Report on ETAPS 2000

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ETAPS 2000 (European Joint Conference on Theory and Practice of Software) was held in Berlin from March 25 to April 2. I picture ETAPS as a solar system, with the conglomerate itself as the Sun, each of the main conferences, CC (Compiler Construccion), ESOP (European Symposium on Programming), FASE (Fundamental Approaches to Software Engineering), FOSSACS (Foundations of Software Science and Computations Structures), and TACAS (Tools and Algorithms for the Construction and Analysis of Systems) as the main planets, and the workshops and tutorial as satellites. All in all, more than 500 people participated in ETAPS events.

All the scientific events took place in the Mathematics Building of the Technical University of Berlin. The organization, under the responsibility of the organizing chairs Bernd Mahr, Hartmut Ehrig, Peter Pepper, Stefan Jähnichen and Radu Popescu-Zeletin and with the assistance of other TU staff, faculty and students was very good. Having all the events in the same building and in close-by auditoriums made it easy for people to meet each other and have informal discussions.

The invited talks were common to all participants, and provided a sense of thematic unity by addressing different important topics in software theory and practice. The invited speakers and their talks were the following:

- Grzegorz Rozenberg on "DNA Computing in Vivo and Graph Transformations," a talk explaining DNA Computing and relating it to Graph Grammars.

- Abbas Edalat on "A Data Type for Computational Geometry and Solid Modeling," a talk showing how domain theory can be used to develop constructive metric topologies for computational geometry that can be used in practical applications such as CAD and robotics.

- Wlad Turski on "An Essay on Software Engineering at the Turn of the Century," a personal reflection on software engineering and its theoretical foundations from the creation of the discipline to the present, with some views about the future.

- Richard Soley on "Memex is not Enough," a talk on how the web in a sense realizes ideas envisaged by Vannevar Bush fifty years ago on the wide availability of linked, indexed data, and the software technology challenges involved in supporting dynamically developed data.

- David Harel on "From play-in Scenarions to Code: an Achievable Dream," a talk discussing the need for semantics and semantics-based tools to bridge the gap between design notations and code.

- Pierre Wolper "On the Representation of Constraints by Automata in the Verification of Infinitary Systems," an overview of algorithms for constructing automata from linear arithmetic constraints.

- Reinhard Wilhelm on “Shape Analysis,” a new program analysis technique based on abstract interpretation, with applications to compiler technology and to some forms of verification.

- Martin Odersky on “Functional Nets,” an new foundation for declarative muti-paradigm distributed programming.

Besides the enlightening invited talks, I enjoyed and benefited from most of the other talks I attended in the different conferences and workshops. Although the scientific level was quite good across the board, I was particularly impressed by several of the talks in TACAS.

The Satellite Worshops were another very good feature of ETAPS. They included GRATRA (Graph Transformations) CMCS (Coalgebraic Methods in Computer Science) CBS (Communication-Based Systems) INT (Integration of Specification Formalisms) and CoFI (Common Algebraic Initiative). They provided additional vibrancy to ETAPS by stimulating focused work and discussion in a range of current research directions.

The Tutorials on XML, Maude, the SCR Method, Multi-Paradigm Programming, UML, and SDL 2000 contributed in yet another way to the overall success of ETAPS by offering good introductions to these different advanced topics.

Overall, I found ETAPS' goals of combining software theory and practice—articulated very well by Don Sanella at the opening session—well served by the Berlin meeting. For many reasons, including the very fast rate at which technology is changing, bridging the gap between theory and practice in software requires a serious long-term commitment by many researchers, and the social support of high-quality conferences like ETAPS.

ETAPS 2001 will take place in Genova April 2–6. I look forward to an excellent program also in Genova. I finish with the words written on the back of my ETAPS 2000 T-shirt,

Arrivederci a Genova ad ETAPS 2001!