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: Hierarchic 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 BDDIntKI 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 Kovácsznai, Andreas Fröhlich and Armin Biere: BV2EPR: A tool for polynomially translating quantifier-free bit-vector formulas into EPR

17:30 – Farewell