CURRICULUM VITAE

Cesare Tinelli

2020–21

Department of Computer Science
The University of Iowa
Iowa City, Iowa 52242

phone: (319) 335-0735
email: cesare-tinelli@uiowa.edu
web: http://www.cs.uiowa.edu/~tinelli

Educational and Professional History

HIGHER EDUCATION

Ph.D.	University of Illinois at Urbana-Champaign	1999	Computer Science
M.S.	University of Illinois at Urbana-Champaign	1995	Computer Science
Laurea	Università degli Studi di Bari, Italy	1990	Computer Science (*magna cum laude*)

ACADEMIC POSITIONS

Aug 2012 – present	Professor in Computer Science, The University of Iowa
Aug 2005 – Jul 2012	Associate Professor in Computer Science, The University of Iowa
Aug 1999 – Jul 2005	Assistant Professor in Computer Science, The University of Iowa
Jun 1999 – Aug 1999	Visiting Lecturer, University of Illinois at Urbana-Champaign.

HONORS AND AWARDS

EATCS best paper award nominee, ETAPS 2021
Honorable mention, 19th Conf. on Formal Methods in Computer-Aided Design, 2016
F. Wendell Miller Professor, 2019–24
Best Paper Award, 16th Conf. on Formal Methods in Computer-Aided Design, 2016
Collegiate Scholar Award, The University of Iowa, 2012–14
Haifa Verification Conf. Award, 2010
National Science Foundation CAREER Award, 2003

Memberships

Association for Automated Reasoning (AAR)
Association for Computing Machinery (ACM)

Scholarship

SELECTED REFEREED PUBLICATIONS

Journals

1. B. Meng, D. Larraz, K. Siu, A. Moitra, J. Interrante, W. Smith, S. Paul, D. Prince, H. Herencia-Zapana, M. F. Arif, M. Yahyazadeh, V. T. Valapil, M. Durling, C. Tinelli, O. Chowdhury. VERDICT: A Language and Framework for Engineering Cyber Resilient and Safe System. Systems 9(1):18, 2021.

2. A. Niemetz, M. Preiner, An. Reynolds, Y. Zohar, C. Barrett and C. Tinelli. Towards Satisfiability Modulo Parametric Bit-vectors. Special issue with selected papers from CADE-27. The Journal of Automated Reasoning, 2021. (Invited submission, to appear.)

3. A. Niemetz, M. Preiner, A. Reynolds, C. Barrett, C. Tinelli. On Solving Quantified Bit-Vectors using Invertibility Conditions. Special issue with selected papers from CAV 2018. Formal Methods in Systems Design, 2021. (Invited submission, to appear.)

4. A. Reynolds, V. Kuncak, C. Tinelli, C. Barrett, M. Deters. Refutation-Based Synthesis in SMT. Special issue on Syntax-Guided Synthesis. *Journal of Formal Methods in System Design*, 55(2), 73–102. 2019.
   https://doi.org/10.1007/s10703-017-0270-2

5. K. Bansal, C. Barrett, A. Reynolds, C. Tinelli. A New Decision Procedure for Finite Sets and Cardinality Constraints in SMT. Special issue with selected papers from IJCAR 2016. *Logical Methods in Computer Science* 14(4). 2018. (Invited submission)
   https://doi.org/10.23638/LMCS-14(4:12)2018

6. A. Reynolds, C. Tinelli, C. Barrett. Constraint Solving for Finite Model Finding in SMT Solvers. Special issue on new trends in Constraint Logic Programming. *Theory and Practice of Logic Programming*, 17(4):516–558. 2017.
   https://doi.org/10.1017/S1471068417000175

7. T. Liang, A. Reynolds, N. Tsiskaridze, C. Tinelli, C. Barrett, M. Deters. An efficient SMT solver for string constraints. Special issue with selected works from CAV 2014. *Journal of Formal Methods in System Design*. 48(3):206–234, June 2016.
   https://doi.org/10.1007/s10703-016-0247-6

8. A. Stump, D. Oe, A. Reynolds, L. Hadarean, and C. Tinelli. SMT Proof Checking Using a Logical Framework. *Journal of Formal Methods in System Design*. 41(1):91–118, February 2013.

9. A. Fuchs, A. Goel, J. Grundy, S. Krstić, and C. Tinelli. Ground interpolation for the theory of equality. *Logical Methods in Computer Science*, 8:(1), 2012.

10. P. Baumgartner, B. Pelzer, and C. Tinelli. Model Evolution with Equality - Improved. *Journal of Symbolic Computation*, 47:1011–1045, 2012.

11. C. Barrett, Y. Ge, and C. Tinelli. Solving Quantified Verification Conditions using Satisfiability Modulo Theories. *Annals of Mathematics and Artificial Intelligence*, 55:101-122, 2009.

12. P. Baumgartner, A. Fuchs, H. de Nivelle, and C. Tinelli. Computing Finite Models by Reduction to Function-Free Clause Logic. *Journal of Applied Logic*, 7:58–74, 2009.

13. P. Baumbartner and C. Tinelli. The Model Evolution Calculus as a First-Order DPLL Method. *Artificial Intelligence*, 172:591-632, 2008.

14. C. Barrett, I. Shikanian and C. Tinelli. An Abstract Decision Procedure for Satisfiability in the Theory of Inductive Data Types. *Journal on Satisfiability, Boolean Modeling and Computation*, 3:1-17, 2007.

15. R. Nieuwenhuis, A. Oliveras, and C. Tinelli. Solving SAT and SAT Modulo Theories: from an Abstract Davis-Putnam-Logemann-Loveland Procedure to DPLL(T). *The Journal of the ACM*, 53(6):937–977, November 2006.

16. F. Baader, S. Ghilardi and C. Tinelli. A New Combination Procedure for the Word Problem that Generalizes Fusion Results in Modal Logics. *Information and Computation*, 240(1), October 2006.

17. P. Baumbartner, A. Fuchs and C. Tinelli. Darwin: A Theorem Prover for the Model Evolution Calculus. *Int'l Journal of Artificial Intelligence Tools*, 15(1), February 2006.

18. C. Tinelli and C. Zarba. Combining nonstably infinite theories. *Journal of Automated Reasoning*, 34(3), April 2005.

19. C. Tinelli. Cooperation of background reasoners in theory reasoning by residue sharing. *Journal of Automated Reasoning*, 30(1):1-31, January 2003.

20. C. Tinelli and C. Ringeissen. Unions of non-disjoint theories and combinations of satisfiability procedures. *Theoretical Computer Science*, 290(1), 2003.

21. F. Baader and C. Tinelli. Deciding the word problem in the union of equational theories. *Information and Computation*, 178(2), 2002. Special issue with selected work from RTA'99.

22. C. Tinelli and M. T. Harandi. Constraint logic programming over unions of constraint theories. *The Journal of Functional and Logic Programming*, 1998(6), 1998.

Conference Proceedings

1. Y. Sheng, Y. Zohar, C. Ringeissen, A. Reynolds, C. Barrett and C. Tinelli. Politeness and Stable Infiniteness: Stronger Together. In *Proc. of 28th Int'l Conf. on Automated Deduction.* Springer, 2021 (to appear)

2. A. Niemetz, M. Preiner, A. Reynolds, C. Barrett, C. Tinelli. Syntax-Guided Quantifier Instantiation. *Proc. of 27th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems.* (ETACS best paper award nominee) (to appear)

3. A. Reynolds, A. Nötzli, C. Barrett, C. Tinelli. Reductions for Strings and Regular Expressions Revisited. In *Proc. of 19th Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2020.
   https://doi.org/10.34727/2020/isbn.978-3-85448-042-6_30

4. M. F. Arif, D. Larraz, M. Echeverria, A. Reynolds, O. Chowdhury, C. Tinelli. SYSLITE: Syntax-Guided Synthesis of PLTL Formulas from Finite Traces. In *Proc. of 19th Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2020.
   https://doi.org/10.34727/2020/isbn.978-3-85448-042-6_16

5. F. Baader, P. Koopmann, C. Tinelli. First Results on How to Certify Subsumptions Computed by the EL Reasoner ELK Using the Logical Framework with Side Conditions. In *Proc. of 33th Int'l Work. on Description Logics.* CEUR, 2020.

6. A. Reynolds, A. Nötzli, C. Barrett, C. Tinelli. A Decision Procedure for String to Code Point Conversion. In *Proc. of 10th Int'l Joint Conf. on Automated Reasoning.* Springer, 2020.
   https://doi.org/10.1007/978-3-030-51074-9_13

7. A. Reynolds, H. Barbosa, D. Larraz, C. Tinelli: Scalable Algorithms for Abduction via Enumerative Syntax-Guided Synthesis. In *Proc. of 10th Int'l Joint Conf. on Automated Reasoning.* Springer, 2020.
   https://doi.org/10.1007/978-3-030-51074-9_9

8. H. Barbosa, A. Reynolds, D. Larraz and C. Tinelli. Extending enumerative function synthesis via SMT-driven classification. In *Proc. of the 19th Conf. ons on Formal Methods in Computer-Aided Design.* IEEE, 2019. (Honorable mention.)
   https://doi.org/10.23919/FMCAD.2019.8894267

9. Burak Ekici, Arjun Viswanathan, Yoni Zohar, C. Barrett and C. Tinelli. Verifying Bit-vector Invertibility Conditions in Coq (Extended Abstract). In *Proc. of the sixth Workshop on Proof eXchange for Theorem Proving.* Open Publishing Association, 2019.
   https://doi.org/10.4204/EPTCS.301.4

10. H. Barbosa, A. Reynolds, D. El Ouraoui, C. Tinelli and C. Barrett. Extending SMT solvers to Higher-Order Logic. In *Proc. of the 27th Int'l Conf. on on Automated Deduction.* Springer, 2019.
    https://doi.org/10.1007/978-3-030-29436-6_3

11. A. Niemetz, M. Preiner, A. Reynolds, Y. Zohar, C. Barrett and C. Tinelli. Towards Bit Width Independent Proofs in SMT Solvers. In *Proc. of the 27th Int'l Conf. on on Automated Deduction.* Springer, 2019.
    https://doi.org/10.1007/978-3-030-29436-6_22

12. Martin Brain, A. Niemetz, M. Preiner, A. Reynolds, C. Barrett, C. Tinelli. Invertibility Conditions for Floating-Point Formulas. In *Proc. of the 31st Int'l Conf. on on Computer Aided Verification.* Springer, 2019.
    https://doi.org/10.1007/978-3-030-25543-5_8

13. A. Reynolds, H. Barbosa, A. Nötzli, C. Barrett, C. Tinelli. CVC4sy: Smart and Fast Term Enumeration for Syntax-Guided Synthesis. In *Proc. of the 31st Int'l Conf. on on Computer Aided Verification.* Springer, 2019.
https://doi.org/10.1007/978-3-030-25543-5_5

14. A. Reynolds, A. Nötzli, C. Barrett, C. Tinelli. High-Level Abstractions for Simplifying Extended String Constraints in SMT. In *Proc. of the 31st Int'l Conf. on on Computer Aided Verification.* Springer, 2019.
https://doi.org/10.1007/978-3-030-25543-5_2

15. A. Nötzli, A. Reynolds, H. Barbosa, A. Niemetz, M. Preiner, C. Barrett, C. Tinelli. Syntax-Guided Rewrite Rule Enumeration for SMT Solvers. In *Proc. of the 22nd Int'l Conf. on on Theory and Applications of Satisfiability Testing.* Springer, 2019.
https://doi.org/10.1007/978-3-030-24258-9_20

16. A. Niemetz, M. Preiner, A. Reynolds, C. Barrett and C. Tinelli. Solving Quantified Bit-Vectors using Invertibility Conditions. In *Proc. of 30th Int'l Conf. on Computer Aided Verification.* Springer, 2018.

17. A. Reynolds, A. Viswanathan, H. Barbosa, C. Tinelli and C. Barrett. Datatypes with Shared Selectors. In *Proc. of 9th Int'l Joint Conf. on Automated Reasoning.* Springer, 2018.

18. B. Meng, A. Reynolds, C. Tinelli, and C. Barrett. Relational Constraint Solving in SMT. In *Proc. of 26th Int'l Conf. on Automated Deduction.* Springer, 2017.

19. B. Ekici, A. Mebsout, C. Tinelli, C. Keller, G. Katz, A. Reynolds, and C. Barrett. In *Proc. of 29th Int'l Conf. on Computer Aided Verification.* SMTCoq: A Plug-In for Integrating SMT Solvers into Coq. Springer, 2017.

20. A. Reynolds, M. Woo, C. Barrett, D. Brumley, T. Liang, and C. Tinelli. Scaling Up DPLL(T) String Solvers Using Context-Dependent Simplification. In *Proc. of 29th Int'l Conf. on Computer Aided Verification.* Springer, 2017.

21. L. Wagner, A. Mebsout, C. Tinelli, D. Cofer, and K. Slind. Qualification of a Model Checker for Avionics Software Verification. In *Proc. of 9th NASA Formal Methods Symposium.* Springer, 2017.

22. A. Mebsout and C. Tinelli. Proof Certificates for SMT-based Model Checkers for Infinite-state Systems. In *Proc. of 16th Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2016.

23. G.. Katz, C. Barrett, C. Tinelli, A. Reynolds, and L. Hadarean. Lazy Proofs for DPLL(T)-Based SMT Solvers. In *Proc. of 16th Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2016. (Best paper award.)

24. A. Champion, A. Mebsout, C. Sticksel, and C. Tinelli. The Kind 2 Model-Checker. In *Proc. of 28th Int'l Conf. on Computer Aided Verification.* Springer, 2016.

25. A. Champion, A. Gurfinkel, T. Kahsai, and C. Tinelli. CoCoSpec: A Mode-Aware Contract Language for Reactive Systems. In *Proc. of 14th Int'l Conf. on Software Engineering and Formal Methods.* Springer, 2016.

26. K. Bansal, A. Reynolds, C. Barrett, and C. Tinelli. A New Decision Procedure for Finite Sets and Cardinality Constraints in SMT. In *Proc. of 8th Int'l Joint Conf. on Automated Reasoning.* Springer, 2016.

27. A. Reynolds, J. Blanchette, S. Cruanes, and C. Tinelli. Model Finding for Recursive Functions in SMT. In *Proc. of 8th Int'l Joint Conf. on Automated Reasoning.* Springer, 2016.

28. L. Hadarean, C. Barrett, A. Reynolds, C. Tinelli and M. Deters. Fine-grained SMT proofs for the theory of fixed-width bit-vectors. In *Proc. of 20th Int'l Conf. on Logic for Programming, Artificial Intelligence and Reasoning.* Springer, 2015.

29. T. Liang, N. Tsiskaridze, A. Reynolds, C. Tinelli, and C. Barrett. A Decision Procedure for Regular Membership and Length Constraints over Unbounded Strings. In *Proc. of 10th Int'l Symposium on Frontiers of Combining Systems.* Springer, 2015.

30. A. Reynolds, M. Deters, V. Kuncak, C. Tinelli, and C. Barrett. Counterexample-Guided Quantifier Instantiation for Synthesis in SMT. In *Proc. of 27th Int'l Conf. on Computer Aided Verification.* Springer, 2015.

31. M. Brain, C. Tinelli, P. Rümmer and T. Wahl. An Automatable Formal Semantics for IEEE-754 Floating-Point Arithmetic. In *Proc. of 22nd IEEE Symposium on Computer Arithmetic.* IEEE, 2015.

32. T. King, C. Barrett and C. Tinelli. Leveraging Linear and Mixed Integer Programming for SMT. In *Proc. of 14th Int'l Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2014.

33. A. Reynolds, C. Tinelli and L. De Moura. Finding Conflicting Instances of Quantified Formulas in SMT. In *Proc. of 14th Int'l Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2014.

34. A. Stump and G. Sutcliffe and C. Tinelli. StarExec: a Cross-Community Infrastructure for Logic Solving. In *Proc. of 7th Int'l Joint Conf. on Automated Reasoning.* Springer, 2014

35. L. Hadarean, K. Bansal, D. Jovanović, C. Barrett and C. Tinelli. A Tale Of Two Solvers: Eager and Lazy Approaches to Bit-vectors. In *Proc. of 26th Int'l Conf. on Computer Aided Verification.* Springer, 2014

36. T. Liang, A. Reynolds, C. Tinelli, C. Barrett and M. Deters. A DPLL(T) Theory Solver for a Theory of Strings and Regular Expressions. In *Proc. of 26th Int'l Conf. on Computer Aided Verification.* Springer, 2014

37. A. Reynolds, C. Tinelli, A. Goel, S. Krstić. Finite Model Finding in SMT. In *Proc. of 25th Int'l Conf. on Computer Aided Verification.* Springer, 2013.

38. A. Reynolds, C. Tinelli, A. Goel, S. Krstić, M. Deters, and C. Barrett. Quantifier Instantiation Techniques for Finite Model Finding in SMT. In *Proc. of 24th Int'l Conf. on Automated Deduction.* Springer, 2013.

39. P.-L. Garoche, T. Kahsai and C. Tinelli. Incremental Invariant Generation using Logic-based Automatic Abstract Transformers. In G. Brat, N. Rungta and A. Venet editors, *Proc. of 5th NASA Formal Methods Symposium.* Springer, 2013.

40. P.-L. Garoche, T. Kahsai, C. Tinelli and M. Whalen. Incremental verification with mode variable invariants in state machines. In *Proc. of 4th NASA Formal Methods Symposium.* Springer, 2012.

41. P. Baumgartner and C. Tinelli. Model Evolution with Equality Modulo Built-in Theories. In *Proc. of 23rd Int'l Conf. on Automated Deduction.* Springer, 2011.

42. C. Barrett, C. Conway, M. Deters, L. Hadarean, D. Jovanovic, T. King, A. Reynolds, and C. Tinelli. CVC4. In *Proc. of 23rd Int'l Conf. on Computer Aided Verification.* Springer, 2011.

43. T. Kahsai and C. Tinelli. PKind: A parallel k-induction based model checker. In *Proc. of 10th Int'l Workshop on Parallel and Distributed Methods in Verification.* Volume 72 of *Electronic Proceedings in Theoretical Computer Science.* 2011.

44. T. Kahsai and Y. Ge, and C. Tinelli. Instantiation-Based Invariant Discovery. In *Proc. of 3rd NASA Formal Methods Symposium.* Springer, 2011.

45. A. Goel, S. Krstić and C. Tinelli. Ground Interpolation for Combined Theories. In *Proc. of 22nd Int'l Conf. on Automated Deduction.* Springer, 2009.

46. A. Fuchs, A. Goel, J. Grundy, S. Krstić, and C. Tinelli. Ground Interpolation for the Theory of Equality. In *Proc. of 15th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems.* Springer, 2009.

47. P. Baumgartner, A. Fuchs and C. Tinelli. ME(LIA) - Model Evolution With Linear Integer Arithmetic Constraints. In *Proc. of 15th Int'l Conf. ons on Logic for Programming, Artificial Intelligence and Reasoning.* Springer, 2008.

48. G. Hagen and C. Tinelli. Scaling up the formal verification of Lustre programs with SMT-based techniques. In *Proc. of 8th Int'l Conf. on Formal Methods in Computer-Aided Design.* IEEE, 2008.

49. C. Barrett, Y. Ge, and C. Tinelli. Solving Quantified Verification Conditions using Satisfiability Modulo Theories. In *Proc. of 21st Int'l Conf. on Automated Deduction.* Springer, 2007.

50. C. Barrett and C. Tinelli. CVC3. In *Proc. of 19th Int'l Conf. on Computer Aided Verification.* Springer, 2007.

51. S. Krstić, A. Goel, J. Grundy and C. Tinelli. Combined Satisfiability Modulo Parametric Theories. In *Proc. of 13th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems.* Springer, 2007.

52. P. Baumgartner, A. Fuchs and C. Tinelli. Lemma Learning in the Model Evolution Calculus. In *Proc. of 13th Int'l Conf. on Logic for Programming, Artificial Intelligence and Reasoning.* Springer, 2006.

53. C. Barrett, R. Nieuwenhuis, A. Oliveras, and C. Tinelli. Splitting on Demand in SAT Modulo Theories. In *Proc. of 13th Int'l Conf. on Logic for Programming, Artificial Intelligence and Reasoning.* Springer, 2006.

54. P. Baumgartner and C. Tinelli. The Model Evolution calculus with equality. In *Proc. of 20th Int'l Conf. on Automated Deduction.* Springer, 2005.

55. R. Nieuwenhuis, A. Oliveras, and C. Tinelli. Abstract DPLL and abstract DPLL modulo theories. In *Proc. of 11th Int'l Conf. on Logic for Programming Artificial Intelligence and Reasoning.* Springer, 2005.

56. C. Tinelli and C. Zarba. Combining decision procedures for theories in sorted logics. In *Proc. of 9th European Conf. on Logic in Artificial Intelligence.* Springer, 2004.

57. H. Ganzinger, G. Hagen, R. Nieuwenhuis, A. Oliveras, and C. Tinelli. DPLL(T): Fast Decision Procedures. In *Proc. of 16th Int'l Conf. on Computer Aided Verification.* Springer, 2004.

58. F. Baader, S. Ghilardi and C. Tinelli. A New Combination procedure for the Word Problem that Generalizes Fusion Results in Modal Logics. In *Proc. of 2nd Int'l Joint Conf. On Automated Reasoning.* Springer, 2004.

59. P. Baumgartner and C. Tinelli. The Model Evolution calculus. In *Proc. of 19th Int'l Conf. on Automated Deduction.* Springer, 2003.

60. C. Tinelli. A DPLL-based Calculus for Ground Satisfiability Modulo Theories. In *Proc. of 8th European Conf. on Logic in Artificial Intelligence.* Springer, 2002.

61. F. Baader and C. Tinelli. Combining decision procedures for positive theories sharing constructors. In *Proc. of 13th Int'l Conf. on Rewriting Techniques and Applications.* Springer, 2002.

62. F. Baader and C. Tinelli. Combining equational theories sharing non-collapse-free constructors. In *Proc. of 3rd Int'l Workshop on Frontiers of Combining Systems (Nancy, France).* Springer-Verlag, 2000.

63. F. Baader and C. Tinelli. Deciding the word problem in the union of equational theories sharing constructors. In *Proc. of 10th Int'l Conf. on Rewriting Techniques and Applications.* Springer-Verlag, 1999.

64. F. Baader and C. Tinelli. A new approach for combining decision procedures for the word problem, and its connection to the Nelson-Oppen combination method. In *Proc. of 14th Int'l Conf. on Automated Deduction.* Springer-Verlag, 1997.

65. C. Tinelli and M. T. Harandi. Constraint logic programming over unions of constraint theories. In *Proc. of 2nd Int'l Conf. on Principles and Practice of Constraint Programming.* Springer-Verlag, 1996.

66. C. Tinelli and M. T. Harandi. A new correctness proof of the Nelson–Oppen combination procedure. In F. Baader and K.U. Schulz, editors, *Frontiers of Combining Systems: Proc. of 1st Int'l Workshop.* Applied Logic. Kluwer, 1996.

SELECTED EDITED WORK

1. J. Davenport, M. England, A. Griggio, T. Sturm, and C. Tinelli, editors. Special Issue on Satisfiability Checking and Symbolic Computation. *Journal of Symbolic Computation*, 100, Sep–Oct 2020.
   https://doi.org/10.1016/j.jsc.2019.07.017

2. A. Biere, C. Tinelli, C. Weidenbach, editors. Special Issue on Automated Reasoning Systems. *Journal of Automated Reasoning*, 64(3), 2020.
   https://doi.org/10.1007/s10817-019-09531-1

3. C. Fuhs, P. Rümmer, R. Schmidt, C. Tinelli: Deduction Beyond Satisfiability (Dagstuhl Seminar 19371). Dagstuhl Reports 9(9): 23-44, 2019.
   https://doi.org/10.4230/DagRep.9.9.23

4. C. Lutz, U. Sattler, C. Tinelli, A.-Y. Turhan, F. Wolter, editors. Description Logic, Theory Combination, and All That — Essays Dedicated to Franz Baader on the Occasion of His 60th Birthday. Vol. 11560 of LNCS. Springer, 2019.
   https://doi.org/10.1007/978-3-030-22102-7

5. C. Baier and C. Tinelli, editors. Some advances in tools and algorithms for the construction and analysis of systems. Special issue with selected works from TACAS 2015. *Int'l Journal on Software Tools for Technology Transfer* 19(6), 2017.
   https://doi.org/10.1007/s10009-017-0471-4

6. C. Baier and C. Tinelli, editors. Special issue with selected works from TACAS 2015. *Acta Informatica* 54(8), 2017.
   https://doi.org/10.1007/s00236-017-0298-1

7. C. Baier and C. Tinelli, editors. *Proc. of 21st Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2015).* Vol. 9035 of LNCS. Springer, 2015.
   https://doi.org/10.1007/978-3-662-46681-0

8. C. Tinelli and V. Sofronie-Stokkermans, editors. *Proc. of 8th Int'l Symposium Frontiers of Combining Systems.* Vol. 6989 of LNCS. Springer, 2011.
   https://doi.org/10.1007/978-3-642-24364-6

9. W. Ahrendt, P. Baumgartner, H. de Nivelle, S. Ranise, and C. Tinelli, editors. Decision Procedures and Disproving. Special issue of *Electronic Notes in Theoretical Computer Science* with selected papers from PDPAR'04 and Disproving'04. Volume 125, number 3. Elsevier, 2005.

10. C. Tinelli and T. Rus, editors. Algebraic Methodology and Software Technology. Special issue of *Theoretical Computer Science* with selected papers from AMAST 2000. Vol. 291(3), 2003.

OTHER PUBLICATIONS

Invited Contributions

1. M. P. Bonacina, P. Fontaine, C. Ringeissen, C. Tinelli. Theory Combination: Beyond Equality Sharing. In *Description Logic, Theory Combination, and All That.* Springer 2019.
   https://doi.org/10.1007/978-3-030-22102-7_3

2. A. Reynolds, C. Tinelli, D. Jovanovic, and C. Barrett. Designing Theory Solvers with Extensions. In *Proc. of 11th Int'l Symposium on Frontiers of Combining Systems.* Springer, 2017.

3. A. Reynolds and C. Tinelli. SyGuS Techniques in the Core of an SMT Solver. in *Proc. of 6th Workshop on Synthesis.* EPTCS 260, 2017.

4. C. Barrett and C. Tinelli. Satisfiability Modulo Theories. In E. Clark, T. Henzinger and H. Veith editors, Handbook on Model Checking. Springer, 2018.

5. C. Barrett, R. Sebastiani, S. Seshia and C. Tinelli. Satisfiability Modulo Theories. In A. Biere, H. van Maaren and T. Walsh editors, Handbook on Satisfiability. IOS Press, 2009.

6. B. Beckert, T. Hoare, R. Hähnle, D. R. Smith, C. Green, S. Ranise, C. Tinelli, T. Ball, S. K. Rajamani. Intelligent Systems and Formal Methods in Software Engineering. IEEE Intelligent Systems Magazine, 21(6):71-81, November/December 2006.

SELECTED FUNDING

Unrestricted gifts

1. Donation from Nove, Facebook in support of extending CVC4 with native support for the theory of tequences. $75,000. 2020.

2. Donation from Amazon Web Services in support of continued research and development of CVC4. $100,000. 2020.

3. Donation from Amazon Web Services in support of continued research and development of CVC4. $150,000. 2019.

4. Donation from Amazon Web Services in support of research and development of CVC4. $100,000. 2018.

5. Donation from Rockwell Collins in support of MVD'18 workshop. $2,600. 2018.

6. Donation from United Technologies in support of MVD'18 workshop. $2,500. 2018.

7. Donation from General Electric in support of MVD'18 workshop. $1,000. 2018.

8. Donation from Rockwell Collins in support of MVD'17 workshop. $5,000. 2017.

9. Donation from GE Global Research in support of continued research and development of CVC4. $95,000. 2017.

10. Donation from GE Global Research in support of continued research and development of Kind 2. $95,000. 2016.

11. PI, Equipment grant from Intel Corporation. $9,000. 2006.

12. PI, donation from Intel Corporation's Strategic CAD Labs to support the SMT-LIB project. $8,333. 2006.

13. PI, Donation from Intel Corporation's Strategic CAD Labs to support the SMT-LIB project. $8,333. 2005

External grants, current

1. PI, *User-guided reasoning about nonlinear equations*, with A Reynolds (Iowa), co-PI. Tel Aviv University. $25,000. 2021. Start date: 09/01/2020. 1 year.

2. co-PI, *CCRI: Medium: Collaborative Research: Open-Source, State-of-the-Art Symbolic Model-Checking Framework*, with K. Rozier (ISU), PI, M. Vardi, PI (Rice) and B. Dutertre, PI (SRI). NSF. Iowa portion: $89,793. Start date: 10/01/2020. 1.5 years.

3. PI, *FMitF: Track II: Strengthening the integration of the CVC4 SMT solver in the Coq proof assistant.* NSF, $100,000. Start date: 07/01/2020. 3 years.

4. PI, *VERDICT: Verification Evidence & Resilient Design In anticipation of Cybersecurity Threats*, with O. Chowdhury, co-PI (Iowa) and M. Durling, PI (GEGR). DARPA, $5,000,000. Iowa portion: $809,003 Start date: 02/19/2018. 4 years.

5. PI, *HERMES: A Hybrid Efficient Reasoning Method for Explainable and Scalable formal methods*, with C. Barrett, PI (Stanford) and A. Pinto, PI (UTRC). DARPA, $6,000,000. Iowa portion: $730,430 Start date: 02/19/2018. 4 years.

6. co-PI, *VADD: Verified Application Debloating and Delayering*, with C. Barrett, PI (Stanford) and J. Hendrix, PI (Galois). ONR. Iowa portion: $399,537. Start date: 10/02/2017. 4 years.

7. co-PI, *CI-SUSTAIN: StarExec: Cross-Community Infrastructure for Logic Solving*, with A. Stump, PI, and Geoff Sutcliffe, PI (University of Miami). NSF, $999,045. Iowa portion: $552,195. Start date: 09/01/2017. 3 years.

External, completed

1. PI, *Myriad: Automatic Software Diversity for Execution-Time Protection*, with D. Melski, PI (Grammatech) and C. Barrett, PI (Stanford). DARPA, $2,500,000. Iowa portion: $566,815. Start date: 06/01/2015. 3.5 years.

2. co-PI, Contract-based compositional verification for outsourced flight critical systems, with T. Kahsai, PI (CMU/NASA). NASA, $1,386,307. Iowa portion: $523,144. Start date: 06/01/2014. 4 years.

3. PI, *Breaking the SMT bottleneck in symbolic security analysis*, with C. Barrett, PI (NYU) and D. Brumley, PI (CMU). NSF, $1,189,507. Iowa portion: $397,708. Start date: 08/14/2012. 5 years.

4. co-PI, *StarExec: Cross-Community Infrastructure for Logic Solving*, with A. Stump, PI, and Geoff Sutcliffe, PI (University of Miami). NSF, $2,110,133. Iowa portion: $1,959,838. Start date: 09/01/2011. 6 years.

5. co-PI, Qualification of Formal Methods Tools, with L. Wagner, PI (Rockwell-Collins). NASA, $1,000,000. Iowa portion: $269,176. Start date: 10/01/2014. 2 years.

6. co-PI, Certified SMT Solving for System Verification, with C. Barrett, PI (NYU). DARPA (AFRL/NASA), $550,300. Iowa portion: $99,900. Start date: 01/09/2013. 2 years.

7. PI, Verification of Complex Systems via SMT. United Technologies Research Center, $70,927. Start date: 08/12/2013. 17 months.

8. co-PI, Compositional Verification of Flight Critical Systems, with D. Cofer, PI (Rockwell-Collins), and M. Whalen, co-PI (Minnesota). NASA, $1,931,500. Iowa portion: $210,000. Start date: 01/06/2013. 3 years.

9. co-PI, *Formal Verification Quasi-Synchronous Systems*, with S. Miller, PI (Rockwell-Collins), and S. Smolka, co-PI (SUNY). AFRL, $700,000. Iowa portion: $150,000. Start date: 01/01/2013. 2 years.

10. PI, *Kind SMT-based Model checker*. Rockwell-Collins Inc., $24,930. Start date: 01/01/2013. 1 year.

11. PI, *Further Improving Counterexample Generation in Satisfiability Modulo Theories*. Intel Corp., $30,000. Start date: 01/01/2013. 1 year.

12. PI, *Scalable and Accurate SMT-based Model Checking of Data Flow Systems*, with C. Barrett, PI (New York University). AFOSR, $1,122,959 Iowa portion: $522,437. Start date: 08/01/2009. 4 years.

13. PI, *Improving Counterexample Generation in Satisfiability Modulo Theories*. Intel Corporation, $28,000. Start date: 08/15/2011. 1 year.

14. PI, *Parallel Automated Reasoning*, with C. Barrett, PI (New York University). NSF EAGER, $250,000. Iowa portion: $125,202. Start date: 09/01/2010. 2 years.

15. PI, *2010 Midwest Verification Day Workshop* with A. Stump, co-PI. NSF, $5,250. Start date, 07/13/2010. 1 year.

16. co-PI, *A Cross-Community Solver Execution Service. Planning Grant*, with A. Stump, PI, and Geoff Sutcliffe, PI (University of Miami). NSF, $100,000. Iowa portion: $84,197. Start date: 05/01/2010. 1 year.

17. co-PI, *Efficient and flexible proof checking for Satisfiability Modulo Theories*, with A. Stump, PI, and C. Barrett, PI (New York University). NSF, $449,986. Iowa portion: $299,986. Start date: 07/01/2009. 3 years.

18. PI, *SMT-LIB, A common library and infrastructure for satisfiability modulo theories*, with C. Barrett, PI (New York University) and A. Stump, PI (Washington University). NSF, $494,049. Iowa portion: $160,903. Start date: 08/01/2006. 2 years.

19. PI, *CAREER: Fast Provers for Extended Static Checking of Software*. NSF, $404,551. Start date: 06/01/2003. 5 years.

20. PI, *15th Int'l Workshop on Unification (UNIF 2001)*. NSF, $12,780. Start date: 06/01/2001. 5 months.

21. co-PI, *Modular Combination of Satisfiability Procedures*, with Mehdi Harandi, PI (University of Illinois at Urbana-Champaign). NSF, $211,356. Start date 09/01/99. 3 years.

SERVICE

PROFESSION

Associate Editor
The Journal of Automated Reasoning, since Oct 2007; Progress in Computer Science and Applied Logic (Book Series), since 2018.

Trustee or Steering Committee Member
CADE Inc., Int'l Conf. on Automated Deduction, Nov 2005–Nov 2008; ETAPS, European Joint Conf. ons on Theory and Practice of Software, Dec 2013–Dec 2014; FroCoS, Int'l Symposium on Frontiers of Combining Systems, Aug 2010–Jul 2017, Jul 2004–Nov 2007; FTP, Int'l Workshop on First-Order Theorem Proving, Nov 2003–Nov 2012; IJCAR, Int'l Joint Conf. on Automated Reasoning, Oct 2004–Oct 2007; MVD, Midwest Verification Day workshop, 2009—present; SMT, Int'l Workshop on Satisfiability Modulo Theories, Sep 2012–Aug 2014, Sep 2009–Aug 2011

Founder
MVD, Midwest Verification Day workshop; SMT, Int'l Workshop on Sat. Modulo Theories

Program Committee Chair
TACAS 2015, Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems; FroCoS 2011, Int'l Symposium on Frontiers of Combining Systems

Program Committee Member
ARQNL 2014, Workshop on Automated Reasoning in Quantified Non-Classical Logics; ATVA 2021, Int'l Symp. on Automated Technology for Verification and Analysis; CADE 26, 23–19, Int'l Conf. on Automated Deduction; CAV 2021, '19, '15, '14, Int'l Conf. on Computer Aided Verification; CSTVA 2014, Workshop on Constraints in Software Testing, Verification, and Analysis; Disproving 2006, '05, '04, Workshop on Disproving; ECAI 2006, European Conf. on Artificial Intelligence; IJCAR 2020, '18, '14, '12, '10, '08, Int'l Joint Conf. on Automated Reasoning; EMSQMS 2010, Workshop on Evaluation Methods for Solvers and Quality Metrics for Solutions; FMCAD 2014, Conf. on Formal Methods in Computer-Aided Design; FroCoS 2019, '15, '11, '09, '07, '05, '02, Int'l Symposium on Frontiers of Combining Systems; ITP 2018, Int'l Conf. on on Interactive Theorem Proving; LICS 2016, Annual ACM/IEEE Symposium on Logic in Computer Science; LfSA 2010, Workshop on Logics for System Analysis; LPAR 2018, '17, '12, '07, '05, '04, Int'l Conf. on Logic for Programming, Artificial Intelligence, and Reasoning; NFM 2021, '18, '17, '13, NASA Formal Methods Symposium; PAAR

2008, Workshop on Practical Aspects of Automated Reasoning; PDPAR 2006, '05, '04, '03, Int'l Workshop on Pragmatics of Decision Procedures; PxTP 2015, Workshop on Proof eXchange for Theorem Proving; SETTA 2015, Symposium on Dependable Software Engineering: Theories, Tools and Applications; SMT 2020, '19, '16, '14-'07, Int'l Workshop on Satisfiability Modulo Theories; TABLEAUX 2017, Int'l Conf. on Automated Reasoning with Analytic Tableaux and Related Methods; TACAS 2016 '15-'13, Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems; VSTTE 2014, '06, Working Conf. on Verified Software: Tools, Techniques, and Experiments

Co-organizer

Dagstuhl Seminar on Deduction Beyond Satisfiability, 2019; Dagstuhl Seminar on Deduction Beyond First-Order Logic, 2017; CADE-19, Int'l Conf. on Automated Deduction; EMSQMS 2010, Workshop on Evaluation Methods for Solvers and Quality Metrics for Solutions; MVD 2018, 2010, 2009, Midwest Verification Day Workshop; PDPAR 2004, 2003, Int'l Workshop on Pragmatics of Decision Procedures; Int'l SAT/SMT Solvers Summer School 2011; StarExec 2013, 2012 Worshop on StarExec Infrastructure; UNIF 2002, 2001, Int'l Workshop on Unification