

APLAS – CPP 2012 Program

December 11 (Tuesday)

- 9:30 Registration
- 10:00 Opening
- 10:15 APLAS Invited talk by Jan Vitek (chair: Ranjit Jhala)
“Planet Dynamic or: How I Learned to Stop Worrying and Love Reflection”
- 11:15 (Short break)
- 11:30 APLAS Session 1: Concurrency (chair: Aquinas Hobor)
Siliang Li, Yu David Liu and Gang Tan: “JATO: Native Code Atomicity for Java”
Yi Lu, John Potter and Jingling Xue: “Ownership Types for Object Synchronisation”
- 12:20 (Lunch break)
- 14:00 APLAS Session 2: Security (chair: Steve Zdancewic)
Lennart Beringer: “End-to-end multilevel hybrid information flow control”
Thomas Austin, Cormac Flanagan and Martín Abadi:
“A Functional View of Imperative Information Flow”
Radha Jagadeesan, Corin Pitcher and James Riely:
“Succour to the Confused Deputy: Types for Capabilities”
Aseem Rastogi, Avik Chaudhuri and Rob Johnson:
“Types and Access Controls for Cross-Domain Security in Flash”
- 15:40 (Break)
- 16:10 APLAS Session 3: Static Analysis I (chair: Thomas Jensen)
Giulia Costantini, Pietro Ferrara and Agostino Cortesi:
“Linear approximation of continuous systems with Trapezoid Step Functions”
Jorge Navas, Peter Schachte, Harald Sondergaard and Peter Stuckey:
“Signedness-Agnostic Program Analysis: Precise Integer Bounds for Low-Level Code”
Pascal Sotin and Xavier Rival:
“Hierarchical Shape Abstraction of Dynamic Structures in Static Blocks”
Krystof Hoder, Andreas Holzer, Laura Kovacs and Andrei Voronkov Vinter:
“A Vampire-Based Tool for Interpolation (tool)”
- 17:50 (Day 1 over)

December 12 (Wednesday) morning

- 9:15 APLAS Session 4: Static Analysis II (chair: Tachio Terauchi)
Kalmer Apinis, Helmut Seidl and Vesal Vojdani:
“Side-Effecting Constraint Systems: A Swiss Army Knife for Program Analysis”
Mehdi Bouaziz, Francesco Logozzo and Manuel Fahndrich:
“Inference of Necessary Field Conditions with Abstract Interpretation”
- 10:05 (Break)
- 10:40 APLAS Session 5: Language Design (chair: Keiko Nakata)
Oleg Kiselyov, Simon Peyton-Jones and Amr Sabry:
“Lazy v. Yield: Incremental, Linear Pretty-printing”
Gabrielle Anderson and Julian Rathke:
“Dynamic Software Update for Message Passing Programs”
Rémy Wyss, Frédéric Boniol, Julien Forget and Claire Pagetti:
“A synchronous language with partial delay specification for real-time systems programming”
- 11:55 (Lunch break)

December 12 (Wednesday) afternoon

- 14:00 APLAS Session 6: Dynamic Analysis (chair: Atsushi Igarashi)
Niloofar Razavi, Franjo Ivancic, Vineet Kahlon and Aarti Gupta:
"Concurrent Test Generation using Concolic Multi-Trace Analysis"
Lukáš Marek, Yudi Zheng, Danilo Ansaloni, Aibek Sarimbekov, Walter Binder,
Petr Tůma and Zhengwei Qi:
"Java Bytecode Instrumentation Made Easy: The DiSL Framework for
Dynamic Program Analysis (tool)"
- 14:50 APLAS Poster and Demo Session
Francois Berenger, Arnout Voet and Kam Y. J. Zhang:
"Parallelization of a Computer Aided Drug Design Software with OCaml"
Aquinas Hobor, Soe Lin Myat and Bimlesh Wadhwa:
"VisualizeSLE: A Visual Editor for Separation Logic Entailments"
Kanako Homizu, Ken Wakita and Akira Sasaki:
"A Proposal of Implementation Technique for Hygienic Syntactic
Macro System for JavaScript"
Shin-ya Katsumata: "A Generic Soundness Result for Effect Systems"
Kazutaka Matsuda and Meng Wang: "FLiPpr: A Prettier Invertible Printing System"
Akimasa Morihata and Shigeyuki Sato: "Syntax-Directed Parallel Data Flow Analysis"
Haruna Nishiwaki, Tomoharu Ugawa, Seiji Umatani, Masahiro Yasugi and Taiichi Yuasa:
"Detecting Bugs in Android Using a Static Escape Analyzer SEAN for Native Code"
Julian Rathke, Paweł Sobociński and Owen Stephens:
"ML kappa: Introducing Monoidal Categories to ML"
Idrisov Renat: "Sisal-based cloud service for educational and computation proposes"
Kanae Tsushima and Kenichi Asai: "An Embedded Type Debugger (demo)"
Masahiro Yasugi:
"Typed Construction of Cyclic Data Structures Using Provisional Assumptions"
Oleg Kiselyov: "Can generative programming deliver?"
Lukáš Marek, Yudi Zheng, Danilo Ansaloni, Aibek Sarimbekov, Walter Binder,
Petr Tůma and Zhengwei Qi:
"Java Bytecode Instrumentation Made Easy: The DiSL Framework for
Dynamic Program Analysis (tool)"
Pascal Sotin and Xavier Rival:
"Hierarchical Shape Abstraction of Dynamic Structures in Static Blocks (demo)"
Mehdi Bouaziz, Francesco Logozzo and Manuel Fahndrich:
"Inference of Necessary Field Conditions with Abstract Interpretation"
Kryštof Hoder, Andreas Holzer, Laura Kovacs and Andrei Voronkov:
"Vinter: A Vampire-Based Tool for Interpolation (demo)"
- 15:50 (Break)
- 16:20 APLAS Session 7: Semantics and Complexity (chair: Yuki Yoshi Kameyama)
Alois Brunel and Antoine Madet:
"Indexed realizability for bounded-time programming with references and type fixpoints"
Martin Avanzini, Naohi Eguchi and Georg Moser:
"A New Order-theoretic Characterisation of the Polytime Computable Functions"
Marek Materzok and Dariusz Biernacki:
"A Dynamic Interpretation of the CPS Hierarchy"
- 17:35 (Day 2 over)

December 13 (Thursday)

- 9:10 Joint invited talk by Greg Morrisett (chair: Zhong Shao)
"Scalable Formal Machine Models"
- 10:10 (Break)
- 10:35 APLAS Session 8: Program Logics and Theorem Provers (chair: Chung-Kil Hur)
Yu Guo, Xinyu Feng, Zhong Shao and Peizhi Shi:
"Modular Verification of Concurrent Thread Management"
David Costanzo and Zhong Shao:
"A Case for Behavior-Preserving Actions in Separation Logic"
James Brotherston, Nikos Gorogiannis and Rasmus Petersen:
"A Generic Cyclic Theorem Prover"
Xuan Bach Le, Cristian Gherghina and Aquinas Hobor:
"Decision Procedures Over Sophisticated Fractional Permissions"
- 12:15 (Lunch Break)
- 14:00 Joint invited talk by Xavier Leroy (chair: Dale Miller)
"Mechanized Semantics for Compiler Verification"
- 15:00 (Break)
- 15:30 CPP Session 1: Certified Compilation (chair: Chris Hawblitzel)
Valentin Robert and Xavier Leroy: "A formally-verified alias analysis"
Jianzhou Zhao and Steve Zdancewic:
"Mechanized Verification of Computing Dominators for Formalizing Compilers"
Dominic Mulligan and Claudio Sacerdoti Coen:
"On the correctness of an optimising assembler for the MCS-51 microcontroller"
- 17:00 (Day 3 over)
- 19:00 APLAS – CPP Banquet at The Sodo Higashiyama

December 14 (Friday) morning

- 9:10 CPP Invited Talk by Gilles Barthe (chair: Gerwin Klein)
"Automation in Computer-Aided Cryptography: Proofs, Attacks and Designs"
- 10:10 (Break)
- 10:40 CPP Session 2: Execution and Testing (chair: Gerwin Klein)
Brian Campbell: "An Executable Semantics for CompCert C"
Pierre-Nicolas Tollitte, David Delahaye and Catherine Dubois:
"Producing Certified Functional Code from Inductive Specifications"
Lukas Bulwahn: "The New Quickcheck for Isabelle –
Random, Exhaustive and Symbolic Testing Under One Roof"
- 12:10 (Lunch break)

December 14 (Friday) afternoon

- 14:00 CPP Session 3: Operating Systems and Security (chair: Chris Hawblitzel)
Andrei Popescu, Johannes Hölzl and Tobias Nipkow:
 “Proving concurrent noninterference”
Toby Murray, Daniel Matichuk, Matthew Brassil, Peter Gammie and Gerwin Klein:
 “Noninterference for Operating System Kernels”
Alexander Vaynberg and Zhong Shao:
 “Compositional Verification of a Baby Virtual Memory Manager”
- 15:30 (Break)
- 16:00 CPP Session 4: Elegant Proofs (chair: Zhong Shao)
Keisuke Nakano: “Shall We Juggle, Coinductively?”
Beniamino Accattoli:
 “Proof pearl: Abella formalization of lambda calculus cube property”
Hing-Lun Chan and Michael Norrish:
 “A String of Pearls: Proofs of Fermat’s Little Theorem”
- 17:30 (Day 4 over)

December 15 (Saturday)

- 9:10 CPP Invited Talk by Naoki Kobayashi (chair: Georges Gonthier)
 “Program Certification by Higher-Order Model Checking”
- 10:10 (Break)
- 10:40 CPP Session 5: Logic and Types (chair: Dale Miller)
Kaustuv Chaudhuri: “Compact Proof Certificates for Linear Logic”
Christian Doczkal and Gert Smolka:
 “Constructive Completeness for Modal Logic with Transitive Closure”
Andrea Asperti and Wilmer Ricciotti: “Rating Disambiguation Errors”
- 12:10 (Lunch break)
- 14:00 CPP Session 6: Mathematics (chair: Georges Gonthier)
Pierre Neron:
 “A Formal Proof of Square Root and Division Elimination in Embedded Programs”
Anders Mörtberg, Thierry Coquand and Vincent Siles:
 “Coherent and Strongly Discrete Rings in Type Theory”
Sylvie Boldo, Catherine Lelay and Guillaume Melquiond:
 “Improving Real Analysis in Coq: a User-Friendly Approach to Integrals
 and Derivatives”