



ETAPS Daily

Number 4

Monday, April 1



March 29-April 6, 2008, Budapest, Hungary

INVITED TALK

Today's invited talk is given by Thierry Coquand at boat Europa at 09:00 on "*Constructive Mathematics and Functional Programming*".

Thierry is currently Professor at Göteborg University with research interest in program correctness, type theory, formal proofs and topologies, functional programming, and constructive mathematics.

INTERVIEW

Yesterday's invited talk was given by Connie Heitmeyer about the role of formal methods in the development of dependable and high assurance systems such as avionics, control systems of nuclear plants, or life critical medical devices.

ETAPS Daily: What do you see as the main difference of using formal methods in the 90s and today?

Connie Heitmeyer: I think that the static analysis tools like Coverity and SVC are two tools based on formal methods we did not have ten years ago.

Theorem provers and model checkers have improved algorithms and better user interfaces. Ten years ago, there were problems with the counter examples having thousands and thousands of states; those problems are certainly decreased.

E.D.: What kind of errors do people most likely tend to make in developing critical software?

C.H.: Oh, people make all matter of errors. In the weapon system in my talk, the specification included six safety properties, and each of them was violated, which demonstrates that either the specification or the properties are wrong. But tools, such as model checkers could be extremely effective in revealing those kinds of errors, which people forget to find.

E.D.: What do you see as the role of natural language specifications?

C.H.: I believe there is a need for two specifications. First, a natural language specification is needed which has diagrams and perhaps tables and final state diagrams etc. to provide the developers with intuition about their system. The other specification is a precise statement of the required, externally visible behavior that does not have an implementation bias and can be checked for consistency and completeness.

E.D.: What do you see as main barriers of using formal methods?

C.H.: The primary problem is that requirements are poorly understood, documented and specified. The other problem is a cultural one, there is a great differ-

ence between the current process of building software and that advocated by people using formal methods.

E.D.: Do you think that the available tools with formal methods could be efficiently used for non-critical application areas?

C.H.: To apply formal methods,

one needs to make an investment in the formal specification, so I think if you build e.g. web software, it may not be cost effective to use formal techniques. Because if you invested the time to develop the formal specification, then it would too late for you to get to the actual job.

TRIVIA

The predecessor of *Budapest University of Technology and Economics* was founded in 1782 as *Institutum Geometrico-Hydrotechnicum*, the first institute in Europe to train engineers at university level. It was reorganized and renamed several times: *Joseph College of Technology* (1844), *Royal Joseph Polytechnic* (1856), *Royal Joseph University* (1862), *Technical University of Budapest* (1949), *Budapest University of Technology and Economics* (2000).

Currently, 1300 teachers and researchers in 110 departments teach over 24,000 students of 8 faculties.



The *Department of Measurement and Information Systems* and the *Department of Automation and Applied Informatics* participated in the organization of ETAPS.

PROGRAMME

		April 1st, Tuesday		
	Room	ESOP (Magnolia)	FASE (Ybl)	TACAS (Star)
9:00	Session 1	Invited talk of Thierry Coquand		
9:30		(Room:Europa)		
10:00		Coffee		
10:30	Session 2	Static analysis (ch:German Puebla)	Service engineering, Adaptable services	Model checking II. (ch: Patricia Bouyer)
11:00				
11:30				
12:00				
12:30	Lunch			
13:00				
13:30		EASTT		
14:00				
14:30	Session 3	Security I. (ch: Gilles Barthe)	Verification and testing I.	Static analysis (ch: Michael Huth)
15:00				
15:30				
16:00		Coffee		
16:30				
17:00	Session 4	Concurrency (ch: Susan Eisenbach)	Verification and testing II.	Concurrent/ distributed systems (ch: Lenore Zuck)
17:30				
18:00				
18:30				
19:00		EASTT		
19:30				

Today there is no organized dinner at ETAPS. For a list of recommended restaurants & pubs, please check the conference homepage.

Presentation of ETAPS 2010 bids is held at 19:00 in Room Magnolia.

The 24th edition of Software Technology Forum organized by the John von Neumann Computer Society takes place at 10:00 at Bank Center Budapest (Szabadság Square 7.) with the invited talk of Yuri Gurevich.

WEATHER FORECAST

Tuesday: Sunny, 16°C (61 F) / 4°C (39 F)

Wednesday: Partly Cloudy, 15°C (69 F) / 3°C (37 F)

CULTURE & SIGHTSEEING

If you have some time during the week, you could visit the Hungarian National Museum (www.hnm.hu) where the entrance to permanent exhibitions is free. Currently it also hosts the Hungarian Press Photo exhibition.

The Castle District is famous about its medieval, Baroque and 19th century houses and public buildings. It can be reached by bus (Várbusz) from Moszkva Square (reachable from the venue by Trams 4 or 6), on foot or you can take the funicular uphill from Lánchíd. Fisherman's bastion offers a beautiful view on the city. Hungarian National Gallery (www.mng.hu) can also be found here with a collection of the Renaissance Art in Hungary.

Those who like contemporary arts should *The Leipzig phenomenon* (www.mucsarnok.hu) to obtain a picture



on the last years of a “strong local, chiefly realistic painting tradition” in Germany.

For a unique concert, you may visit the one of the performances of STOMP, a combination of drums, movement, and visual comedy (showtimebudapest.hu).

SCIENTIST OF THE DAY

John George Kemeny (in Hungarian: Kemény János György) (May 31, 1926, Budapest, Hungary - December 26, 1992, Hanover, New Hampshire), was a Hungarian-American mathematician, computer scientist, and educator best known for co-developing the BASIC



programming language in 1964. He also served as the 13th President of Dartmouth College 1970-1981 and pioneered the use of computers in college education and in the promotion of the "new math" in the USA. Kemeny chaired the presidential commission that investigated the

Three Mile Island accident in 1979.

Kemeny attended primary school in Budapest, Hungary. In 1940, his father escaped the Kemény family to the United States where he graduated at Princeton in 1947, then worked for his doctorate under Alonzo Church. He worked as Einstein's mathematical assistant during graduate school. Kemeny was awarded his doctorate in 1949 for a dissertation entitled "Type-Theory vs. Set-Theory". He developed the Kemeny-Young method which is also known as the “maximum likelihood method”, the “linear ordering problem” or “VoteFair popularity ranking” in 1959.

Kemeny and Thomas Kurtz invented the well-known BASIC (Beginner's All Purpose Symbolic Instruction Code) programming language in 1964, as well as one of the world's first timesharing systems, the Dartmouth Time-Sharing System (DTSS).

(from Wikipedia, collected by Gábor Huszerl)

LEARN SOME HUNGARIAN

When entering somewhere, you can say “Jó napot!” (“Hi”, literally “Good day!”). “Viszontlátásra” means “Goodbye! ”. “Szia” pronounced as “See ya” is an informal version. “Köszönöm” stands for “Thank you” and when you have a drink, you should say “Egészségünkre” for “Cheers” (literally, “To our health”). Have a nice time practicing...

Yesterday's quiz answers: The bridge is called “Széchenyi Chain Bridge” and the was Count István Széchenyi, the founder of Hungarian Academy of Sciences, one of the Hungarian reformers in the 19th century (his father was the founder of Hungarian National Museum). The lions at the foot of the bridge have no tongues, which is mentioned during every sightseeing tour in Budapest....