

CADE-24: Program

Day I: Tuesday June 11, Sky Room

Session I – Logics to reason about programs (Session Chair: Maria Paola Bonacina)

9:00 - 10:00 Jean-Christophe Filliâtre: *One logic to use them all* (**Invited talk**)

10:00 - 10:30 Radu Iosif, Adam Rogalewicz and Jiri Simacek: *The tree width of separation logic with recursive definitions* (**Best Paper Award winner**)

10:30 - 11:00 Break

Session II – Inference systems (Session Chair: Renate Schmidt)

11:00 - 11:30 Peter Baumgartner and Uwe Waldmann: *Hierarchical superposition with weak abstraction*

11:30 - 12:00 Abdelkader Kersani and Nicolas Peltier: *Completeness and decidability results for first-order clauses with indices*

12:00 - 12:30 Marta Cialdea Mayer: *A proof procedure for hybrid logic with binders, transitivity and relation hierarchies* (talk given by Jimmi Thomson)

12:30 - 14:00 Lunch

Session III – Inference systems (Session Chair: Peter Baumgartner)

14:00 - 14:30 Hubert Comon-Lundh, Veronique Cortier and Guillaume Scerri: *Tractable inference systems: an extension with a deducibility predicate*

14:30 - 15:00 Noran Azmy and Christoph Weidenbach: *Computing tiny clause normal forms*

15:00 - 15:30 Kryštof Hoder and Andrei Voronkov: *The 481 ways to split a clause and deal with propositional variables*

15:30 - 16:00 Break

Session IV – Reasoning about names and votes (Session Chair: Stephan Schulz)

16:00 - 16:30 Markus Bender, Björn Pelzer and Claudia Schon: *E-KRHyper 1.4 – Extensions for unique names and description logic*

16:30 - 17:00 Bernhard Beckert, Rajeev Goré and Carsten Schürmann: *Analyzing vote counting algorithms via logic and its application to the CADE election scheme*

Evening session (Session Chair: Franz Baader)

17:00 - 17:45 Herbrand Award Ceremony

18:00 - 19:30 - Welcome Reception

18:00 - CASC Dinner

Day II: Wednesday June 12, Sky Room

Session I – Reasoning: Paradigms and grand challenges (Session Chair: Neil Murray)

9:00 - 10:00 Natarajan Shankar: *Automated reasoning, fast and slow* (**Invited talk**)

10:00 - 10:30 Zakaria Chihani, Dale Miller and Fabien Renaud: *Foundational proof certificates in first-order logic*

10:30 - 11:00 Break (CASC-24 starts in Room Olympic 4)

Session II – Reasoning about arithmetic (Session Chair: Christoph Weidenbach)

11:00 - 11:30 Leonardo De Moura and Grant Olney Passmore: *Computation in real closed infinitesimal and transcendental extensions of the rationals*

11:30 - 12:00 Ulrich Loup, Karsten Scheibler, Florian Corzilius, Erika Ábrahám and Bernd Becker: *A symbiosis of interval constraint propagation and cylindrical algebraic decomposition*

12:00 - 12:30 Sicun Gao, Soonho Kong and Edmund Clarke: *dReal: An SMT solver for nonlinear theories of the reals*

12:30 - 14:00 Lunch

Session III – Constraint solving (Session Chair: Leonardo de Moura)

14:00 - 14:30 Graeme Gange, Harald Sondergaard, Peter Stuckey and Peter Schachte: *Solving difference constraints over modular arithmetic*

14:30 - 15:00 Serdar Erbatur, Santiago Escobar, Deepak Kapur, Zhiqiang Liu, Christopher Lynch, Catherine Meadows, José Meseguer, Paliath Narendran, Sonia Santiago and Ralf Sasse: *Asymmetric unification: A new unification paradigm for cryptographic protocol analysis*

15:00 - 15:30 Serdar Erbatur, Deepak Kapur, Andrew M Marshall, Paliath Narendran and Christophe Ringeissen: *Hierarchical combination*

15:30 - 16:00 Break

Session IV – Proofs and diagrams (Session Chair: Christoph Benzmüller)

16:00 - 16:30 Cezary Kaliszyk and Josef Urban: *PRoCH: Proof reconstruction for HOL Light*

16:30 - 17:00 Rajeev Goré and Jimmy Thomson: *An improved BDD method for intuitionistic propositional logic: the BDDIntKt system*

Evening session (Session Chair: Franz Baader)

17:00 - 17:30 In memoriam: Mark E. Stickel

17:30 - 18:00 Business Meeting

Day III: Thursday June 13, Sky Room

Session I – Reasoning about software (Session Chair: Chris Lynch)

9:00 - 10:00 Douglas R. Smith: *Coalgebraic specification and refinement* (**Invited talk**)

10:00 - 10:30 Shuvendu Lahiri, Chris Hawblitzel, Henrique Rebêlo and Ming Kawaguchi: *Towards modularly comparing programs using automated theorem provers*

10:30 - 11:00 Break

Session II – Reasoning about programs and time (Session Chair: Viorica Sofronie-Stokkermans)

11:00 - 11:30 Reiner Hähnle, Ina Schäfer and Richard Bubel: *Reuse in software verification by abstract method calls*

11:30 - 12:00 Bernhard Beckert and Daniel Bruns: *Dynamic logic with trace semantics*

12:00 - 12:30 Franz Baader, Stefan Borgwardt and Marcel Lippmann: *Temporalizing ontology-based data access*

12:30 - 13:20 Lunch

Social events

13:30 - 19:00 Excursion

19:00 – Banquet including announcement of CASC-24 winners and hand-out of prizes or certificates to CASC winners, Best Paper Award winners, and Woody Bledsoe Travel Award recipients

Day IV: Friday June 14, Sky Room

Session I – Reasoning about hardware (Session Chair: Brigitte Pientka)

9:00 - 10:00 Greg Morrisett: *Defining, testing, and reasoning about an x86 decoder* (**Invited talk**)

10:00 - 10:30 Marijn Heule, Warren Hunt and Nathan Wetzler: *Verifying refutations with extended resolution*

10:30 - 11:00 Break

Session II – Finding models, exploring theories (Session Chair: Uwe Waldmann)

11:00 - 11:30 Viorica Sofronie-Stokkermans: *Hierarchical reasoning and model generation for the verification of parametric hybrid systems*

11:30 - 12:00 Andrew Reynolds, Cesare Tinelli, Amit Goel, Sava Krstić, Morgan Deters and Clark Barrett: *Quantifier instantiation techniques for finite model finding in SMT*

12:00 - 12:30 Koen Claessen, Moa Johansson, Dan Rosen and Nicholas Smallbone: *Automating inductive proofs using theory exploration*

12:30 - 14:00 Lunch

Session III – ATP Systems (Session Chair: Grant Olney Passmore)

14:00 - 14:30 Geoff Sutcliffe: Presentation and discussion of CASC-24 results

14:30 - 15:00 Daniel Kühlwein, Josef Urban and Stephan Schulz: *The E-MaLeS 1.1 System*

15:00 - 15:30 Jasmin Christian Blanchette and Andrei Paskevich: *TFF1: The TPTP typed first-order form with rank-1 polymorphism*

15:30 - 16:00 Break

Session IV – Reasoning by problem reduction (Session Chair: Maria Paola Bonacina)

16:00 - 16:30 Richard Williams and Boris Konev: *Propositional temporal proving with reductions to a SAT problem*

16:30 - 17:00 Mark Kaminski and Tobias Tebbi: *InKreSAT: Modal reasoning via incremental reduction to SAT*

17:00 - 17:30 Gergely Kovászai, Andreas Fröhlich and Armin Biere: *BV2EPR: A tool for polynomially translating quantifier-free bit-vector formulas into EPR*

17:30 – Farewell