



Le Grand Tour

In the last 16 years, ETAPS has done a very long travel around Europe: Lisbon, Amsterdam, Berlin, Genoa, Grenoble, Warsaw, Barcelona, Edinburgh, Wien, Braga, Budapest, York, Paphos, Saarbruchen, Tallinn and Rome. Next year, it will be back in Grenoble. What about 2015? There are still countries that have never hosted it: Swiss, Ireland, Belgium, Denmark, Norway, Sweden, ... But it is also possible to think at a stop outside Europe. Tonight, the Steering Committee will receive bids for ETAPS 2015 and next Thursday the Steering Committee will decide the 18th stop of this journey. What do you bet on?

A thematic journey into Rome: Ancient Rome

All the historical center of Rome has been declared world heritage by UNESCO in 1980. It includes unique examples of the social, public and private art of Ancient Rome. One of the symbols of the city is the *Colosseo* (Anfiteatro Flavio), the most astonishing amphitheatre of the period, built in the I century AD. Close to it, you can find another symbol of Ancient Rome, the complex of the Imperial Fora.

But Rome is not just this. There are plenty of baths, basilicas, aqueducts, palaces, porticoes, theaters, circuses, ... that make Ancient Rome unique. For



that every tourist coming in Rome should have seen before leaving. But, still, Ancient Rome is not just



this: out of the center, you can find two unmissable sites: the Ancient Ostia (the old Roman suburb built around the Roman Harbour on the Tirreanean Sea) and *Villa Adriana* near Tivoli (a beautiful archeological complex built as a retreat for Emperor Hadrian). Both sites are still well preserved and provide several insights on the life style of Ancient Rome.



example, the baths of Caracalla and of Trajan, the Circus Massimus, the Basilica of Maxentius, the Servian and Aurelian walls, Nero's Domus Aurea, the Arch of Constantine, the Mausoleum of Hadrian (today known as *Castel Sant'Angelo*), the Altar of Augustan Peace (aka, *Ara Pacis*), form a highly incomplete list of sites



Today's program:

Timetable:

9⁰⁰-10⁰⁰: POST invited talk
10⁰⁰-10³⁰: coffee break
10³⁰-12³⁰: parallel sessions
12³⁰-14⁰⁰: lunch
14⁰⁰-15³⁰: parallel sessions
15³⁰-16⁰⁰: coffee break
16⁰⁰-18⁰⁰: parallel sessions

Scientific Events:

Invited talk (Hubaux): Aula Magna (campus)
ESOP: room B2
FoSSaCS: room A1
POST: room A2
TACAS: room B1

Other Events:

IFIP WG 1.7 meeting: room A2
lunch time
SC meeting (bids for ETAPS'15): room A1, 18⁰⁰-19⁰⁰

Weather forecast:

	9-13	13-17	17-22
Tue			
Wed			
Thu			



An interview to Martin Hofmann

Yesterday, Martin Hofmann gave a talk on logical approaches to amortised resource analysis. Martin received his PhD at the University of Edinburgh in 1995 under the direction of Don Sannella and Gordon Plotkin. His thesis and some of his early work focused on the extensionality and intensionality in type theory,



work that has recently gained currency again with the advent of homotopy type theory. In his most well-known research, he has studied structural characterizations of time and space complexity in a variety of programming models. One of the most exciting and surprising developments in this area has been his discovery that amortized resource analysis can be studied with logical means.

Do you know how the algorithm/complexity community looks at your work? Have you had interactions, feedbacks?

Rather little, but one must see that the goals are very different. Devising and analysing (by hand) new algorithms as opposed to automatically analysing existing ones and on the basis of concrete implementations as opposed to pseudocode or informal descriptions. Our ICC work on pointer machines does attract attention and positive feedback of people from finite model theory which, I suppose, sits somewhere between PL and "Algorithms/Complexity" for instance.

Which are the relationships between your work and implicit computational complexity?

Lots. In fact, this grew out of implicit computational complexity as I did mention in my talk and I've taught some of this material in ICC graduate schools. In the other direction, I think it drew attention in the ICC community to the need of thinking about implementations and automatic inference.

Besides the work you presented here, which are, in your opinion, the main achievements of type theory? Security, verification, proof theory or what else?

Of course, the enormous success of type theory based theorem provers such as Coq in verification, program-

ming language theory, formalisation of mathematics comes to mind. Wednesday's invited talk by Gilles Barthe shows impressive applications of this. Also the session types for web programming pioneered by Kohei Honda are an important success story. On the other hand, there has been in the past the problem that type systems and their soundness proofs get more and more complicated so that it may be difficult to understand what exactly it is they purport to guarantee. I find it is very important in this area to focus on end-to-end properties and to decouple inference from soundness.

And which are in your opinion the main (direct or indirect) impact of type theory in practice of software development?

I guess the most visible impact is the rise of strongly typed languages such as Scala, Fsharp, Java 2.0, and, most recently, Haskell. I also think that types are the right way of organising classical program analyses when there are many functions, even higher-order, and complex data structures. Incidentally, this is (a paraphrase of) the main message of the book by Nielson, Nielson, Hankin on Principles of Program Analysis.

The Sironi Fresco

All joint sessions take place in the Aula Magna of the Rectorate building. It is the hearth of the campus and of all Sapienza; it was built by the architect Marcello Piacetini in 1933-35 and contains around 1000 people.



The most notable feature of the venue is the amazing fresco by Mario Sironi, entitled "Italia tra le Arti e le Scienze" (Italy between Arts and Sciences), dated 1935. The paint is inspired by the fascist tastes and is a symbolic representation of the moral and social growing of the nation, due to arts and sciences, that the University promotes. The fresco is considered Sironi's masterpiece.

On top of it, a latin inscription says: *Doctrinae studium vitam producit et auget immortalis eris si sapias iuvenis*, that means "The love for knowledge generates and makes life richer; young people, if you know, you'll be immortal".