ITP'12: Workshop and Conference Program

Princeton, August 12 - 15, 2012

Saturday, August 11th: Registration at Scully Hall (3pm - 7pm)

Sunday, August 12th: Workshops (Lewis Library)

Breakfast for Scully Hall residents at WILSON College (Wilcox Hall)

Registration in lobby of Lewis Library (8:30 - 17:30) and in Prospect House (18:00 - 20:00)

	Room 120: Coq-Workshop	Room 138: Isabelle-Workshop
9:00 - 9:15	Chair's welcome	
9:15 - 10:15	Michael Warren: Univalence and the formalization of mathematics in Coq (Invited talk)	
10:15 - 10:45	Coffee Break	
10:45 - 12:15	Benjamin Berman, Aaron Stump and Juan Pablo Hourcade: New Coq User Interfaces: Survey and Ideas Enrico Tassi, Bruno Barras: Designing a state transaction machine for Coq Short presentations and discussion about university teaching using Coq	
12:15 - 13:45	Lunch at WILSON College (Wilcox Hall)	
13:45 - 15:15	Hugo Herbelin: Coq team report on the latest developments (Invited talk) Cyril Cohen: Reasoning about big enough numbers in Coq Yves Bertot: Removing the axiom $sin(\pi/2) = 1$ from Coq's library of real numbers	Christian Sternagel: Getting Started with Isabelle/jEdit Brian Huffman, Ondrej Kuncar: Lifting and Transfer: A Modular Design for Quotients in Isabelle/HOL Christian Sternagel: A Locale for Minimal Bad Sequences
15:15 - 15:45	Coffee Break	Coffee Break
15:45 - 17:30	Thomas Braibant, Adam Chlipala: Formal verification of hardware synthesis Gregory Malecha, Adam Chlipala, Thomas Braibant, Patrick Hulin, Edward Z. Yang: Building Bedrock: Verifying a Program Verifier Short presentations and discussion about computation inside Coq	Rene Thiemann: Towards the Certification of Complexity Proofs Ralph Romanos, Larry Paulson: Proving the impossibility of trisecting an angle and doubling the cube Evgeny Dantsin, Jan-Georg Smaus, Sergei Soloviev: Algorithms in Games Evolving in Time: Winning Strategies Based on Testing

18:00 - 20:00: Reception at Prospect House

Monday, August 13th: ITP (Lewis Library, room 120)

Breakfast for Scully Hall residents at WHITMAN College (Community Hall)

Registration in lobby of Lewis Library starting at 8:30

9:00 - 9:15: Welcome

9:15 - 10:15: Invited talk I: Larry Paulson (chair: A. Appel)

MetiTarski: Past and Future

10:15 - 10:45: Coffee Break

10:45 - 12:15: Technical Session I: Formalization of Mathematics I (chair: B. Spitters)

Ruben Gamboa and John Cowles. A Cantor Trio: Denumerability, the Reals, and the Real Algebraic Numbers

Cyril Cohen. Construction of Real Algebraic Numbers in Coq

Maxime Dénès, Anders Mörtberg and Vincent Siles. A Refinement-Based Approach to Computational Algebra in Coq

12:15 - 13:45: Lunch at WHITMAN College (Community Hall)

13:45 - 15:15: Technical Session II: Program Abstraction and Logics (chair: D. Pichardie)

David Greenaway, June Andronick and Gerwin Klein. Bridging the Gap: Automatic Verified Abstraction of C

Tobias Nipkow. Abstract Interpretation of Annotated Commands

Patrick Michel and Arnd Poetzsch-Heffter. Verifying and Generating WP Transformers for Procedures on Complex Data

15:15 - 15:45: Coffee Break

15:45 - 17:15: Technical Session III: Data Structures and Program Synthesis (chair: C. Paulin-Mohring)

Nils Anders Danielsson. Bag Equivalence via a Proof-Relevant Membership Relation

Peter Lammich and Thomas Tuerk. Applying Data Refinement for Monadic Programs to Hopcroft's Algorithm

Marino Miculan and Marco Paviotti. Synthesis of Distributed Mobile Programs using Monadic Types in Coq

17:15 - 18:00: Business Meeting

Tuesday, August 14th: ITP (Lewis Library, room 120)

Breakfast for Scully Hall residents at WHITMAN College (Community Hall)

Registration in lobby of Lewis Library starting at 8:30

9:00 - 10:00: Invited talk II: Gilles Barthe (chair: A. Felty)

Computer-aided Cryptographic Proofs

10:00 - 10:30: Coffee Break

10:30 - 12:00: Technical Session IV: Security (chair: E. Gunter)

David Baelde, Pierre Courtieu, David Gross-Amblard and Christine Paulin-Mohring. Towards Provably Robust Watermarking

Xingyuan Zhang, Christian Urban and Chunhan Wu. Proving the Priority Inheritance Protocol Correct

Reynald Affeldt and Manabu Hagiwara. Formalization of Shannon's Theorems in SSReflect-Coq

12:00 - 13:30: Lunch at WHITMAN College (Community Hall)

13:30 - 15:00: Technical Session V: (Non-)Termination and Automata (chair: T. Nipkow)

Dimitrios Vytiniotis, Thierry Coquand and David Wahlstedt. Stop When You are Almost-Full

Christian Sternagel and René Thiemann. Certification of Nontermination Proofs

Andrea Asperti. A Compact Proof of Decidability for Regular Expression Equivalence

15:00 - 15:30: Coffee Break

15:30 - 17:00 Abella-Tutorial: Andrew Gacek (chair: R. Pollack)

17:00 - 21:00: Excursion

Canoeing and kayaking on the Delaware & Raritan Canal, followed by BBQ on the shore of Carnegie Lake

Wednesday, August 15th: ITP (Lewis Library, room 120)

Breakfast for Scully Hall residents at WHITMAN College (Community Hall)

Registration in lobby of Lewis Library starting at 8:30

9:00 - 10:00: Invited talk III: André Platzer (chair: L. Beringer)

Differential Dynamic Logic and Differential Invariants for Hybrid Systems

10:00 - 10:30: Coffee Break

10:30 - 11:30: Technical Session VI: Program Verification (chair: A. Chlipala)

William Mansky and Elsa Gunter. Using Locales to Define a Rely-Guarantee Temporal Logic

Jesper Bengtson, Jonas Braband Jensen and Lars Birkedal. Charge! A Framework for Higher-Order Separation Logic in Coq

11:30 - 12:10: Rough Diamonds I: Reasoning about Program Execution (chair: A. Kennedy)

Gerwin Klein, Rafal Kolanski and Andrew Boyton. Mechanised Separation Algebra

Anthony Fox. Directions in ISA Specification

12:10 - 13:45: Lunch at WHITMAN College (Community Hall)

13:45 - 14:45: Technical Session VII: Theorem Prover Development (chair: G. Klein)

Jasmin Christian Blanchette, Andrei Popescu, Daniel Wand and Christoph Weidenbach. More SPASS with Isabelle: Superposition with Hard Sorts and Configurable Simplification

Georges Gonthier and Enrico Tassi. A Language of Patterns for Subterm Selection

14:45 - 15:15: Coffee Break

15:15 - 16:15: Technical Session VIII: Formalization of Mathematics II (chair: R. Gamboa)

Fabian Immler and Johannes Hölzl. Numerical Analysis of Ordinary Differential Equations in Isabelle/HOL

Lars Noschinski. Proof Pearl: A Probabilistic Proof for the Girth-Chromatic Number Theorem

16:15 - 16:55: Rough Diamonds II: Prover Infrastructure and Modeling Styles (chair: S. Berghofer)

Ramana Kumar and Joe Hurd. Standalone Tactics using OpenTheory

Magnus O. Myreen. Functional Programs: Conversions between Deep and Shallow Embeddings

16:55 - 17:00: Closing Remarks

Thursday, August 16th: no events

Breakfast for Scully Hall residents at WHITMAN College (Community Hall)