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Formal Aspects of Computing

Obituary: Professor David Michael Ritchie Park

Friends and colleagues of David Park were shocked and saddened to learn that he died on 29th September 1990 at the age of 55. His death was unexpected, though he had been seriously ill since the early summer. David was a pioneer in several areas of computer science, and indeed he could reasonably be considered the senior theoretical computer scientist in Britain. After an undergraduate degree at Oxford he went to MIT and obtained his PhD for work in model theory under Hartley Rogers. The late 50s was the period when John McCarthy was developing his 'theory of computation', a key feature of which was his novel list-processing language, LISP. David became involved with this project at an early stage and was one of the authors of the language LISP1. His work at MIT and later, on program schemas and fixpoint theory, made important contributions to the early theory of computer science.

In 1964 he returned to the UK, first to the Mathematical Laboratory in Cambridge for a short time and then to join Christopher Strachey in the new Programming Research Group at Oxford. Moving to Warwick in 1968, David was one of the earliest members of the Computer Science Department and put much of his professional work into helping to build it up to its present position.

His inaugural lecture in 1983 focussed on the proper aims of computer science as a science and as an academic discipline. It contained a perceptive account of the main evolutionary threads of the subject and warned strongly against letting 'ephemeral' knowledge, however attractive and challenging, displace the 'essential' intellectual foundations of computer science.

Internationally he was probably best known for his work on program schemas, fairness and bisimulation. Program schemas made a clear separation between the control structure of a programming language and the operations performed on data. This formulation allowed the investigation of purely structural program transformations and provided a framework within which the descriptive power of different control structures could be compared.

David was one of the first to identify the importance of the notion of 'fairness' in nondeterministic parallelism, and the need to give it a precise definition. How can we best describe and reason about systems in which some computation is performed 'fairly', so that any process continually attempting to perform its computation is guaranteed to succeed eventually, but with no promise as to how long it may have to wait?

His elegant notion of 'bisimulation' was just what was needed to clarify a thorny point in the semantics of concurrency. Two systems bisimulate each

other if the effect of a step of one can be reproduced by a sequence of one or more steps of the other. The theory of bisimulation can be seen as an application of his earlier work on fixpoint induction.

In each of these areas, David Park's original ideas inspired new fields of research, and gained him an international reputation for his deep insights. However his clear and well-enunciated views on a variety of more practical and socio-cultural issues provided constant stimulation to his colleagues.

He recognised early the power and convenience of electronic mail and used it extensively in discussion and correspondence with colleagues and students. He believed intensely that this medium should not only transform teaching methods, but should also, in many cases, replace the committee (which inconveniently requires a lot of people to be in the same place at the same time) as a means of democratic discussion and decision-making. The students he tutored were delighted to engage in lengthy dialogues on a variety of subjects, including home brewing, definitional problems in economics and the poetry of Gerard Manley Hopkins.

David was chairman of the Computing Science subcommittee of SERC for a while and served as chairman of the Computer Science Department at Warwick, but he clearly did not enjoy these administrative roles. Professionally, he was happiest when deeply engaged in his research or debating issues of scientific or educational importance.

In his non-academic life he was keenly involved in politics, in music (both as a skilled player and a computer specialist), and in a wealth of other interests. He will be sorely missed by his great number of friends and colleagues in many countries: for his unassuming manner and deep intellect, for his supportive friendship, for his intellectual honesty and for his warmth of spirit.

David Park died at the cottage in the Auvergne, which he and his wife Joanna bought only last year, and was buried on the hillside nearby, in a spot he himself had chosen. Our heartfelt sympathies go to Joanna and his children Becca and Toby.

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