A dinner in the student district

The workshop dinner tonight will take place in the district of San Lorenzo. It occupies roughly the two sides of the early stretch of Via Tiburtina, starting from Termini railway station and ending at the Verano area; the latter hosts the historical cemetery of Rome and the ancient basilica of *San Lorenzo fuori le Mura*, which the district takes its name from. Originally inhabited by working-class people (mostly workers of the Peroni Brewery and the freight yard), it has always been a popular, left-oriented area.

During World War II, San Lorenzo was heavily bombed by Allied planes (19th July 1943) for disrupting the nearby rail station; however, it caused also extensive damage to the buildings of the district (including the Policlinico Umberto I and the basilica itself) and killing several hundreds of people. Today San Lorenzo, due to the vicinity of the La Sapienza University, is increasingly assuming the character of a student and young artist district. Every evening, hundreds of young people descend on the area. Pizzerias, boutiques and other modern places are subsequently replacing the old popular workshops and small markets.

A thematic journey into Rome: Museums

Rome contains vast quantities of priceless art, sculpture and treasures, which is mainly stored in Rome's many museums. Every tourist can find the museum fitting its desires.

The *Capitoline Museums* are a group of archeological museums in Piazza del Campidoglio, a square conceived by Michelangelo in 1536. The collection includes a large number of ancient Roman statues (including the equestrian statue of Marc'Aurelio, symbol of ETAPS'13) and inscriptions, as well as a collection of

medieval and Renaissance art. You can find a similar collection in the *Centrale Montemartini*, a former power station in southern Rome (close to the Metro station Garbatella), where old statues and 19th-century machineries are juxtaposed.

The *Borghese Gallery* is housed in the former Villa Borghese and contains a unique collection of paintings, sculpture and antiquities; it contains several masterpieces by Caravaggio, (*Boy with a Basket of Fruit*, *St. Jerome*, *Sick Bacchus*), Titian, Raphael, Canova, Bernini and many others.

The *Vatican Museums* are among the greatest museums in the world, since they display works from the immense collection built up by the Roman Catholic Church throughout the centuries. The pinacoteca includes works by Giotto, Caravaggio, Leonardo, Raphael, but this is just a small part of the treasures you can find therein: the Sistine Chapel, the Raphael Rooms and the Gallery of Maps are part of the Museum.

Rome is not only ancient art; you also have the *National Gallery of Modern Art* and the *National Museum of the 21st Century Arts* (MAXXI), as well as more peculiar museums, like the *Pasta Foods Museum*.

Today's program:

Timetable:
9:00-11:00: workshops
11:00-11:30: coffee break
11:30-12:30: workshops
12:30-14:00: lunch
14:00-15:30: workshops
15:30-16:00: coffee break
16:00-18:00: workshops

Scientific Events:
Bytecode: room G
CerCo: room E
FESCA: room F
GT-VMT: room A2 + D
PLACES: room C
QAPL: room A1
TERMGRAPH: room A2

Social event:
Workshop dinner

Weather forecast:

	9-13	13-17	17-22
Sat	⛅	⛅	⛅
Sun	☁	☁	☁
Mon	🌧	🌧	🌧

SAPIENZA
Università di Roma

An interview with Emery Berger

The first talk of Friday was given by Emery Berger, the CC invited speaker, about his recent development of AutoMan.

Crowdsourcing introduces the problem of what your collaborator Daniel Barowy has called "truthiness", i.e. untrue conceptions held true by most people, introducing systematic biases. How are systems in the future going to deal with this?
We jokingly refer to the consensus of human results as truthiness (a term borrowed from a satirical TV program in the US called The Colbert Report) to highlight the fact that it is not possible to ascertain what is true by asking people; instead, AutoMan derives the desired level of confidence in the answers to be fairly certain that the result is indeed reflective of honest responses. These may reflect a consensus that is in fact technically incorrect, but nonetheless reflective of people's true, best efforts to answer a question / perform a human computation. Nobody is perfect, and to err is huma. That said, in general, the kind of tasks we expect people to use AutoMan for are generally ones that exploit human skills such as image recognition and understanding, which people are actually quite good at.

Aspects related to human computer interaction are becoming paramount in several areas, e.g. security. Where are we standing with respect to the possibility of having integrated models of human and computerised activities?
I think modeling human behavior, especially via facts obtained through careful experimentation, is a fascinating research topic, but it is orthogonal to AutoMan. We adopted a very conservative approach when designing AutoMan -- it is more or less agnostic to the fact that humans are providing answers to its functions. as far as AutoMan is concerned, participating humans are more or less just unreliable computation devices. Of course, AutoMan takes steps to ensure that humans who are just guessing are likely to appear as random, which it does by randomizing question answers and checkboxes. Perhaps it would be best to say that AutoMan's only real assumption of human behavior is that some people are lazy and that people often seek to maximize their financial gain with minimal effort. This is probably not news to anyone studying human behavior.

How can we devise when to go for a "human" as opposed to a "computer-based" computation and where will the separation line ten years from now?
We can rephrase the question as "What is easy for us to do?" We keep pushing the boundary, for example through machine learning methods, but 95% accuracy is still actually very hard for automatic systems. So, the tendency will be combining machine-learning and human computation. Machine learning always struggles with the absence of big training sets. Answers coming from human computation can provide exactly them. So, we are providing tools to help building that kind of synergy. Some people believe that computers will eventually be able to do everything people can do (in terms of intelligent tasks). If a programming language comes out by which these problems are solved without human involvement, that will be fantastic and I will be happy to see AutoMan go away. Until that time, it is nice to have a way of putting people in the loop.

An interview with Mark Miller

The second talk of yesterday was given by Mark Miller, the invited speaker of ESOP, speaking about distributed electronic rights in JavaScript.

What is needed for a language X to support a notion of electronic rights?
The work I have presented for JavaScript has been done also for Java (in Adrian Mettler's PhD thesis at Berkeley, leading to JOE-E), for OCAML by Marc Stiegler and myself (with the Emily language) and for Scheme (by Jonathan Rees). These are the ones of current practical use and they maintain similar abstractions not only at the local level, but also for distributed computations. It has also been done for the -calculus with Tamed Pict There have been repeated attempts to introduce erights to Python, but for some reason they have all failed so far. Fundamentally the underlying language should provide as many as possible of the 4 restrictions on the use of objects I indicated in my talk, or allow the programmer to achieve the missing restrictions through the language mechanisms. That is what we did for JavaScript.

The recent financial crisis can be told as a story of broken promises What about promises which can be broken in a computation?
In a sense, promises are always at the risk of being broke. In finance, this risk is actually part of the calculation of costs and benefits. What was the surprise in the financial crisis was the correlation among the great number of promises which were broken at once. In computation, failures can always occur and models take this into account, on an individual basis. So the question is whether we are in danger of a massive synchronised failure at the network scale. This is an open question, but personally I think we are very vulnerable.

How do you see the interplay of language-based security with other aspects of security, typically crypto or protocol verification?
Altogether I am surprised that there is no more cross-over between crypto and protocol verification than there actually is. The proof techniques are similar, so I would expect more interconnections there. At the language level, we rely on cryptographic properties when we want to implement secure distribution, but we need to check these properties only once. All subsequent verification of the computations involving crypto can be done at the language level.

Tonight's dinner

For indications on how to reach the restaurant "Il Pulcino Ballerino", please have a look at your ETAPS programme, where you can find a map and detailed indications.