Andrew Myers

We had the pleasure of listening to a talk by Andrew Myers. In his talk, *Programming with Explicit Security Policies*, he demonstrated how to create secure systems by construction by accompanying programs with explicit, machine checked security policies. These should be written by programmers as part of program development. He presented the core ideas of confidentiality and integrity, explained how to specify information flow policies in code and the type rules that verify correctness of policy declarations. These capabilities are implemented in the language Jif which is freely downloadable.

Ken McMillan

The second invited talk was by Ken McMillan. He surveyed some recent applications of Craig interpolants in Model Checking. This approach gives a complete procedure for model checking temporal properties of finite-state systems that allows to exploit recent advances in SAT solvers for the proof generation phase. He showed how these approaches could be used in both hardware and software and also how they could be used to automatically obtain predicates for predicate abstraction.

Program Change

There has been a slight change in the programme. Talks in second morning session of TACAS have been reordered. See reverse for current schedule.

Interview with Marcelo Fiore

Daily ETAPS spoke with keynote speaker Marcelo Fiore about his recent talk.

[Daily ETAPS] Can you give us a little history leading to the topic of your talk?

[Marcelo Fiore] I started working in domain theory, with my thesis *Axiomatic Domain Theory in Categories of Partial Maps*. There are many different categories of domains in which the same results hold —importantly adequacy theorems— and I wanted to show that these followed from general abstract principles. Thus, it was natural to axiomatize and investigate domain-theoretic models in this light. Along the way, and in enjoyable collaboration with various colleagues, I applied the axiomatic approach in different computational scenarios. In particular, with Eugenio Moggi and Davide Sangiorgi we constructed a *denotational model of the π-calculus* for which we established full abstraction axiomatically. Not much later, it was pointed out to me (at a PSSL meeting, if I remember correctly) that the constructor that we use for modeling bound output had been considered by André Joyal in the different setting of *combinatorial species of structures* as a differentiation operator. Ever since I've been interested in understanding and deepening the connection. Yet another piece was added to the puzzle by my work with Gordon Plotkin and Daniele Turi on *algebraic theories with variable-binding operators*. There an operator of context extension (again similar to that of differentiation) serves for modeling variable-binding. The first part of my contribution to the FOSSACS conference proceedings gives an outline of the unifying technical themes underlying these developments.

[DE] What do you see the role of mathematical models (axiomatic, operational, denotational) is in general, and in particular in the context of the work you presented on generalized combinatorial species of structures?

[MF] My rough general view is that in studying and investigating computation structures we should have as many models (of the various sorts you mention) related in the strongest possible cohesive way. In fact, achieving such situations is a recurrent theme in my research. Of course this is generally hard, but of great value I believe. For instance, operational semantics is very good at quickly adapting to various computational scenarios but less so than denotational semantics at helping to identify mathematical structure, and vice versa. The work on generalized species has its intellectual roots in the idea of viewing combinatorial structure (as it appears in mathematics) from the perspective of programming-language theory, with the aim of leading to language design (under the guidance of the mathematical model) and with the further hope of being able to incorporate algorithmic studies (as e.g. in the work of Flajolet et al.).

Interview: Future of ETAPS

Daily ETAPS caught up with Perdita Stevens, the current chair of the ETAPS steering committee, and asked her a few questions about the future of ETAPS.

[Daily ETAPS] ETAPS seems to be growing every year. Do you think this trend will continue?

[Perdita Stevens] I think success breeds success - the more people know that ETAPS is an exciting event, the more people want to come, the more people submit their best work, and the more exciting ETAPS gets. On the other hand we're reaching the limit of what can realistically be organised in a university.

[DE] What is ETAPS's main role? Is its mandate the same as it was originally. How will this change in future.

[PS] ETAPS is now the major European event for researchers working in its scope; it has grown into this role over the years. I expect and hope that it will remain in that role. Of course, the development of new application areas and new kinds of theory will change the content of ETAPS, most obviously in the changing array of satellite events (CMSB and TGC are both examples of satellites that wouldn't have been conceived when ETAPS began, for example).

[DE] Given that there is a wide scope would it make sense to have an event for PhD students?

[PS] That's a very interesting idea, and I know it works well in other conferences. I expect that if someone offered to organise a doctoral symposium as a satellite event, future organisers would be happy to consider the idea.

[DE] How involved was industry in funding. Has this changed over the years?

[PS] This year, there was unfortunately very little industry funding; one reason seems to have been that by coincidence there are several other events in Edinburgh this year (especially IJCAI) competing for funding. Local factors have a large impact; I'm not sure if there's really a trend.

[DE] Do you think that increased industrial interest in formal methods will make funding easier?

[PS] I'd like to think so, but I think that's a bit optimistic!

Dinner at Jury's Inn

Tonight there will be a Dinner organised for conference attendees at Jury's Inn, 43 Jeffrey Street. The hotel is located close by in the heart of the old city, right beside the Royal Mile. For more information see the registration desk.

Directions. To get to Jury's Inn walk North on George IV to the Royal Mile, turn right walk straight until you reach St. Mary's St/Jeffrey St. then turn left. You will find Jury's Inn 100 meters or so on the left hand side of the street.

What's On

Film At Edinburgh's independent cinema, The Filmhouse(88 Lothian Road) the Italian film festival kicks off with a number of acclaimed new works. Two particular films are the comedy "My Brother In Law" (Fri 6.15pm) and "Consequences of Love" (Sat 8:30pm).

Music Tonight at Henry's Jazz Cellar(8-16 Morrison Street) The Laura MacDonald Octet, an energetic local product, will be playing a mix of new compositions and jazz standards. At Venue (15-17 Carlton Road) Sam Brown, a multitalented musician who played with Jules Holland and Dave Gilmour will be playing a varied set of R&B, Blues, and Jazz Piano.

Weather

Today A bright but cold day with possible sleet or snow showers late in day, most frequent in the east. Cold. Maximum temperature 5 deg C

Tomorrow Windy but becoming drier and a little milder. Maximum temperature 12 deg C

Sunday Bright with chance of clouds. Small chance of light showers. Maximum temperature 12 deg C

See you in Vienna!

Program information

Session chairs and speakers: please meet 10 minutes before the start of your session in order to check that the beamer works for you!

9:00 – 10:00   FIRST MORNING SESSION^{GS}

FASE^{GS} Invited Lecture (Chair: Maura Cerioli)

Checking Memory Safety with Blast
Tom Henzinger.

10:00 – 10:30   COFFEE^{Con}

10:30 – 12:30   SECOND MORNING SESSION

ESOP^{L5} Security (Chair: Andrei Sabelfeld)

A Design for a Security-typed Language with Certificate-based Declassification
Stephen Tse, Steve Zdancewic.

Adjoining Declassification and Attack Models by Abstract Interpretation
Roberto Giacobazzi, Isabella Mastroeni.

Enforcing Resource Bounds via Static Verification of Dynamic Checks
Ajay Chander, David Espinosa, Nayeem Islam, Peter Lee, George Necula.

Asserting Bytecode Safety
Martin Wildmoser, Tobias Nipkow.

FASE^{L2} Code Understanding and Validation (Chair: Ernesto Pimentel)

A Framework for Counterexample Generation and Exploration
Marsha Chechik, Arie Gurfinkel.

Using Annotations to Check Structural Properties of Classes
Michael Eichberg, Thorsten Schäfer, Mira Mezini.

Improving System Understanding via Interactive, Tailorable Source Code Analysis
Vladimir Jakobac, Alexander Egyed, Nenad Medvidovic.

Kaveri: Delivering Indus Java Program Slicer to Eclipse
Ganeshan Jayaraman, Venkatesh Prasad Ranganath, John Hatcliff.

TACAS^{L4} Specification, Program Synthesis (Chair: Jens Knoop)

PLEASE NOTE!! Order of talks changed from programme

Mining Temporal Specifications for Error Detection
Westley Weimer, George C. Necula.

Compositional Message Sequence Charts (CMSCs) are better to Implement than MSCs
Blaise Genest.

Temporal Logic for Scenario-Based Specifications
Hillel Kugler, David Harel, Amir Pnueli, Yuan Lu, Yves Bontemps.

A New Algorithm for Strategy Synthesis in LTL Games
Aidan Harding, Mark Ryan, Pierre-Yves Schobbens.

12:30 – 14:30   LUNCH - SEE RESTUARANT LIST P.56 PROGRAMME

14:30 – 16:30   FIRST AFTERNOON SESSION

ESOP^{L5} Types (Chair: Xavier Leroy)

Subtyping First Class Polymorphic Components
Jão Costa Seco, Luís Caires.

Complexity of Subtype Satisfiability over Posets
Joachim Niehren, Tim Priesnitz, Zhendong Su.

A Type System Equivalent to a Model Checker
Mayur Naik, Jens Palsberg.

Instant Polymorphic Type Systems for Mobile Process Calculi: Just Add Reduction Rules and Close
Henning Makholm, J.B. Wells.

FASE^{L2} The UML (Chair: Michel Wermelinger)

Non-local Choice and Beyond: Intricacies of MSC Choice Nodes
Arjan J. Mooij, Nicolae Goga, Judi M.T. Romijn.

Coverage Criteria for Testing of Object Interactions in Sequence Diagrams
Atanas Rountev, Scott Kagan, Jason Sawin.

Tools for Secure Systems Development with UML: Security Analysis with ATPs
Jan Jürjens, Pasha Shabalin.

Maintaining Life Perspectives during the Refinement of UML Class Structures
Alexander Egyed, Wuwei Shen, Kun Wang.

TACAS^{L4} Tool Presentations 2 (Chair: Andreas Kuehlmann)

FocusCheck: A Tool for Model Checking and Debugging Sequential C Programs
Curtis W. Keller, Diptikalyan Saha, Samik Basu, Scott A. Smolka.

SATABS: SAT-based Predicate Abstraction for ANSI-C
Edmund Clarke, Daniel Kröning, Natasha Sharygina, Karen Yorav.

DiVer: SAT-based Model Checking Platform for Verifying Large Scale Systems
Malay Ganai, Gupta Aarti, Ashar Pranav.

BISIMULATOR: A Modular Tool for On-the-Fly Equivalence Checking
Damien Bergamini, Nicolas Descoubes, Christophe Joubert, Radu Mateescu.

16:30 – 17:00   COFFEE^{Con}

17:00 – 18:30   SECOND AFTERNOON SESSION

ESOP^{L5} Java Foundation (Chair: David Schmidt)

Towards a Type System for Analyzing JavaScript Programs
Peter Thiemann.

Java Jr: Fully Abstract Trace Semantics for a Core Java Language
Alan Jeffrey, Julian Rathke.

FASE^{L2} Automatic Proofs and Provers (Chair: Reiko Heckel)

Automated Compositional Proofs for Real-time Systems
Carlo A. Furia, Matteo Rossi, Dino Mandrioli, Angelo Morzenti.

Iterative Circular Coinduction for CoCASL in Isabelle/HOL
Daniel Hausmann, Till Mossakowski, Lutz Schröder.

Formalisation and Verification of Java Card Security Properties in Dynamic Logic
Wojciech Mostowski.

TACAS^{L4} Model-checking (Chair: Kim Larsen)

Shortest Counterexamples for Symbolic Model Checking of LTL with Past
Viktor Schuppan, Armin Biere.

Snapshot Verification
Blaise Genest, Dietrich Kuske, Anca Muscholl, Doron Peled.

Time-efficient Model Checking with Magnetic Disk
Tonglaga Bao, Michael Jones.

19:30 –   DINNER
Jury's Inn, 43 Jeffrey Street

TGC Program information

10:30 – 12:30   SECOND MORNING SESSION^{L1}
Invited Talk: Model-based Testing of Cryptographic Protocols
W. Schulte

12:30 – 14:30   LUNCH

14:30 – 16:30   FIRST AFTERNOON SESSION^{L1}
Invited Talk: Types for Security in a Mobile World
Elsa Gunter

16:30 – 17:00   COFFEE^{Con}

17:00 – 18:30   SECOND AFTERNOON SESSION^{L1}

^{GS}—George Square Lecture Theatre ^{L1}—Appleton Tower Lecture Theatre 1 ^{L2}—Appleton Tower Lecture Theatre 2
^{L4}—Appleton Tower Lecture Theatre 4 ^{L5}—Appleton Tower Lecture Theatre 5 ^{Con}—Appleton Tower Concourse