FACS FACTS

The Newsletter of the BCS Special Interest Group in

Formal Aspects of Computing Science.

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Editorial

This newsletter has not appeared for a very long time. For that we must apologise, and can only plead that the committee is very short of active effort. Consequently, FACS has been quiescent for over a year. As members will know, to compensate for the lack of services, the membership fee has been waived for the current year.

There have been and are other activities in the formal methods area and this issue brings some of them to your attention. Meanwhile, if anyone with some drive and the need to build a CV would like to rejuvenate FACS, please let a member of the committee know. An AGM is overdue, but has not been called because there has been a lack of nominations to form a new active committee.

Some Recent Events

FACS at 21

The last FACS event was held in December 1998 at the Royal Society, to commemorate twenty-one years of the special interest group. In "FACS at 21" the four Fellows of the Royal Society who are among the UK's leading theoretical computer scientists gave their own retrospective views and thoughts about the future of formal methods.

Mike Gordon, in "Twenty-one years of Hardware Verification", talked of the efficiency breakthroughs in the past, trends in the 1990s, "hot 1998 research topics" and made some predictions for the future.

Tony Hoare, in "Top Down and Bottom Up and Meeting in the Middle", drew an analogy with cosmology and quantum physics meeting at the big bang in describing the roles and capabilities of the three different kinds of semantics, algebraic, operational and denotational.

Robin Milner, in "Computing is Interaction", explained his thesis and moved from program semantics to the semantics of interaction, finally discussing the roles of names (references, textual rewriting as in λ-calculus, or a means of establishing connectivity).

Gordon Plotkin, in "Theories of Abstract Syntax", first illustrated syntax, structures and abstract syntax trees and then went rapidly through the several research approaches taken over the years: "Constructor" points of view (McCarthy, Landin, Burstall), Algebraic approaches (ADJ group, Σ-algebras and other inspirations from universal algebra), the Categorial approach, Type Theory and other mathematical devices for handling context sensitivity.

In all the day was a great success and finished with a very pleasant dinner for the speakers and any others who opted for it. In addition to celebrating FACS's 21st birthday, there was the pleasing numerological coincidence that the number of registrations for the event was exactly 100.

Symposium in celebration of the work of Tony Hoare

This three-day event gathered together probably the largest collection of eminent names in theoretical computer science ever, either in the past or the likely future, since many participants and speakers briefly suspended their professional retirements in order to contribute. There were a large number of speakers and it will be possible only to list them with the titles of their talks, where available. The symposium was held at St. Catherine's College Oxford, which provided a most enjoyable, relaxed venue for this unique event.

The speakers were as follows. For some untitled talks I have improvised titles from my own notes. I hope this will not offend anyone.

Samson Abramski	Game semantics, sequentiality
Richard Bird	Laws of optimisation
Dines Bjørner	
Ian Page	Programmable gate arrays, translating SW to concurrent HW
Rod Burstall	
Jim Woodcock	Smart Cards case study – theory and practice
Bernard Sufrin	Modeless structure editing
Edsger W. Dijkstra	A formula is worth a thousand pictures
Mike Gordon	Theorem Provers and Model Checkers on one platform
He Jifeng	Duration Calculus and hybrid systems
Rick Hehner	Formalism and the Variable

David Gries	Substitution – à la Leibniz
Michael Jackson	The Real World
Cliff Jones	Compositionality, Interference and Concurrency
Donald Knuth	Dancing Links
Butler Lampson	Efficient redo recovery
David May	Transputer revisited
Bill McColl	Compositional Systems
Roger Needham	Distributed Computing – Opportunity, Challenge or Misfortune?
Dana Scott	An Intrinsic Topology for (All) Sets
Jay Misra	Generating Functions of Interconnection Networks
Carroll Morgan	"Probably Hoare? Hoare Probably!" (on non-determinism, abstraction and probability)
Bertrand Meyer	Principles of Language Design and Evolution
Niklaus Wirth	Records, Modules, Objects, Classes, Components
Richard Brent	Extended binary Euclid's algorithm for GCD
Zhou Chaochen	Higher order duration calculus
John Reynolds	Shared mutable data structure
Robin Milner	Computing and Communication – what is the difference?
O-J Dahl	Versions of the Monitor

FM'99

Formal Methods '99 took place in Toulouse from 20th to 24th September 1999. It was organised by Formal Methods Europe and followed on from previous FME conferences. This one was deliberately opened to a more international audience and participation, a "world congress", hence the change in title from FME'nn to FM'99. It is reported to have been a considerable success, with over 500 participants and 32 tool exhibitors. A competition was held for the tool exhibitors based on a problem that was set for speakers at a workshop on concurrency in 1983, specifying and modelling a cash-point (ATM) banking service. Some sixteen exhibitors participated in the competition and a paper on the solutions is being written for the FAC Journal. This will follow a special issue of the Journal, number 12/3, which, in conjunction with special issues of IEEE Transactions on Software Engineering and Formal Methods in System Design, will present selected papers from FM'99.

The next FME symposium will be FME 2001 held in Berlin at Humboldt University from 12th to 16th March 2001.

Some Forthcoming Events

FME 2001 "Formal Methods for Increasing Software Productivity" Berlin 12-16 March 2001	http://www.informatik.hu-berlin.de/top/fme2001
The Software Reliability and Metrics Club 19th October 2000	csr@newcastle.ac.uk http://www.csr.ncl.ac.uk/
Third International Conference on Formal Methods in Computer-aided Design November 1-3, 2000 at Austin Texas	http://www.cs.indiana.edu/~sjohnson/FMCAD/
Formal Specification and Verification Methods for Shared Memory Systems October 31, 2000 (a day prior to FMCAD'00)	http://www.cs.utah.edu/mpv
THE FIRST ASIA-PACIFIC CONFERENCE ON QUALITY SOFTWARE (APAQS 2000) October 30-31, 2000	http://www.csis.hku.hk/~tse
CASES 2000 International Conference on Compilers, Architectures and Synthesis for Embedded Systems November 17-19, 2000 Doubletree Hotel San Jose, CA, USA	http://www.capsl.udel.edu/conferences/cases2000
ICFEM2000	http://www.cs.york.ac.uk/icfem2000
UML'2000 WORKSHOP DYNAMIC BEHAVIOUR IN UML MODELS: SEMANTIC QUESTIONS	http://www.disi.unige.it/person/ReggioG/ UMLWORKSHOP/CALLFORPAPER.html
Formal Methods for Open Object-Based Distributed Systems Stanford University, Stanford, California, USA September 6-8, 2000	http://www.ics.uci.edu/~fmoods2000
19th IEEE Symposium on Reliable Distributed Systems (SRDS2000)	http://srds2000.informatik.uni-erlangen.de/
ASIAN'00 Asian Computing Science Conference Penang, Malaysia, November 25-27, 2000	http://www.sato.kuis.kyoto-u.ac.jp/~asian00

First Polish-German Teletraffic Symposium PGTS2000 jointly held with the "7th Polish Teletraffic Symposium" Dresden, Germany Technische Universitaet Dresden 24-26 September 2000	http://www.ifn.et.tu-dresden.de/TK/english/PGTS2000/
FORMS 2000 - Formal Techniques for train control,	http://www.ifra.ing.tu-bs.de/forms/
ACL2 Workshop 2000, October 29-31, Austin, Texas (just before FMCAD)	http://www.cs.utexas.edu/users/moore/acl2/workshop-2000/index.html
Fifth Australian Workshop on Requirements Engineering (AWRE 2000) 8-9 December 2000	Email: didar@it.uts.edu.au
FTRTFT 2000 Formal Techniques in Real-Time and Fault-Tolerant Systems 6th International School and Symposium School: 18-19 September; Symposium: 20-22 September 2000 Pune, India	http://www.pune.tcs.co.in/ftrtft/
FMCAD 2000: Third International Conference on Formal Methods in Computer-Aided Design. November 1-3, 2000 at Austin Texas	http://www.cs.indiana.edu/~sjohnson/FMCAD/

Some New/updated Products

JMOCHA	Model Checker	http://www.eecs.berkeley.edu/~mocha
(CWB-NC) Version 1.2	Concurrency Workbench of the New Century (GCTL, SCCS)	http://www.cs.sunysb.edu/~cwb
ACF	A framework for writing model-checkers.	http://aiken.cs.abo.fi/acf
VDMTools	Free Academic Site Licenses (VDM-SL)	http://www.ifad.dk/
Z/EVES version 2.1	Update at no cost.	http://www.ora.on.ca/distribution.html

Some Posts

Junior Researcher in Computer Science (Ph.D. Student) at EPFL, The Software Engineering Lab of the Swiss Federal Institute of Technology in Lausanne, Switzerland	http://lglwww.epfl.ch/ mailto:alfred.strohmeier@epfl.ch
Research/Technology Transfer Positions (2) Software and Systems Assurance; Software Verification Research Centre, University of Queensland (Closing date 18 September 2000. Please quote Reference Number 49100)	svrc@svrc.uq.edu.au http://svrc.it.uq.edu.au/
Job openings in formal methods for smartcards at INRIA. INRIA is opening up several doctoral and post-doctoral positions at Rocquencourt (projet Coq), Rennes (projet Lande) and Sophia-Antipolis (projets Lemme and Oasis). All positions are related to projects aimed at applying formal methods to the verification of the JavaCard platform and of JavaCard applications. Most projects are carried out in collaboration with leading industrial companies in the field (Bull, Gemplus, Schlumberger)	Gilles.Barthe@inria.fr http://www-sop.inria.fr/oasis/personnel/Gilles.Barthe/index.html Yves.Bertot@inria.fr http://www-sop.inria.fr/lemme/Yves.Bertot/index.html jensen@irisa.fr http://www.irisa.fr/lande/jensen/index.html http://www.irisa.fr/lande/jensen/index.html paulin@lri.fr http://www.lri.fr/~paulin
Research Position in the DFG research project Net based software development (NSE) within the »DFG-Forschergruppe Petrinetz-Technologie« between Technical University Berlin and Humboldt-Universit"at zu Berlin, (timed Petri nets and their use in workflow management).	http://www.informatik.hu-berlin.de/PNT/
Lectureships in Computing, Reference number J5705, Brunel University	http://www.brunel.ac.uk/~csstrmh/ e-mail us on recruitment@brunel.ac.uk quoting post reference number J5705
Research Assistant Position (2 yrs) + "A Free Master Degree" Software Engineering Lab, School of Computing, National University of Singapore	http://www.comp.nus.edu.sg/~dongjs/ Dr. Jin Song DONG dongjs@comp.nus.edu.sg

University of Southampton Department of Electronics and Computer Science: Chair in Formal Methods/Theoretical Computer Science	http://www.ecs.soton.ac.uk/~ph/P660.htm
Post-Doc Position, ENS de Cachan, LSV, UMR 8643 – CNRS, 61 av. President Wilson, F-94235 CACHAN Cedex, France	http://www.lsv.ens-cachan.fr car@lsv.ens-cachan.fr
Research Position in the DFG (German Research Council) research project Universal Approach to Net Based System Description	http://tfs.cs.tu-berlin.de/~petri/

FME News

FME's new web-site, reconstructed from some web-sites produced in the EC funded ESSI project FMEInfRes, is now in place at www.fmeurope.org . Further improvements to it are planned.

The Call for Papers for FME 2001 has been widely distributed.

Peter Lucas has expressed his wish to resign as the chairman of FME. A new chairman will be elected at the next AGM on 11th November.

For some time now there has been no funding from the EC to assist with committee meeting costs. At the same time, a need has been perceived to establish FME as a legal entity, so that it can, for example, apply for EC Fifth Framework grants like other organisations. Accordingly, FME is now constituted under Netherlands law as a non-profit organisation with a small executive board and a possible wider group of members.

A sub-group has been set up to consider the scope of FME – what other activities it should pursue besides the series of symposia. A second sub-group is considering education.

BCS News

FACS is a special interest group of the BCS and necessarily has formal links with its parent organisation. At least once a year a committee member is requested to attend the BCS Technical Board. The following recent BCS activities reported at the Technical board may be of interest:

- Two joint IEE/BCS seminars were/are to be held June and October: on the subject of "Systems Engineering in Business"

- The BCS propose to set up new WEB pages. There was a presentation on the plans for these pages, which look ambitious with lots of functions.

FACS Coordinates

FACS Officers

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Newsletter Contributions

Send them by email in an attached file in LaTeX, MS Word or Rich Text Format to Tim Denvir, coordinates above. Short items such as news of a new product can be embedded directly in the message if you prefer.