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

1 Textbooks

1. Adalbert Kovács, Gheorghe Ţigan, Laura Kovács, and Constantin Milici. *Computer Assisted Mathematics (in Romanian)*. "Politechnica" Publisher, Timişoara, 3rd edition, 2012.

2 Invited Papers

2. 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.

3. 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.

4. 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.

5. 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.

6. 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

7. 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*, To appear, 2016.

8. 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.

9. 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.

10. 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.

11. 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.

12. Laura Kovács and Tudor Jebelean. Automated Generation of Loop Invariants by Recurrence Solving in Theorema. *Annals of the West University of Timişoara. Series Mathematics - Computer Science*, XLII:151–166, 2004.

13. 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.

14. Laura Kovács and Tudor Jebelean. Practical Aspects of Imperative Program Verification in Theorema. *Annals of the West University of Timişoara. 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.
All co-authored publications present work done in an equally distributed joint collaboration.
The co-authored publications (since 2007) have their authors listed in alphabetical order.

Refereed Papers in Conference Proceedings

15. 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)*, ACM press, 2017. To appear.

16. 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*, volume 41 of EPiC Series in Computing, pages 53-71, 2016.

17. 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.

18. 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*, volume 9450 of LNCS, pages 434-443, 2015.

19. 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.

20. 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.

21. 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.

22. Mohammad Reza Shoaei, Laura Kovács, and Bengt Lennartson. Supervisory Control of Discrete-Event Systems via IC3. In *Proceedings of the International Haifa Verification Conference*, volume 8855 of LNCS, pages 252-266, 2014.

23. 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.

24. 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.

25. 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-19)*, volume 8312 of LNCS, pages 173–181, 2013.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

32. 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.

33. 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.

34. 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-18)*, volume 7180 of *LNCS*, pages 435–444, 2012.

35. 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.

36. 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.

37. 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 Timişoara (ISSN 1224-6069), pages 241–248, 2012.

38. 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 Timişoara (ISSN 1224-6069), pages 329–334, 2012.

39. 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.

40. 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.

41. 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.

42. 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.

43. 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 Manufactoring and Automation*, volume 2 of *DAAAM International*, pages 1147–1148, 2011.

44. Laura Kovács and Adalbert Kovács. Aligator: Experiments and Limitations. In *Proceedings of 22nd International DAAAM Symposium: Intelligent Manufactoring and Automation*, volume 2 of *DAAAM International*, pages 1145–1146, 2011.

45. 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-16)*, volume 6355 of *LNAI*, pages 103–118, 2010.

46. 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-17)*, volume 6397 of *LNCS*, pages 348–356, 2010.

47. 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.

48. 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**.

49. 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.

50. 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.

51. 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.

52. 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 Timişoara, Transactions on Mathematics and Physics, pages 401–406, 2009.

53. 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 Timişoara, Transactions on Mathematics and Physics, pages 393–400, 2009.

54. 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, Artifical Intelligence and Reasoning (LPAR-15)*, LNCS, pages 333–342, 2008.

55. 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.

56. 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**.

57. 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.

58. 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-14)*, pages 5–8, 2007.

59. 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.

60. 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.

61. 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.

62. 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.

63. Adalbert Kovács and Laura Kovács. The Calculus Algorithm for the Integral Equation of the Compressible Fluids 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 Timişoara, Transactions on Mathematics and Physics, pages 427–434, 2003.

64. 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 Timişoara, Transactions on Mathematics and Physics, pages 407–415, 2003.

65. 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

66. Yuting Chen, Laura Kovács and Simon Robillard. Theory-Specific Reasoning about Loops with Arrays using Vampire. In *Proceedings of the 3rd Vampire Workshop*, EPiC Series in Computing, 2016. To appear.

67. 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.

68. 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.

69. 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.

70. 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.

71. 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.

72. 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.

73. 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.

74. 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.

75. 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.

76. 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

77. 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.

78. 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.

79. 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.

80. 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.

81. 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

82. Laura Kovács and Andrei Voronkov, editors. Proceedings of the 1st and 2nd Vampire Workshops. Volume 38 of the EPiC Series in Computing, 2016.

83. 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.

84. 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.

85. 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.

86. Nikolaj Bjorner, Krishnendu Chatterjee, Laura Kovacs, 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.

87. 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.

88. Laura Kovács and Temur Kutsia, editors. *Special Issue on Automated Specification and Verification of Web Systems*, volume 10 of *Journal of Applied Logic*, 2012.

89. 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.

90. Nikolaj Bjørner and Laura Kovács, editors. *Proceedings of the International Workshop on Invariant Generation (WING)*. IJCAR, University of Edinburgh, 2010.

91. 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.

92. 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.

93. 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

94. 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.

95. 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

96. Laura Kovács. *Symbol Elimination in Program Analysis.* Habilitation Thesis, Vienna University of Technology, Austria, November 2012.

97. 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.

98. Laura Kovács. Verification of Imperative Programs in Theorema. Master's thesis, West University of Timişoara, Romania, February 2004. Advisors: Prof. Tudor Jebelean and Prof. Viorel Negru.

99. Laura Kovács. *Optical Music Recognition.* Diploma Thesis, West University of Timişoara, Romania, June 2002. Advisor: Dr. Lucian Cucu.

Progress Reports

100. Bruno Buchberger, Tudor Jebelean, Wolfgang Windsteiger, Temur Kutsia, Koji Nakagawa, Judith Robu, Florina Piroi, Adrian Craciun, Nikolaj Popov, Gábor Kusper, 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.

101. Bruno Buchberger, Tudor Jebelean, Wolfgang Windsteiger, Temur Kutsia, Koji Nakagawa, Judith Robu, Florina Piroi, Adrian Craciun, Nikolaj Popov, Gábor Kusper, 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 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.

2. Laura Kovács. Program Assertion Synthesis using Symbol Elimination. Invited lecturer at the VTSA Summer School on Verification Technology, Systems, and Applications, Luxemburg, October 2014.

3. 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.

4. Laura Kovács. Automated Theorem Proving - An Introduction. Invited lecturer at the ARiSE/VCLA Winter School on Verification, Vienna, Austria, February 2012.

5. Laura Kovács. Automated Theorem Proving - with some Applications to Verification. Invited lecturer at the ARiSE/VCLA Winter School on Verification, Vienna, Austria, February 2012.

6. 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

7. Laura Kovács. Symbolic Computation and Automated Reasoning for Program Analysis. Invited talk at the at the 12th International Conference on integrated Formal Methods (iFM), Reykjavik, Island, June 1-5, 2016.

8. Laura Kovács. First-Order Theorem Proving and Program Analysis. Invited talk at the at the LCCC-ACCESS workshop on Model-Based Engineering, Lund University, Sweden, 4-5 May 2015.

9. 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.

10. Laura Kovács. Symbol Elimination in Program Analysis. Invited talk at the International Seminar on Program Verification, Automated Debugging and Symbolic Computation (PAS), Beijing, China, 10-12 October 2012.

11. 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.

12. 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.

13. 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

14. Laura Kovács. Symbol Elimination for Program Analysis. Invited colloquim talk at the Theoretical Computer Science Seminar Series of the KTH Royal Institute of Technology, Stockholm, Sweden, 18 May, 2015.

15. Laura Kovács. Formal Methods in Software Design and Verification. Invited colloquim talk at SAAB Technical Seminar, Linköping, Sweden, 12 November, 2013.

16. Laura Kovács. Formal Methods for Program Verification. Invited colloquim talk at SAAB Kallebäck, Gothenburg, Sweden, 6 November, 2013.

17. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquim talk at Microsoft Cambridge, UK, 19 September 2012.

18. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquim talk at VERIMAG, Grenoble, France, 5 April 2012.

19. Laura Kovács. Playing in the Grey Area of Proofs. Invited colloquim talk at IST/TU Wien Rigorous System Engineering Seminar, TU Wien, 8 March 2012.

20. Laura Kovács. Experiments with Invariant Generation Using a Saturation Theorem Prover. Invited colloquim talk at AdaCore, Paris, France, 18 April 2011.

21. Laura Kovács. RiSE: Rigorous Systems Engineering. Invited colloquim talk at the Research Seminar for Master Students, West University of Timisoara, Romania, 25-27 May 2011.

22. Laura Kovács. Symbol Elimination in Program Analysis. Invited colloquim talk at the Technical University Graz, Austria, 31 May 2011.

23. Laura Kovács. Symbol Elimination in Program Analysis. Invited colloquim talk at Helsinki Institute for Information Technology (HIIT), 23 September 2011.

24. Laura Kovács. Aligators and Arrays. Invited colloquim talk at IST/TU Wien Rigorous System Engineering Seminar, IST Austria, 28 October 2010.

25. Laura Kovács. Symbol Elimination and Interpolation. Invited colloquim talk at the University of Verona, Italy, 21 September 2010.

26. Laura Kovács. Symbol Elimination and Interpolation for Software Verification. Invited colloquim talk at Intel, Haifa, Israel, 20 December 2010.

27. Laura Kovács. Finding Loop Invariants Using a Theorem Prover. Invited colloquium talk at Microsoft Research Redmond (MSR), USA, 11 September 2009.

28. Laura Kovács. Finding Loop Invariants Using a Theorem Prover. Invited colloquium talk at SRI International, USA, 9 September 2009.

29. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at IBM Haifa, Israel, 27 July 2009.

30. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at LORIA-Nancy, France, 22 June 2009.

31. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at the University of Manchester, UK, 1 April 2009.

32. Laura Kovács. Quantified Invariant Generation using Symbolic Computation and Theorem Proving. Invited colloquium talk at ETH Zürich, Switzerland, 2 March 2009.

33. Laura Kovács. Invariant Generation by Algebraic Techniques for Software Verification. Invited colloquium talk at the Vienna University of Technology, Austria, 28 November 2008.

34. Laura Kovács. Reasoning Algebraically About P-solvable Loops. Invited colloquium talk at MoVe, LIF, Marseille, France, 14 February 2008.

35. Laura Kovács. Automated Loop Invariant Generation by Algebraic Techniques Over the Reals. Invited colloquium talk at the University of Manchester, UK, 9 March 2007.

36. 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.

37. 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.

38. 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

39. Kryštof Hoder, Laura Kovács, and Andrei Voronkov. First-Order Theorem Proving and Vampire. Tutorial at the International Conference on Automated Deduction (CADE), Wroclaw, Poland, 1 August 2011.

40. Laura Kovács. First-Order Theorem Proving and Vampire. Tutorial at the RiSE-PUMA Workshop, Traunkirchen, Austria, 4 October 2011.

41. Laura Kovács. First-Order Theorem Proving and Vampire. Tutorial at the Mexican International Conference on Artificial Intelligence (MICAI), 26 November - 4 December 2011.

42. 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.

43. 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

44. 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.

45. Laura Kovács. Experiments with Invariant Generation Using a Saturation Theorem Prover, March 2011. Contributed talk at the "Deduction at Scale" Seminar, Ringberg Castle, Germany.

46. 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.

47. 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.

48. Laura Kovács. Automated Loop Invariant Generation by Algebraic Techniques Over the Rationals, April 2007. Contributed talk at the Alpine Verification Meeting, Aussois, France.

49. 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.

50. 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

1. 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.

2. Laura Kovács. Interpolation and Symbol Elimination, February 2010. Contributed talk at the RISE Workshop, Technical University of Graz, Austria.

3. 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.

4. Laura Kovács and Tudor Jebelean. Algebraic Methods for Invariant Generation, April 2007. Contributed talk at the SFB Statusseminar, Strobl, Austria.

5. Laura Kovács. Combining Algebraic and Logic Techniques for Program Verification, December 2006. Contributed talk at the SFB Cooperation Meeting, Johannes Kepler University Linz.

6. 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, Timişoara, Romania.

7. Laura Kovács and Tudor Jebelean. Finding Polynomial Invariants for Imperative Loops, April 2006. Contributed talk at the SFB Statusseminar, Strobl, Austria.

8. 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.

9. Laura Kovács. Imperative Program Verification in Theorema, November 2005. Contributed talk at the Theorema-Ultra-Omega Workshop, University of Saarbrücken, Germany.

10. 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.

11. 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.

12. Laura Kovács and Nikolaj Popov. Procedural Program Verification in Theorema, May 2003. Contributed talk at the Omega-Theorema Workshop, RISC-Linz, Austria.

13. 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

1. Laura Kovács and Tudor Jebelean. Combining Computer Algebra and Computational Logic for Imperative Program Verification in Theorema. Poster presentation at Calculemus'06, Genova, Italy, 2006.

9 Popular Science Presentations

1. Laura Kovács. Computer Proofs Finding Computer Errors. Contributed popular science talk at the International Science Festival Gothenburg, April 19, 2015.