing, pages 52-62, 2015.
131. Armin Biere, Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. The Auspicious Couple: Symbolic Execution and WCET Analysis. In *Proceedings of the International Workshop on Worst-Case Execution Time Analysis (WCET)*, volume 30 of OASICS, pages 53-63, 2013.
132. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. An Evaluation of WCET Analysis using Symbolic Loop Bounds. In *Proceedings of the International Workshop on Worst-Case Execution Time Analysis (WCET)*, pages 93–103, 2011.
133. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. Practical Experiments with Symbolic Loop Bound Computation for WCET Analysis. In *Proceedings of the 28th Workshop of the GI-Working group on Programming Languages and Computing Concepts*, 2011. Technical Report of the Computer Science Faculty of the Christian-Albrechts University Kiel.
134. Laura Kovács. Invariant Generation with Aligator. In *Proceedings of Austrian-Japanese Workshop on Symbolic Computation in Software Science (SCCS)*, number 08-08 in RISC-Linz Report Series, pages 123–136, 2008.
135. Laura Kovács. Automated Invariant Generation by Algebraic Techniques for Imperative Program Verification in Theorema. In *Proceedings of the International Workshop on Invariant Generation (WING)*, number 07-07 in RISC Report Series, pages 56–69, 2007.
136. Laura Kovács and Tudor Jebelean. Finding Polynomial Invariants for Imperative Loops in the Theorema System. In *Proceedings of the Verify Workshop, IJCAR, The 2006 Federated Logic Conferences (FLoC)*, pages 52–67, 2006.
137. Laura Kovács, Nikolaj Popov, and Tudor Jebelean. A Verification Environment for Imperative and Functional Programs in the Theorema System. In *Proceedings of the South-East European Workshop on Formal Methods (SEEFM)*, 2005.
138. Laura Kovács, Tudor Jebelean, and Nikolaj Popov. Verification of Imperative Programs in Theorema. In *Proceedings of the South-East European Workshop on Formal Methods (SEEFM)*, pages 140–147, 2003.
139. Laura Kovács. Optical Music Recognition. In *Proceedings of the Symposium of Informatics in Higher Education, Symposium of Mathematics and its Applications*, 2002. Electronic Proceedings.

## 5 Other Publications

### Editorial Papers

140. James H. Davenport, Laura Kovács, and Daniela Zaharie, editors. Foreword to the Special Issue of the 18th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC). *Mathematics in Computer Science*, 13(4): 459–460, 2019.
141. Pascal Schreck, Tetsuo Ida, and Laura Kovács, editors. Foreword to the Special Issue on Formalization of Geometry, Automated and Interactive Geometric Reasoning. *Annals of Mathematics and Artificial Intelligence (AMAI)*, 85(2-4): 71-72, 2019.
142. Adel Bouhoula, Bruno Buchberger, Laura Kovács, and Temur Kutsia. Editorial to the Special issue on Symbolic Computation in Software Science. *Journal of Symbolic Computation*, 69: 1-2, 2015.
143. Laura Kovács, Rosario Pugliese, Josep Silva, and Francesco Tiezzi. Editorial to the Special issue on Automated Specification and Verification of Web Systems. *Journal of Logic and Algebraic Programming*, 82(4): 241-242, 2013.

144. Nikolaj Bjørner and Laura Kovács. Foreword to the Special Issue on Invariant Generation and Advanced Techniques for Reasoning about Loops. *Journal of Symbolic Computation*, 47(12):1413–1415, 2012.
145. Laura Kovács and Temur Kutsia. Editorial to the Special Issue on Automated Specification and Verification of Web Systems. *Journal of Applied Logic*, 10(1):1, 2012.
146. Martin Giese, Andrew Ireland, and Laura Kovács. Introduction to the Special Issue on Invariant Generation and Advanced Techniques for Reasoning about Loops. *Journal of Symbolic Computation*, 45(11):1097–1100, 2010.

## Edited Volumes

147. Jasmin Blanchette, Laura Kovács and Dirk Pattinson, editors. Proceedings of the 11th International Joint Conference on Automated Reasoning (IJCAR), volume 13385 of Lecture Notes in Computer Science, Springer, 2022.
148. Laura Kovács and Karl Meinke, editors. Proceedings of the 16th International Conference on Tests and Proofs (TAP), volume 13361 of Lecture Notes in Computer Science, Springer, 2022.
149. Igor Konnov and Laura Kovács, editors. Proceedings of the 31st International Conference on Concurrency Theory (CONCUR), volume 171 of the LIPIcs Series, Schloss Dagstuhl - Leibniz-Zentrum für Informatik 2020.
150. Elvira Albert and Laura Kovács, editors. Proceedings of the 23rd International Conference on Logic for Programming, Artificial Intelligence and Reasoning (LPAR), volume 73 of the EPIc Series in Computing, EasyChair, 2020.
151. Laura Kovács and Andrei Voronkov, editors. Proceedings of the 5th and 6th Vampire Workshops. Volume 71 of the EPIc Series in Computing, EasyChair, 2020.
152. James H. Davenport, Laura Kovács, and Daniela Zaharie, editors. Special Issue of the 18th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC). Volume 13 of *Mathematics in Computer Science*, 2019.
153. Pascal Schreck, Tetsuo Ida, and Laura Kovács, editors. Special Issue on Formalization of Geometry, Automated and Interactive Geometric Reasoning. Volume 85 of *Annals of Mathematics and Artificial Intelligence (AMAI)*, 2019.
154. Laura Kovács and Andrei Voronkov, editors. Proceedings of the 4th Vampire Workshop. Volume 53 of the EPIc Series in Computing, 2018.
155. Laura Kovács and Andrei Voronkov, editors. Proceedings of the 3rd Vampire Workshop. Volume 44 of the EPIc Series in Computing, 2017.
156. Laura Kovács and Andrei Voronkov, editors. Proceedings of the 1st and 2nd Vampire Workshops. Volume 38 of the EPIc Series in Computing, 2016.
157. Adel Bouhoula, Bruno Buchberger, Laura Kovács, and Temur Kutsia, editors. Special issue on Symbolic Computation in Software Science. Volume 69 of *Journal of Symbolic Computation*, 2015.
158. Laura Kovács and Temur Kutsia, editors. *Proceedings of the Fifth International Symposium on Symbolic Computation in Software Sciences*, Volume 15 of the EPIc Series in Computing and RISC Technical Report 13-06, 2013.
159. Laura Kovács, Rosario Pugliese, Josep Silva, and Francesco Tiezzi. Special issue on Automated Specification and Verification of Web Systems. volume 82 of *Journal of Logic and Algebraic Programming*, 2013.
160. Nikolaj Bjørner, Krishnendu Chatterjee, Laura Kovács, and Rupak M. Majumdar, editors. *Games and Decisions for Rigorous Systems Engineering (Dagstuhl Seminar 12461)*, volume 2 of *Dagstuhl Reports*. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2013.
161. Nikolaj Bjørner and Laura Kovács, editors. *Special Issue on Invariant Generation and Advanced Techniques for Reasoning about Loops*, volume 47 of *Journal of Symbolic Computation*, 2012.

162. Laura Kovács and Temur Kutsia, editors. *Special Issue on Automated Specification and Verification of Web Systems*, volume 10 of *Journal of Applied Logic*, 2012.
163. Laura Kovács, Rosario Pugliese, and Francesco Tiezzi, editors. *Proceedings of the 7th International Workshop on Automated Specification and Verification of Web Systems*, volume 61 of *EPTCS*, 2011.
164. Nikolaj Bjørner and Laura Kovács, editors. *Proceedings of the International Workshop on Invariant Generation (WING)*. IJCAR, University of Edinburgh, 2010.
165. Martin Giese, Andrew Ireland, and Laura Kovács, editors. *Special Issue on Invariant Generation and Advanced Techniques for Reasoning about Loops*, volume 45 of *Journal of Symbolic Computation*, 2010.
166. Laura Kovács and Temur Kutsia, editors. *Proceedings of the International Workshop on Automated Specification and Verification of Web System (WWV)*. Vienna University of Technology, 2010.
167. Andrew Ireland and Laura Kovács, editors. *Proceedings of the Second International Workshop on Invariant Generation (WING)*. ETAPS, University of York, 2009.

## Abstracts in Conference and Workshop Proceedings

168. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. An Evaluation of WCET Analysis using Symbolic Loop Bounds (abstract/presentation). In *Proceedings of the 16th Colloquium on Programming Languages and Programming Foundations (KPS)*, page 200, 2011. Westfälische Wilhelms University Münster.
169. Jens Knoop, Laura Kovács, and Jakob Zwirchmayr. An Evaluation of WCET Analysis using Symbolic Loop Bounds (extended Abstract). In *Proceedings of the Annual Doctoral Workshop on Mathematical and Engineering Methods in Computer Science (MEMICS)*, page 119, 2011. Lednice, Czech Republic.

## Theses

170. Laura Kovács. *Symbol Elimination in Program Analysis*. Habilitation Thesis, Vienna University of Technology, Austria, November 2012.
171. Laura Kovács. *Automated Invariant Generation by Algebraic Techniques for Imperative Program Verification in Theorema*. PhD thesis, with highest distinction. RISC, Johannes Kepler University Linz, Austria, October 2007. RISC Technical Report No. 07-16. Supervisor: Prof. Tudor Jebelean.
172. Laura Kovács. *Verification of Imperative Programs in Theorema*. Master's thesis, West University of Timișoara, Romania, February 2004. Advisors: Prof. Tudor Jebelean and Prof. Viorel Negru.
173. Laura Kovács. *Optical Music Recognition*. Diploma Thesis, West University of Timișoara, Romania, June 2002. Advisor: Dr. Lucian Cucu.

## Progress Reports

174. Bruno Buchberger, Tudor Jebelean, Wolfgang Windsteiger, Temur Kutsia, Koji Nakagawa, Judith Robu, Florina Piroi, Adrian Craciun, Nikolaj Popov, Gábor Kuspér, Markus Rosenkranz, Laura Kovács, and Camelia Kocsis. F 1302: THEOREMA: Proving, Solving and Computing in General Domains. In P. Paule and U. Langer, editors, *Special Research Program (SFB) F 013, Numerical and Symbolic Scientific Computing, Proposal for Continuation, Part I: Progress Report, April 2001-September 2003*, pages 148–170. Johannes Kepler University Linz, Austria, 2003.
175. Bruno Buchberger, Tudor Jebelean, Wolfgang Windsteiger, Temur Kutsia, Koji Nakagawa, Judith Robu, Florina Piroi, Adrian Craciun, Nikolaj Popov, Gábor Kuspér, Markus Rosenkranz, Laura Kovács, and Camelia Kocsis. F 1302: THEOREMA: Proving, Solving, and Computing in the Theory of Hilbert Spaces. In P. Paule and U. Langer, editors, *Special Research Program (SFB) F 013, Numerical and Symbolic Scientific Computing, Proposal for Continuation, Part II: Proposal*, pages 58–73. Johannes Kepler University Linz, Austria, 2003.

## 6 Invited Lectures and Talks

### Invited Lectures at Summer Schools

1. Laura Kovács. TBA. Invited lecturer at the 2024 Marktoberdorf Summer School, Marktoberdorf, Germany, August 6-17, 2024.
2. Laura Kovács. First-Order Theorem Proving and Vampire. Invited lecturer (online) at the 7th School on Theoretical Informatics and Formal Methods (ETMF), Brazil, December 6, 2022.
3. Laura Kovács. First-Order Theorem Proving and Vampire. Invited lecturer at the 15th Summer School on Modelling and Verification of Parallel Processes (MOVEP), Aalborg, Denmark, June 13–17, 2022.
4. Laura Kovács. First-Order Theorem Proving and Vampire. Invited lecturer (online) at “Logical Perspectives” Summer School, Moscow, Russia, June 14-16, 2021.
5. Laura Kovács. First-Order Interpolation. Invited lecturer at “SAT/SMT/AR Summer School”, Lisbon, Portugal, July 2019.
6. Laura Kovács. First-Order Interpolation in the Grey Area of Proofs. Invited lecturer at “SYSMICS (Syntax meets Semantics – Methods, Interactions, and Connections in Substructural Logics) Summer School”, Les Diablerets, Switzerland, August 2018.
7. Laura Kovács. First-Order Interpolation. Invited lecturer at “SAT/SMT/AR Summer School”, Manchester, UK, July 2018.
8. Laura Kovács and Andrei Voronkov. First-Order Theorem Proving in Rigorous Systems Engineering. Invited lecturer at “RiSE/SHiNE Winter School”, Vienna, Austria, February 2018.
9. Laura Kovács and Martin Suda. First-Order Theorem Proving and Vampire. Invited lecturer at “LoVE: RiSE & LogiCS Spring School on Logic and Verification”, Vienna, Austria, April 2016.
10. Laura Kovács. Program Assertion Synthesis using Symbol Elimination. Invited lecturer at the VTSA Summer School on Verification Technology, Systems, and Applications, Luxemburg, October 2014.
11. Laura Kovács. First-Order Theorem Proving and Vampire. Invited lecturer at the ReRiSE Advanced Winter School on Reasoning Engines for Rigorous Systems Engineering, Linz, Austria, February 2014.
12. Laura Kovács. Automated Theorem Proving. Invited lecturer at the ARiSE/VCLA Winter School on Verification, Vienna, Austria, February 2012.
13. Laura Kovács. Invariant Generation by Algebraic Techniques for Software Verification. Invited lecturer at the 4th International Tbilisi Summer School in Logic and Language, Georgia, September 2008.

### Invited Conference and Workshop Talks

14. Laura Kovács. TBA. Invited Talk at the International Joint Conference on Automated Reasoning, Nancy, France, July 1-6, 2024.
15. Laura Kovács. TBA. Invited Talk at the 44th International Conference on Formal Techniques for Distributed Objects, Components, and Systems (FORTE), Groningen, The Netherlands, June 17-21, 2024.
16. Laura Kovács. TBA. Invited Talk at the ELLIIT Annual Workshop of the Excellence Center at Linköping – Lund in Information Technology, Lund, Sweden, March 7-8, 2024.
17. Laura Kovács. Algebraic Reasoning for (Un)Solvable Loops. Invited Talk at the 48th International Symposium on Mathematical Foundations on Computer Science (MFCS), Bordeaux, France, August 28-31, 2023.
18. Laura Kovács. Symbolic Computation in Automated Reasoning. Keynote Talk at the 25th International Symposium on Formal Methods (FM), Lübeck, Germany, March 7-9, 2023.
19. Laura Kovács. Symbolic Computation for Software Analysis. Invited Talk at the Symbolic Computation and Beyond (BB80) Symposium on the Occasion of the 80th Birthday of RISC-founder Bruno Buchberger, RISC-Linz, Austria, 25 October, 2022.

20. Laura Kovács. Automated Reasoning for Trustworthy Software. Keynote Talk at the Austrian Computer Science Day, IST Austria, 21 June, 2022.
21. Laura Kovács. Algebraic Synthesis of Loops and their Invariants. Invited talk at the Workshop on Differential Algebra, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, June 6-8, 2022.
22. Laura Kovács. Induction in Saturation-Based Reasoning. Invited (online) talk at the 14th Conference on Intelligent Computer Mathematics (CICM 2021) Timișoara, Romania, July 26-31, 2021.
23. Laura Kovács. Algebra-based Analysis of Polynomial Probabilistic Programs. Invited (online) talk at the Verifying Probabilistic Programs (VeriProP) Workshop, affiliated with CAV 2021, July 19, 2021.
24. Laura Kovács. Trace Logic for Automating Loop Reasoning. Invited (online) talk at the 9th International Workshop on Verification and Program Transformation (VPT 2021), Luxembourg, March 29, 2021.
25. Laura Kovács. Algebra-Based Synthesis of Loops and Their Invariants. Invited (online) talk at the 22nd International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI), Copenhagen, Denmark, January 18, 2021.
26. Laura Kovács. Automated Reasoning for System Security and Privacy. Invited talk at the sec4dev Conference & Bootcamp – Security for Software Developers, Vienna, Austria, February 26, 2020.
27. Laura Kovács. 60 Shades of Grey. Invited talk at the 60th Birthday Conference ANDREI-60 of Andrei Voronkov: Automating New-Era Deductive Reasoning Event In Iberia, Tbilisi, Georgia, May 20, 2019.
28. Laura Kovács. Symbolic Computation and Automated Reasoning for Program Analysis. Invited talk at the 23rd IEEE International Conference on Intelligent Engineering Systems (INES), Gödöllő, Hungary, April 26, 2019.
29. Laura Kovács. Symbol Elimination in Program Analysis. Invited talk at the 2nd Facebook Testing and Verification Symposium (FaceTAV), London, UK, November 28, 2018.
30. Laura Kovács. Symbol Elimination for Program Analysis. Invited talk at the 6th International Conference on Highlights of Logic, Games and Automata, Berlin, Germany, September 19, 2018.
31. Laura Kovács. Automated Reasoning for Systems Engineering. Invited talk at Austrian Computer Science Day, Salzburg, Austria, June 15, 2018.
32. Laura Kovács. Automated Reasoning for Systems Engineering. Invited talk at 10th International Symposium on Foundations of Information and Knowledge Systems (FoIKS), Budapest, Hungary, 14-18 May, 2018.
33. Laura Kovács. Automated Reasoning for Systems Engineering. Invited talk at 2018 IEEE International Conference on Future IoT Technologies (Future IoT 2018), Eger, Hungary, 18-19 January, 2018.
34. Laura Kovács. Symbol Elimination for Program Analysis. Invited talk at ETH Zürich Workshop on Software Correctness and Reliability, Zürich, Switzerland, 13-14 October, 2017.
35. Laura Kovács. First-Order Interpolation and Grey Areas of Proofs. Invited talk at the 26th EACSL Annual Conference on Computer Science Logic (CSL), Stockholm, Sweden, 20-24 August, 2017.
36. Laura Kovács. Algebraic Reasoning for Program Analysis. Invited talk at the 23th International Conference on Mathematical Foundations of Programming Semantics (MFPS), Ljubljana, Slovenia, 12-13 June, 2017.
37. Laura Kovács. Automated Reasoning for Systems Engineering. Invited talk at the 12th European Computer Science Summit (ECSS), Budapest, Hungary, 24-26 October, 2016.
38. Laura Kovács. Symbolic Computation and Automated Reasoning for Program Analysis. Invited talk at the 12th International Conference on integrated Formal Methods (iFM), Reykjavik, Island, June 1-5, 2016.
39. Laura Kovács. First-Order Theorem Proving and Program Analysis. Invited talk at the LCCC-ACCESS workshop on Model-Based Engineering, Lund University, Sweden, 4-5 May 2015.
40. Laura Kovács. Generating Program Properties using Symbol Elimination. Invited talk at the 14th International Workshop on Automated Verification of Critical Systems, University of Twente, The Netherlands, 24-36 September 2014.

41. Laura Kovács. Symbol Elimination in Program Analysis. Invited talk at the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Timisoara, Romania, 26-29 September 2011.
42. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited talk at the Workshop on Symbolic Computation and Software Verification (SCSV), Tsukuba University, Japan, 8-9 April 2010.

## Invited Seminar Talks

43. Laura Kovács. Teaching Formal Reasoning at TU Wien. Invited Seminar Talk at the FMTea Tutorial Series of the FME Teaching Committee (online), June 16, 2023.
44. Laura Kovács. First-Order Theorem Proving. Invited Seminar Talk at Certora (online), May 2, 2023.
45. Petra Hozzová and Laura Kovács. Automation of Induction in Saturation. Invited Talk at the IPAM workshop on Machine Assisted Proofs, UCLA, USA, 13-17 February, 2023.
46. Laura Kovács. Vampire Reasoning for Trustworthy Software. Invited Webinar Talk at the 68NQRT Webinar Series of Inria Rennes, France, February 2, 2023.
47. Laura Kovács and Martin Suda. First-Order Theorem Proving – Theory and Practice. Invited survey at the Dagstuhl Seminar 22411 on Theory and Practice of SAT and Combinatorial Solving, October 10, 2022.
48. Laura Kovács. Getting Saturated with Induction. Invited technical talk at Automated Reasoning Symposium, Amazon Web Services, 29 September, 2022.
49. Laura Kovács. Automated Program Reasoning. Invited webinar talk at Informatics Europe, 30 May, 2022.
50. Laura Kovács. Getting Saturated with Induction. Invited (online) talk at TU Kaiserslautern, Germany, 27 January, 2022.
51. Laura Kovács. Algebra-Based Analysis of Polynomial Probabilistic Programs. Invited (online) talk in the Distinguished Lecture Series of the Max Planck Institute for Software Systems (MPI-SWS), Germany, 22 September, 2021.
52. Laura Kovács. Automated Reasoning in Systems Engineering. Invited (online) seminar talk in the CS Graduate Seminar of the King Abdullah University of Science and Technology - KAUST, Kingdom of Saudi Arabia, 22 March, 2021.
53. Laura Kovács. ARTIST: Automated Reasoning with Theories and Induction for Software Technologies. Invited (online) talk in the PhD/PI Successful Stories seminar series at the ICT Doctoral School of the University of Trento, Italy, 11 March, 2021.
54. Laura Kovács. Algebra-based Analysis of Polynomial Probabilistic Programs. Invited webinar colloquium talk at the CS@GSSI/ICE-TCS Seminar Series of Reykjavik University, Iceland, 17 December, 2020.
55. Laura Kovács. First-Order Interpolation. Invited colloquium talk at the PhD Research Seminar of the Faculty of Computer Science of the West University of Timișoara, Romania, 29 November, 2019.
56. Laura Kovács. Symbol Elimination for Program Analysis. Invited colloquium talk at the Theoretical Computer Science Seminar Series of the KTH Royal Institute of Technology, Stockholm, Sweden, 18 May, 2015.
57. Laura Kovács. Formal Methods in Software Design and Verification. Invited colloquium talk at SAAB Technical Seminar, Linköping, Sweden, 12 November, 2013.
58. Laura Kovács. Formal Methods for Program Verification. Invited colloquium talk at SAAB Kallebäck, Gothenburg, Sweden, 6 November, 2013.
59. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquium talk at Microsoft Cambridge, UK, 19 September 2012.
60. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquium talk at VERIMAG, Grenoble, France, 5 April 2012. j

61. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquium talk at IST/TU Wien Rigorous System Engineering Seminar, TU Wien, 8 March 2012.
62. Laura Kovács. Experiments with Invariant Generation Using a Saturation Theorem Prover. Invited colloquium talk at AdaCore, Paris, France, 18 April 2011.
63. Laura Kovács. RiSE: Rigorous Systems Engineering. Invited colloquium talk at the Research Seminar for Master Students, West University of Timisoara, Romania, 25-27 May 2011.
64. Laura Kovács. Symbol Elimination in Program Analysis. Invited colloquium talk at the Technical University Graz, Austria, 31 May 2011.
65. Laura Kovács. Symbol Elimination in Program Analysis. Invited colloquium talk at Helsinki Institute for Information Technology (HIIT), 23 September 2011.
66. Laura Kovács. Aligators and Arrays. Invited colloquium talk at IST/TU Wien Rigorous System Engineering Seminar, IST Austria, 28 October 2010.
67. Laura Kovács. Symbol Elimination and Interpolation. Invited colloquium talk at the University of Verona, Italy, 21 September 2010.
68. Laura Kovács. Symbol Elimination and Interpolation for Software Verification. Invited colloquium talk at Intel, Haifa, Israel, 20 December 2010.
69. Laura Kovács. Program Verification using Algebraic Techniques. Invited talk at the Graduate Seminar: Logic and Information, Joint Workshop of the Universities of Bern, Fribourg, and Neuchâtel, Switzerland, 19 November 2009.
70. Laura Kovács. Finding Loop Invariants Using a Theorem Prover. Invited colloquium talk at Microsoft Research Redmond (MSR), USA, 11 September 2009.
71. Laura Kovács. Finding Loop Invariants Using a Theorem Prover. Invited colloquium talk at SRI International, USA, 9 September 2009.
72. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at IBM Haifa, Israel, 27 July 2009.
73. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at LORIA-Nancy, France, 22 June 2009.
74. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at the University of Manchester, UK, 1 April 2009.
75. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at ETH Zürich, Switzerland, 2 March 2009.
76. Laura Kovács. Invariant Generation by Algebraic Techniques for Software Verification. Invited colloquium talk at the Vienna University of Technology, Austria, 28 November 2008.
77. Laura Kovács. Reasoning Algebraically About P-solvable Loops. Invited colloquium talk at MoVe, LIF, Marseille, France, 14 February 2008.
78. Laura Kovács. Automated Loop Invariant Generation by Algebraic Techniques Over the Reals. Invited colloquium talk at the University of Manchester, UK, 9 March 2007.
79. Laura Kovács. Polynomial Invariant Generation by Algebraic Techniques for Program Verification in Theorema. Invited colloquium talk at the École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 15 February 2007.
80. Laura Kovács. Polynomial Invariant Generation by Algebraic Techniques for Program Verification in Theorema. Invited colloquium talk at IRIT, Paul Sabatier University, Toulouse, France, 26 March 2007.
81. Laura Kovács. Using Symbolic Summation and Polynomial Algebra for Automated Generation of Polynomial Invariants in Theorema. Invited colloquium talk at VERIMAG, Grenoble, France, 8 February 2007.

## Tutorial Speaker

82. Laura Kovács. Algebra-Based Loop Analysis. Invited tutorial speaker at the 48th International Symposium on Symbolic and Algebraic Computation (ISSAC), Tromsø, Norway, July 24, 2023.
83. Laura Kovács and Andrei Voronkov. First-Order Theorem Proving and Vampire. Invited tutorial speaker at the 12th Summer School on Formal Techniques, SRI, Menlo Park, May 23-28, 2023.
84. Laura Kovács. First-Order Theorem Proving and Vampire. Invited lecturer (online) at the 23rd International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Timișoara, Romania, December 8, 2021.
85. Kryštof Hoder, Laura Kovács, and Andrei Voronkov. First-Order Theorem Proving and Vampire. Tutorial at the International Conference on Automated Deduction (CADE), Wrocław, Poland, 1 August 2011.
86. Laura Kovács. First-Order Theorem Proving and Vampire. Tutorial at the RiSE-PUMA Workshop, Traunkirchen, Austria, 4 October 2011.
87. Laura Kovács. First-Order Theorem Proving and Vampire. Tutorial at the Mexican International Conference on Artificial Intelligence (MICAI), 26 November - 4 December 2011.
88. Laura Kovács. Program Assertion Synthesis using Symbolic Computation. Tutorial at the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Timisoara, Romania, 26-29 September 2011.
89. Laura Kovács and Andrei Voronkov. Invariant Generation using Theorem Proving. Tutorial at the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC), Timisoara, Romania, 26-29 September 2011.

## Seminar Participation by Invitation

90. Laura Kovács. Algebra-based Synthesis of Loops and their Invariants, September 10, 2021. Contributed (online) talk at the Special Session on Computer Algebra and Computational Logic, 9th International Symposium on Symbolic Computation in Software Science, RISC-Linz, Austria.
91. Laura Kovács. Symbol Elimination and Vampire, February 2019. Contributed talk at the Dagstuhl seminar 19062 “Bringing CP, SAT and SMT together: Next Challenges in Constraint Solving”, Schloss Dagstuhl, Germany.
92. Laura Kovács. Symbol Elimination for Program Analysis, November 2015. Contributed talk at the Dagstuhl Seminar 15471 on “Symbolic Computation and Satisfiability Checking”, Schloss Dagstuhl, Germany.
93. Laura Kovács. Experiments with Invariant Generation Using a Saturation Theorem Prover, March 2011. Contributed talk at the “Deduction at Scale” Seminar, Ringberg Castle, Germany.
94. Laura Kovács. Interpolation and Symbol Elimination, April 2010. Contributed talk at the Dagstuhl Seminar 10161 on “Decision Procedures in Software, Hardware and Bioware”, Schloss Dagstuhl, Germany.
95. Laura Kovács. Finding Loop Invariants Using a Theorem Prover, October 2009. Contributed talk at the Dagstuhl Seminar 09411 on “Interaction versus Automation: The two Faces of Deduction”, Schloss Dagstuhl, Germany.
96. Laura Kovács. Automated Loop Invariant Generation by Algebraic Techniques Over the Rationals, April 2007. Contributed talk at the Alpine Verification Meeting, Aussois, France.
97. Laura Kovács. Reasoning Algebraically About P-solvable Loops, October 2007. Contributed talk at the Dagstuhl Seminar 07401 on “Deduction and Decision Procedures”, Schloss Dagstuhl, Germany.
98. Laura Kovács and Tudor Jebelean. Generating Invariance Properties by Recurrence Solving and Groebner Basis Computation in the Theorema system, August 2005. Contributed talk at the Dagstuhl Seminar 05311 on “Verifying Optimizing Compilers”, Schloss Dagstuhl, Germany.



## 7 Contributed Talks

### Contributed Talks

99. Laura Kovács. Verifying Relational Properties using Trace Logic, October 2019. Contributed talk at the First International Workshop on “Proof Theory for Automated Deduction, Automated Deduction for Proof Theory”, Madeira, Portugal.
100. Laura Kovács. Interpolation in the Grey Area of Proofs, March 2019. Contributed talk at the “Helmut Veith Memorial Workshop”, Turracher Höche, Austria.
101. Laura Kovács. Experiments with Invariant Generation Using a Saturation Theorem Prover, March 2011. Contributed talk at the Workshop on Logic and Computer Science, Kurt Gödel Research Center, University of Vienna, Austria.
102. Laura Kovács. Interpolation and Symbol Elimination, February 2010. Contributed talk at the RISE Workshop, Technical University of Graz, Austria.
103. Laura Kovács. Reasoning Algebraically About P-solvable Loops, September 2007. Contributed talk at the SCORE Summer Workshop on Symbolic Computation and Software Verification, Fuji Susono, Japan.
104. Laura Kovács and Tudor Jebelean. Algebraic Methods for Invariant Generation, April 2007. Contributed talk at the SFB Statusseminar, Strobl, Austria.
105. Laura Kovács. Combining Algebraic and Logic Techniques for Program Verification, December 2006. Contributed talk at the SFB Cooperation Meeting, Johannes Kepler University Linz.
106. Laura Kovács and Tudor Jebelean. Automated Generation of Polynomial Invariants for Imperative Program Verification in Theorema, December 2006. Contributed talk at the INTAS Project Meeting, Institute eAustria, Timișoara, Romania.
107. Laura Kovács and Tudor Jebelean. Finding Polynomial Invariants for Imperative Loops, April 2006. Contributed talk at the SFB Statusseminar, Strobl, Austria.
108. Laura Kovács and Tudor Jebelean. Using Symbolic Summation and Polynomial Algebra for Imperative Program Verification in the Theorema System, June 2006. Contributed talk at the International Conference on Applications of Computer Algebra (ACA), Bulgaria.
109. Laura Kovács. Imperative Program Verification in Theorema, November 2005. Contributed talk at the Theorema-Ultra-Omega Workshop, University of Saarbrücken, Germany.
110. Laura Kovács and Tudor Jebelean. Polynomial Invariant Generation by Algebraic and Combinatorial Methods, December 2005. Contributed talk at the SFB Cooperation Meeting, Johannes Kepler University Linz.
111. Laura Kovács and Tudor Jebelean. Using Combinatorial and Algebraic Techniques for Automatic Generation of Loop Invariants, April 2005. Contributed talk at the SFB Statusseminar, Strobl, Austria.
112. Laura Kovács and Nikolaj Popov. Procedural Program Verification in Theorema, May 2003. Contributed talk at the Omega-Theorema Workshop, RISC-Linz, Austria.
113. Laura Kovács, Nikolaj Popov, and Tudor Jebelean. Verification of Imperative Programs in Theorema, April 2003. Contributed talk at the SFB Statusseminar, Strobl, Austria.

## 8 Poster Presentations

114. Pamina Georgiou, Bernhard Gleiss, Laura Kovács, and Matteo Maffei. Trace Reasoning for Formal Verification using the First-Order Superposition Calculus. Poster presentation at the FMCAD 2019 Student Forum, San Jose, US, 2019.
115. Laura Kovács and Tudor Jebelean. Combining Computer Algebra and Computational Logic for Imperative Program Verification in Theorema. Poster presentation at Calculemus 2006, Genova, Italy, 2006.

## 9 Popular/General Science Presentations

116. Laura Kovács. Enjoying Research from Math to Computer Science. Invited Talk at the CAV Mentoring Workshop, Paris, France, July 18, 2023.
117. Laura Kovács. Perspectives on Attracting and Retaining Women and Girls to the ICT fields. Panelist at the CO-INSPIRA Equal.STEAM workshop (Online), University of Coimbra, Portugal, April 26, 2023.
118. Laura Kovács. Enjoying Research at the Intersection of Math and Computer Science. Invited Talk at the Mentoring Workshop of ETAPS, April 3, 2022.
119. Laura Kovács. Towards a Roadmap for European Research. Panelist at the Workshop on Digital Humanism and Artificial Intelligence, European Commission, March 3, 2022.
120. Laura Kovács. Can Computers Think as Humans? (in German) Invited WiSE Talk at the SCIENCE Lecture Series Talks of Wiener Volkshochschulen and City of Vienna, Vienna, January 26, 2022.
121. Laura Kovács. Algebraic and Logical Methods for Ensuring the Absence of Software Errors (in German). Invited Talk at the “TU Forum Mathematik- TUForMath”, TU Wien, May 27, 2021.
122. Laura Kovács. Enjoying Research at the Intersection of Math and Computer Science. Invited Talk at the 1st Webinar of the EU COST Action “EUGAIN – European Network For Gender Balance in Informatics”, 27 January, 2021.
123. Laura Kovács. Automated Reasoning in Systems Engineering. Invited Talk at the TU Vision 2025+ Forum – “Digitale Transformation. Wissenschaft. Verantwortung”, TU Wien, November 17, 2020.
124. Laura Kovács. Formal Methods in the Digital World (in Hungarian). Invited Talk at the JégKépzés - Alumni Network and Presentations of Hungarian Scientists of the Bartók Béla Highschool, Timișoara, Romania, November 27, 2019.
125. Laura Kovács. Can Computers Think as Humans? Invited Talk at the 100 Years Female Studies at TU Wien - Symposium on “Menschen und Maschinen. Visionen unserer digitalen Zukunft”, TU Wien, October 29, 2019.
126. Laura Kovács. Automated Reasoning for Rigorous Systems Engineering. Invited Talk at the RiSE/SHiNE Media Seminar, TU Wien, Vienna, Austria, May 7, 2018.
127. Laura Kovács. With Timișoara Background in the Scientific World of Computer Science. Invited Talk at the Hungarian Science Festival, Timișoara, Romania, 25-26 November, 2016.
128. Laura Kovács. Computer Proofs Finding Computer Errors. Contributed Popular Science Talk at the International Science Festival Gothenburg, April 19, 2015.