

BCS08: Visions of Computer Science

Thoughts about a possible BCS Academic Conference germinated in the Summer and Autumn of 2007. There has been an ongoing discussion within the U.K. computing community for some time on how best to extend and strengthen Learned Society activities in Computer Science. The U.K. Computing Research Committee (UKCRC) had convened a Working Group on this topic, and one of the ideas that emerged from its discussions was of a conference, with the theme of Visions of Computer Science. We saw a conference around this theme as capable of playing an inspiring and formative role in the development of our discipline as a whole. Another major impetus came with one of us (EG) taking over as Editor of the Computer Journal. Following this, and some congenial meetings at Imperial College hosted by EG, the ideas for this conference started to take shape. The relationship with the UKCRC Grand Challenge events was discussed, and the proposed conference was deemed to be both complementary to and supportive of these prior initiatives. A group that quickly became the Programme Committee took shape and held some meetings in London. After receiving the support of UKCRC, and the commitment of BCS support from Mike Rodd, we decided to take the risk of launching this conference with less than a year to go before it was to take place.

We all thought that this first conference must span a broad range of topics in Computer Science and Engineering, going from Theory to Networks, from Artificial Intelligence and Agents to Digital Systems, and from Computer Vision to Programming Languages and Grand Challenges. The next step of course was to mitigate the risk we were taking, including the preparation of a realistic and conservative budget that the BCS would find acceptable, and the identification of a viable date and venue.

However we also needed to mark our ambition with some exceptional speakers. Having contacted several Turing Award Winners, we were surprised and delighted by the support we received from Fran Allen, Vint Cerf, Tony Hoare, Dick Karp, Robin Milner, Michael Rabin and Joseph Sifakis, who all accepted the invitation. We are honoured by their trust and most grateful to them for their great contribution to making it a truly exceptional event. The Programme Committee also identified additional invited speakers who are outstanding leaders in their field, and we are most grateful to them too for making a major contribution to the programme.

Despite the conference's lack of a track record, the Call for Papers attracted a significant number of very good submissions, so that the first BCS "Visions of Computer Science" is truly outstanding, and a special issue of the Computer Journal will include a selection of papers that are included in these proceedings.

Thus the programme of '*Visions of Computer Science*' comprises 7 keynote speakers, 7 invited speakers, and 34 contributed papers, selected from 79 submissions. These were thoroughly peer-reviewed by programme committee members and by several external reviewers. We find these figures rather promising for the future of a new conference being held for the very first time.

The call for papers solicited submissions in all areas of research covering the broad field of Computer Science and Engineering, ranging from digital systems and computer architectures to theoretical computer science, from artificial intelligence and agents to networks and web computation, from programming languages and software engineering to medical applications. In fact, the conference received high-quality submissions in all of its areas of interest, and in the end several good papers unfortunately had to be excluded for lack of space. The accepted papers can be classified roughly as follows.

Algorithms & Complexity:	4
Artificial Intelligence:	3
Biocomputing:	2
Computer Vision:	3
Digital Systems & Hardware:	5
Formal Methods & Semantics:	5
Machine Learning:	2
Networks:	4
Software Eng & Programming Methods:	5
Grand Challenges	1

The last of these categories refers to the UK Computing Research Committee's initiative '*Grand Challenges for Computing Research*' (www.ukcrc.org.uk/grand_challenges), to which a special session of the conference was dedicated. A panel and discussion on the role of women in computing was also organised by Ursula Martin and Caroline Wardle.

Because of its breadth, and its idea of pulling together the best from a very broad spectrum, '*Visions of Computer Science*' is indeed a unique conference. We hope that will prove to be the first of a successful series of meetings — the future will tell how successful it can be. From our viewpoint, it has been a privilege to be associated with this '*first edition*;' we believe we have put together a programme of outstanding quality to match the occasion.

As we conclude, we express our deep gratitude to the Programme Committee Members, as well as the referees, for accepting to join us in this enjoyable and hopefully successful expedition. We are grateful to Steve Furber for his support, and also to Tony Hoare for his encouragement and for helping us in securing support from Microsoft to allow a larger number of students to participate in this event. Special thanks go to the BCS team led by Mike Rodd, with Elaine Boyes, Clare Blunt, Anna Duckworth and Christine Duma. We also thank Dr Moez Draief and Mrs Shahareen Hilmy for their kind help at Imperial College, and the Imperial team that handles conferences and events for their active participation.

Samson Abramsky, Erol Gelenbe, Vladimiro Sassone
August 2008

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Keynote Speakers

Fran Allen
Vint Cerf
Tony Hoare
Richard Karp
Robin Milner
Michael Rabin
Joseph Sifakis

Invited Speakers

Andrew Campbell
Steve Furber
Laurie Hendren
Nick Jennings
Stephen Muggleton
Brigitte Plateau
Moshe Vardi

Conference Chair

Erol Gelenbe

Programme Chairs

Samson Abramsky
Vladimiro Sassone

Local Organization

Moez Draief

Programme Committee

Christian Beckmann	Anthony Finkelstein	Alex Rogers
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Muffy Calder	Wendy Hall	Martyn Thomas
George Costantinides	Jennifer Hallinan	Federico Turkheimer
Yiannis Demiris	David Hutchison	Mike Wooldridge

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